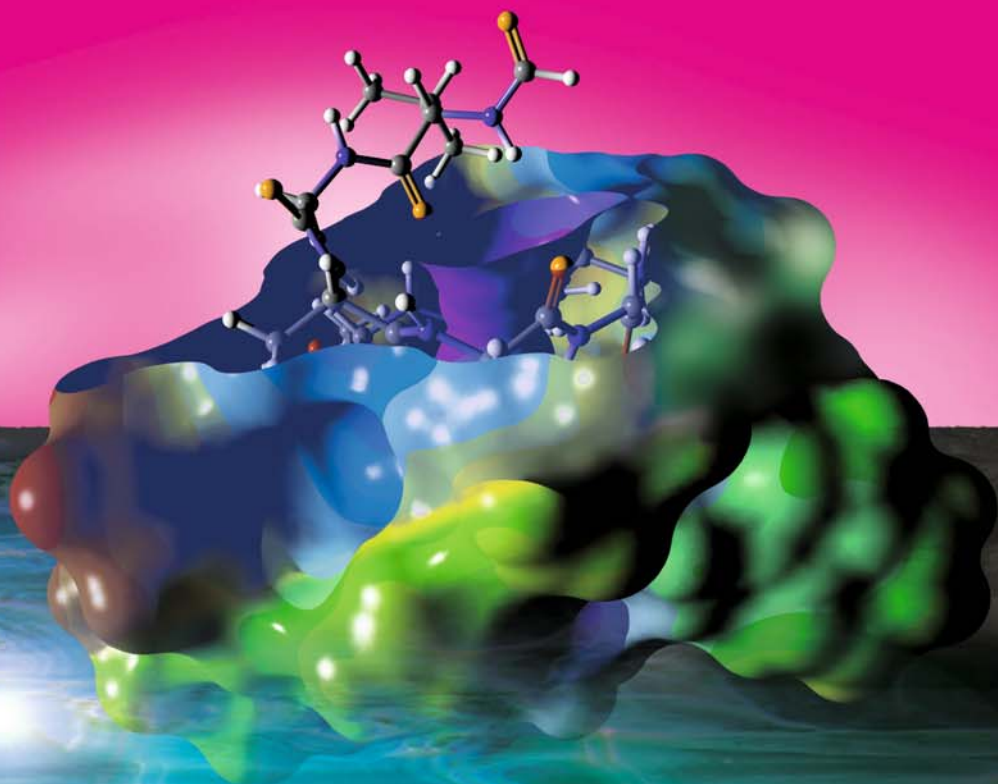


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Yours sincerely
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Recombinant Proteins bioconfident grade.

What does that mean? Typically, growth factors and cytokines are produced in bacteria, yeast or other eukaryotic expression systems (e.g. insect cells, CHO cells). The organism selected for production, as well as the reagents for cultivation (components of media and additives) bear the risk of contamination by bacteria, viruses and TSE. Other components thereof, such as endogenously produced enzymes and other proteins, may contaminate the protein of interest. The endotoxin level of bacterially expressed growth factors is particularly difficult to minimize. *bioconfident grade* – reliable biologically safe: A newly developed expression system for recombinant proteins of animal origin uses the barley grain – endotoxin-free, antibiotic-free, serum-free, no endogenous growth factors, but natural protein folding and glycosylation.

Colorado – A New Generation of Fluorescent Labels.

The Colorado product line is a selection of the newest fluorescent labels available today. Dye structures were carefully chosen to provide top-notch brightness performances, improving bioanalytical assays to the highest level. Eight different basic structures with precise absorption and emission maxima were selected to cover the full working range of wavelengths, starting from 400 nm up to 850 nm. The Colorado structures are based on 4 different chemical classes: coumarin, dipyrromethene borondifluoride, acenaphthopyrrole and cyanine.

AppliCoat Plate Stabilizer –

Improving Quality & Stability of ELISA. Using ready-to-use ELISA kits from manufacturers is easy and convenient. Sometimes however, home-made ELISA are required, perhaps because there is no kit available with the right antibodies or characteristics, such as the limits of detection are not appropriate. Ready-to-use ELISA kits from reputable suppliers may be stored for two years at 4°C without any problem. With home-made ELISA kits it is a completely different story. For any new measurement one has to coat a new plate, because after storage for some days the plates don't perform as well as before. In commercial ELISA kit production, the plates are not only blocked after coating, but also stabilised. This easy-to-perform process has been an industry standard for thirty years. For stabilisation of a plate one has to incubate with a coating stabiliser solution. It is just as simple as a "second blocking step". However there were no such high quality stabiliser solutions freely available in low volumes for use in the research lab until now. AppliChem now offers a product for use in every research lab in volumes starting as small as 50 ml, which is called the AppliCoat Plate Stabiliser (Cat. No. A7708).

Cell Proliferation Test Kit XTT. Cell proliferation assays are widely used in cell biology for the study of growth factors, cytokines or media components. They are also applied in the screening of cytotoxic agents and lymphocyte activation. In order to determine the number of viable cells Cell Proliferation Kit XTT employs 2,3-Bis-(2-methoxy-4-nitro-5-sulphophenyl)-2H-tetrazolium-5-carboxanilide salt (XTT). It is only in living cells that mitochondria are capable of reducing XTT to form an orange colored water soluble dye. Therefore, the concentration of the dye is proportional to the number of metabolically active cells. This test replaces the radioactive assays.

Size Exclusion Chromatography. Size-exclusion chromatography (SEC) is a popular method to separate biomolecules based on their size. Primarily, it is applied to the separation of biopolymers such as proteins and nucleic acids, i.e. water-soluble polymers. This system is also called gel filtration, typically with

beads of dextran or agarose serving as gel matrix. Smaller molecules pass significantly slower through the column than larger molecules. Not to be confused with gel electrophoresis, there are big differences in terms of the separation principle. SEC does not require electric current and the sieving effect will not separate small molecules first. AppliChem's size-exclusion chromatography columns are packed with AppliXchange-G25 M, a beaded composite material composed partially of polymerized dextran. It exhibits high selectivity, high resolution and chemical stability. Typical applications are

desalting, buffer exchange, purification of proteins and nucleic acids, and dye terminator removal.

SeparateIT. Improving Separation During Electrophoresis: SeparateIT gels represent a novel gel matrix for DNA electrophoresis. Gel polymers are arranged in a conceptually different way, in accordance with a new theoretical model of gel electrophoresis. SeparateIT gels selectively retard the migration of large molecules, so that DNA bands remain sharp but are more spread out relative to each other. Thanks to this increased spacing, the resolving power of SeparateIT gels is at least twice that of any other gels, including polyacrylamide gels. Two DNA fragments in the 70-150 bp range that differ by 1 bp can be separated on SeparateIT gels that are 8 cm long.

ExitusPlus™, now even more active – DNA decontamination as effective as bleach, but nonhazardous. We further developed the formulations of all liquid ExitusPlus™ reagents, resulting in a decontamination activity as high as bleach. The new reagents contain some alcohol (< 5 %) for improving the access of the active components to the surface, and a reduced concentration of color indicator.



AppliChem ships most biochemicals at ambient temperature that have to be stored at either 2-8°C or -20°C. This includes products like Albumin, Proteinase K, X-Gal, IPTG or liquified Phenol. We know from experience that refrigerated shipment of these products is not necessary, since we couldn't observe a reduction in quality or activity of the products under these conditions, even if the shipment took several days.

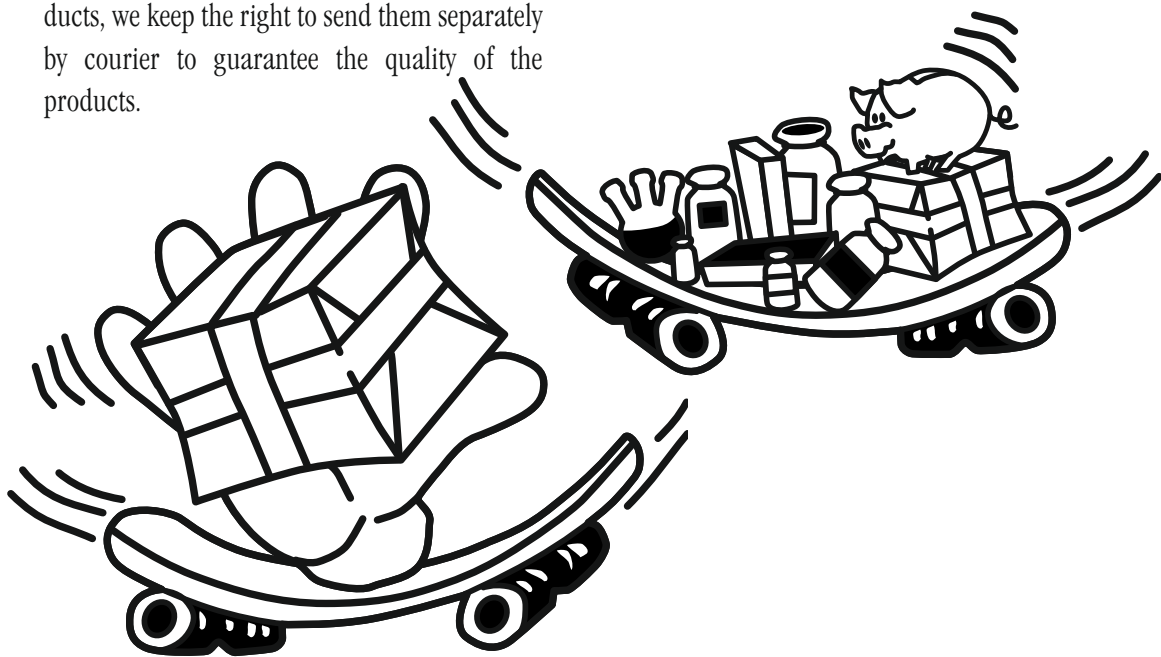
For longterm storage please place such products either in a refrigerator or in a freezer upon arrival, as indicated on the package label/bottle. Shipments with dry ice will have an extra dry ice charge of € 23.80 for shipments outside Germany. In case temperature sensitive products have been ordered together with insensitive products, we keep the right to send them separately by courier to guarantee the quality of the products.

Shipping Information

Ordering Boxes

In terms of safety and optimization of packing and shipment it is of advantage when certain bottled products are packed in boxes of 6 pieces (1L) and 4 pieces (2.5L). Therefore, the price per piece in a box normally is lower than

the price of a single bottle. Ordering odd quantities, e.g. 5 or 7 pieces, will raise the costs for packing dramatically. Thus, calculation is as follows: the maximum numbers of boxes will be charged at the box price, additional bottles will be charged at the single bottle price.

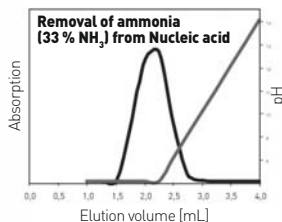
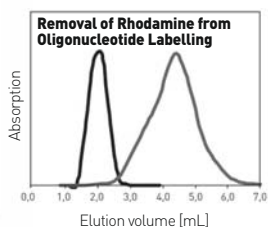
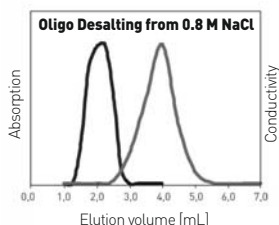


Maximum Performance

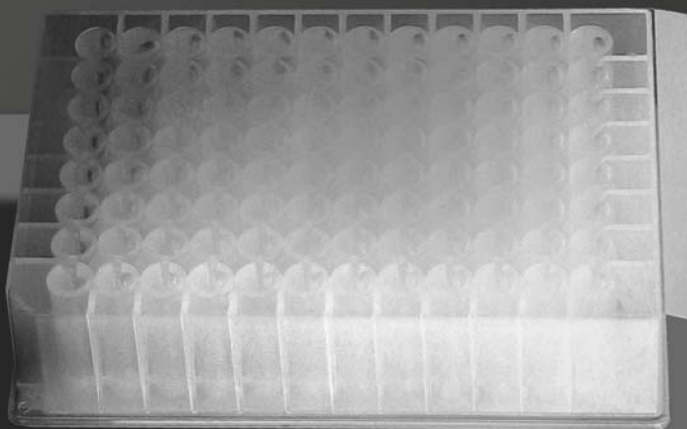
Size Exclusion Chromatography (Gel Filtration)

- Applications, e.g.
- sharp peaks
 - more than 90 % recovery
 - easy-to-use
 - high resolution
 - high chemical stability
- dye terminator removal in automated
DNA sequencing procedures

Oligonucleotide Purification



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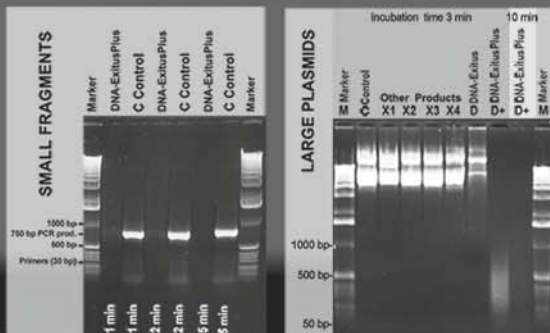
Page 1 of 1.

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Survey of the product groups	1
Alphabetical list of chemicals from A to Z	37
Cell culture powder media	879
Table for the addition of Sodium hydrogen carbonate	881
Formulations of Powder media	885
Appendix	
Abbreviations	915
Atomic weights	916
Comments on Lab Safety GHS/CLP	917
Risk and safety phrases	924
German classification of water pollution risk (WGK)	927
Storage class (LGK)	927
Transport regulations (RID/ADR)	928
German classification of flammable liquids (VbF)	928
Disposal of laboratory waste	928
Neutralization of laboratory waste	928
Literature (German language)	929
Product number index	931
CAS number index	955
Alphabetical product list	967
General terms and conditions	1013

Acids

Description	Page	Description	Page	Description	Page	Description	Page
Acetic acid 100 % ultrapure	39	Hydrochloric acid 37 % pure Ph. Eur., NF	412	Hydrogen peroxide 35 % Technical grade	422	ortho-Phosphoric acid 25 % pure	625
Acetic acid 100 % HPLC grade	39	Hydrochloric acid 37 % Technical grade	412	Hydrogen peroxide 30 % p. A.	423	ortho-Phosphoric acid 20 % pure	626
Acetic acid 100 % p. A.	39	Hydrochloric acid 32 % p. A.	412	Hydrogen peroxide 30 % Technical grade	423	ortho-Phosphoric acid 10 % p. A.	626
Acetic acid 100 % pure Ph. Eur., USP, E 260	39	Hydrochloric acid 32 % pure	412	Hydrogen peroxide 20 % pure	423	ortho-Phosphoric acid 10 % pure Ph. Eur., NF	626
Acetic acid 99 - 100 % for synthesis	40	Hydrochloric acid 32 % Technical grade	412	Hydrogen peroxide 10 % p. A.	423	ortho-Phosphoric acid 5 % pure	626
Acetic acid 98 - 100 % Technical grade	40	Hydrochloric acid 30 % ultrapure	412	Hydrogen peroxide 10 % pure	424	Phosphorous acid 98 % p. A.	626
Acetic acid 96 % p. A.	40	Hydrochloric acid 30 % p. A.	413	Hydroiodic acid 57 % pure	424	Phosphorous acid 50 % p. A.	627
Acetic acid 96 % pure	40	Hydrochloric acid 30 % pure	413	Hypophosphorous acid 50 % p. A.	431	Phosphorous acid 30 % p. A.	627
Acetic acid 96 % Technical grade	40	Hydrochloric acid approx. 30 % for regeneration of desalination equipment	413	Hypophosphorous acid 50 % pure	431	Phosphorous acid 10 % p. A.	627
Acetic acid 90 % Technical grade	40	Hydrochloric acid 25 % p. A.	413	L(+)-Lactic acid (approx. 90 %) pure Ph. Eur., USP, Food grade	476	Propionic acid for synthesis	669
Acetic acid 80 % Technical grade	40	Hydrochloric acid 25 % pure	413	Methanesulfonic acid 70 % pure	533	Sulfuric acid 98 % for nitrogen determination	780
Acetic acid 60 % p. A.	41	Hydrochloric acid 25 % Technical grade	413	Nitric acid 69 % p. A.	568	Sulfuric acid 96 % $\pm$ 0.15 %	780
Acetic acid 60 % pure	41	Hydrochloric acid 20 % p. A.	413	Nitric acid 65 % ultrapure	568	Viscosimetry grade	
Acetic acid 60 % Technical grade	41	Hydrochloric acid 20 % pure	414	Nitric acid 65 % p. A.	568	Sulfuric acid 95 % ultrapure	780
Acetic acid 30 % p. A.	41	Hydrochloric acid 18.5 % for regeneration of desalination equipment	414	Nitric acid 65 % pure	568	Sulfuric acid 95 - 97 % p. A.	781
Acetic acid 10 % pure	41	Hydrochloric acid 15 % p. A.	414	Nitric acid 65 % Technical grade	568	Sulfuric acid 95 - 98 % pure Ph. Eur., NF	781
n-Butyric acid for synthesis	174	Hydrochloric acid 15 % pure	414	Nitric acid 53 % Technical grade	569	Sulfuric acid 95 - 97 % pure	781
Chromic mixture for cleaning of glassware	210	Hydrochloric acid 10 % p. A.	414	Nitric acid 53 % pure	569	Sulfuric acid 95 % Technical grade	781
Formic acid 98 - 100 % p. A.	360	Hydrochloric acid 10 % pure Ph. Eur., NF	414	Nitric acid 40 % p. A.	569	Sulfuric acid 90 - 91 % for fat determination	781
Formic acid 98 - 100 % pure Food grade	360	Hydrochloric acid 10 % Technical grade	414	Nitric acid 25 % p. A.	569	Sulfuric acid 90 - 91 % pure	781
Formic acid 98 - 100 % pure	360	Hydrochloric acid 6 % pure	415	Nitric acid 25 % pure	569	Sulfuric acid 75 % p. A.	782
Formic acid 98 - 100 % Technical grade	360	Hydrochloric acid 5 % pure	415	Nitric acid 20 % p. A.	569	Sulfuric acid 72 % p. A.	782
Formic acid 85 % p. A.	361	Hydrochloric acid 3.2 % pure	415	Nitric acid 20 % Technical grade	569	Sulfuric acid 62.3 % for fat determination	782
Formic acid 85 % pure	361	Hydrochloric acid 1.128 % (w/v) p. A.	415	Nitric acid 10 % p. A.	570	Sulfuric acid 50 % p. A.	782
Formic acid 85 % Technical grade	361	Hydrochloric acid 1 % pure	415	Nitric acid 10 % pure	570	Sulfuric acid 50 % pure	782
Formic acid 60 % pure	361	Hydrochloric acid 0.5 % pure	416	Nitric acid 5 % pure	570	Sulfuric acid 40 % p. A.	782
Formic acid 50 % p. A.	362	Hydrofluoric acid 48 % p. A.	420	Nitric acid 3 % pure	570	Sulfuric acid 40 % pure	782
Formic acid 50 % pure	362	Hydrofluoric acid 40 % p. A.	420	Peracetic acid 15 % pure	605	Sulfuric acid 37 % Technical grade (Battery acid)	783
Formic acid 20 % pure	362	Hydrofluoric acid 40 % pure	420	Perchloric acid 70 % p. A.	605	Sulfuric acid 30 % p. A.	783
Glycolic acid - Solution 70 % for synthesis	387	Hydrofluoric acid 40 - 45 % Technical grade	420	Perchloric acid 70 % pure	606	Sulfuric acid 30 % pure	783
Glycolic acid - Solution 57 % for synthesis	388	Hydrofluoric acid 30 % pure	420	Perchloric acid 60 % p. A.	606	Sulfuric acid 25 % p. A.	783
Hydrobromic acid 48 % p. A.	411	Hydrofluoric acid 10 % p. A.	420	ortho-Phosphoric acid 85 % pure	624	Sulfuric acid 25 % pure	783
Hydrobromic acid 48 % pure	411	Hydrogen peroxide 35 % p. A.	422	ortho-Phosphoric acid 85 % pure Ph. Eur., NF	624	Sulfuric acid 20 % pure	783
Hydrobromic acid approx. 48 % Technical grade	411	Hydrogen peroxide 35 % pure	422	ortho-Phosphoric acid 50 % p. A.	624	Sulfuric acid 10 % p. A.	783
Hydrochloric acid 37 % ultrapure	411			ortho-Phosphoric acid 50 % pure	625	Sulfuric acid 10 % pure	783
Hydrochloric acid 37 % p. A.	412			ortho-Phosphoric acid 40 % p. A.	625	Trifluoroacetic acid Spectroscopy grade	833
				ortho-Phosphoric acid 40 % pure	625	Trifluoroacetic acid HPLC grade	833
				ortho-Phosphoric acid 30 % p. A.	625	Trifluoroacetic acid for synthesis	833
				ortho-Phosphoric acid 30 % pure	625		

Acrylamide crystalline

Description	Page	Description	Page	Description	Page	Description	Page
Acrylamide Molecular biology grade	51	Acrylamide 2K - Mix 19 : 1 (Powder)	52	Acrylamide 2K - Mix 32 : 1 (Powder)	53	AquaPlus - Mix 32 : 1 (30 %) for IEF	53
Acrylamide 4K ultrapure	51	Acrylamide 4K - Mix 29 : 1 (Powder)	52	Acrylamide 4K - Mix 37.5 : 1 (Powder)	53	AquaPlus - Mix 37.5 : 1 (30 %)	54
Acrylamide 2K Standard grade, extrapure	52	Acrylamide 2K - Mix 29 : 1 (Powder)	52	Acrylamide 2K - Mix 37.5 : 1 (Powder)	53		
Acrylamide 4K - Mix 19 : 1 (Powder)	52	Acrylamide 4K - Mix 32 : 1 (Powder)	52	AquaPlus - Mix 19 : 1 (40 %)	53		
				AquaPlus - Mix 29 : 1 (30 %)	53		

Acrylamide - Solutions

Description	Page	Description	Page	Description	Page	Description	Page
Acrylamide - Solution (40 %) Molecular biology grade	54	Acrylamide - Solution (40 %) - Mix 37.5 : 1 Molecular biology grade	57	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (6 %)	61	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64
Acrylamide - Solution (30 %) Molecular biology grade	54	Acrylamide - Solution (30 %) - Mix 37.5 : 1 Molecular biology grade	57	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (8 %)	62	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	64
Acrylamide 4K - Solution (40 %) - Mix 37.5 : 1	54	Acrylamide 4K - Solution (40 %) - Mix 37.5 : 1	57	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (10 %)	62	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	64
Acrylamide 4K - Solution (30 %) - Mix 37.5 : 1	54	Acrylamide 4K - Solution (30 %) - Mix 37.5 : 1	57	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (12 %)	62	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	64
Acrylamide 2K - Solution (40 %) - Mix 37.5 : 1	54	Acrylamide 2K - Solution (40 %) - Mix 37.5 : 1	57	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (15 %)	62	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64
Acrylamide 4K - Stacking gel solution (5 %) for SDS-PAGE	54	Acrylamide 2K - Solution (30 %) - Mix 37.5 : 1	58	Acrylamide 4K - Ready-to-use solution for SDS-PAGE (5 %)	62	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64
Acrylamide 4K - Stacking gel solution (4 %) for SDS-PAGE	55	Acrylamide 4K - Solution (30 %) - Mix 49 : 1	58	Acrylamide 4K - Ready-to-use solution for SDS-PAGE (7.5 %)	62	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (20 %)	64
Acrylamide 2K - Stacking gel solution (5 %) for SDS-PAGE	55	Acrylamide 2K - Solution (30 %) - Mix 49 : 1 for SSCP	58	Acrylamide 4K - Ready-to-use solution for SDS-PAGE (10 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (4 %)	65
Acrylamide 2K - Stacking gel solution (4 %) for SDS-PAGE	55	Acrylamide 2K - Solution (40 %) - Mix 49 : 1 for TAU gels	58	Acrylamide 4K - Ready-to-use solution for SDS-PAGE (12.5 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (5 %)	65
Acrylamide 4K - Solution (50 %) - Mix 16.6 : 1	55	Acrylamide 4K - Solution (63.9 %) - Mix 158.75 : 1 for TAU gels	58	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (15 %)	63	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (6 %)	65
Acrylamide - Solution (40 %) - Mix 19 : 1 Molecular biology grade	55	Acrylamide 4K - Diacryloyl-piperazine - Solution (40 %) - Mix 39 : 1	58	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (10 %)	63	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (8 %)	65
Acrylamide - Solution (30 %) - Mix 19 : 1 Molecular biology grade	55	Acrylamide 2K - Diacryloyl-piperazine - Solution (40 %) - Mix 39 : 1	58	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (12.5 %)	63	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (10 %)	65
Acrylamide 4K - Solution (40 %) - Mix 19 : 1	55	Acrylamide 4K - Sequamix 8	59	Acrylamide 4K - Ready-to-use solution for SDS-PAGE (15 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (4 %)	65
Acrylamide 4K - Solution (30 %) - Mix 19 : 1	55	Acrylamide 4K - Sequamix 6	59	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (7.5 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (5 %)	65
Acrylamide 2K - Solution (40 %) - Mix 19 : 1	55	Acrylamide 4K - Sequamix 4	59	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (10 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (6 %)	65
Acrylamide 2K - Solution (30 %) - Mix 19 : 1	56	Acrylamide 4K - Sequencing solution (40 %) 19 : 1	59	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (12.5 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (8 %)	65
Acrylamide - Solution (40 %) - Mix 29 : 1 Molecular biology grade	56	Acrylamide 4K - Sequencing solution (25 %) 19 : 1	59	Acrylamide 4K - Ready-to-use solution for SDS-PAGE (15 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (10 %)	65
Acrylamide - Solution (30 %) - Mix 29 : 1 Molecular biology grade	56	Acrylamide 2K - Sequencing solution (40 %) 19 : 1	59	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (4 %)	65
Acrylamide 4K - Solution (40 %) - Mix 29 : 1	56	Acrylamide 2K - Sequencing solution (25 %) 19 : 1	59	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (5 %)	65
Acrylamide 4K - Solution (30 %) - Mix 29 : 1	56	Acrylamide - Solution 1 for DGGE	60	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	63	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (6 %)	65
Acrylamide 2K - Solution (40 %) - Mix 29 : 1	56	Acrylamide - Solution 2 for DGGE	60	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (8 %)	64	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (8 %)	65
Acrylamide 2K - Solution (30 %) - Mix 29 : 1	56	Acrylamide - Sequencing buffer	60	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (10 %)	65
Acrylamide 4K - Solution (40 %) - Mix 32 : 1	57	Acrylamide - Diluent for sequencing gels	60	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64		
Acrylamide 4K - Solution (30 %) - Mix 32 : 1	57	Acrylamide 4K - Sequencing kit (25 %)	60				
Acrylamide 2K - Solution (40 %) - Mix 32 : 1	57	Acrylamide 2K - Sequencing kit (25 %)	61				
Acrylamide 2K - Solution (30 %) - Mix 32 : 1	57	Acrylamide - Stacking gel buffer for protein gels (8X)	61				
		Acrylamide - Resolving gel buffer for protein gels (4X)	61				

Agaroses for gel electrophoresis

Description	Page	Description	Page	Description	Page	Description	Page
Agarose Basic	71	Agarose high EEO	71	Agarose Low Melt 3	72	Agarose IMG	72
Agarose low EEO (Agarose Standard)	71	Agarose special EEO	72	Agarose Low Melt 4	72	Agarose SMG	73
Agarose medium EEO	71	Agarose Low Melt S	72	Agarose Low Melt Large DNA grade	72	Agarose MP	73

Albumins

Description	Page	Description	Page	Description	Page	Description	Page
Albumin acetylated	75	Albumin Fraction V (pH 5.2)	76	Albumin - H2	77	Albumin crystallized	77
Albumin EIA and RIA grade	75	Albumin Fraction V very low endotoxin	76	Albumin from chicken egg	77	Albumin Microbiology grade	78
Albumin Fraction V (pH 7.0)	76	Albumin - H1	77	Albumin crude from chicken egg	77	Albumin Fraction V - Solution (10 %), sterile	78
Albumin Fraction V (pH 7.0) Blotting grade	76			Albumin, human	77		

Amino acids

Description	Page	Description	Page	Description	Page	Description	Page
β-Alanine Cell culture grade	74	L-Cysteine hydrochloride monohydrate <i>BioChemica</i>	255	L-Histidine hydrochloride monohydrate Cell culture grade	409	L-Ornithine hydrochloride <i>BioChemica</i>	586
β-Alanine <i>BioChemica</i>	74	L-Cysteine hydrochloride monohydrate pure Ph. Eur., USP	255	L-Histidine hydrochloride monohydrate <i>BioChemica</i>	409	L-Ornithine hydrochloride pure DAB	586
L-Alanine Cell culture grade	74	L-Cystine Cell culture grade	255	L-Histidine hydrochloride monohydrate pure Ph. Eur.	409	L-Phenylalanine Cell culture grade	620
L-Alanine <i>BioChemica</i>	74	L-Cystine <i>BioChemica</i>	255	L-Hydroxyproline Cell culture grade	427	L-Phenylalanine <i>BioChemica</i>	620
L-Alanine pure Ph. Eur., USP	74	L-Cystine pure Ph. Eur.	255	L-Hydroxyproline <i>BioChemica</i>	427	L-Phenylalanine pure Ph. Eur., USP	620
L-Alanyl-L-glutamine Cell culture grade	75	L-Cystine dihydrochloride pure	256	L-Hydroxyproline pure	427	L-Proline Cell culture grade	663
L-Arginine base Cell culture grade	117	L-Glutamic acid Cell culture grade	380	L-Isoleucine Cell culture grade	464	L-Proline <i>BioChemica</i>	664
L-Arginine base <i>BioChemica</i>	117	L-Glutamic acid <i>BioChemica</i>	380	L-Isoleucine <i>BioChemica</i>	464	L-Proline pure Ph. Eur., USP	664
L-Arginine base pure Ph. Eur., USP	117	L-Glutamic acid pure Ph. Eur.	380	L-Isoleucine pure Ph. Eur.	464	L-Serine Cell culture grade	710
L-Arginine hydrochloride Cell culture grade	118	L-Glutamic acid monopotassium salt monohydrate <i>BioChemica</i>	381	L-Leucine Cell culture grade	486	L-Serine <i>BioChemica</i>	710
L-Arginine hydrochloride <i>BioChemica</i>	118	L-Glutamic acid monopotassium salt monohydrate p. A.	381	L-Leucine <i>BioChemica</i>	486	L-Serine pure Ph. Eur., USP	710
L-Arginine hydrochloride pure Ph. Eur., USP	118	L-Glutamic acid sodium salt monohydrate pure	381	L-Leucine pure Ph. Eur., USP	486	L-Threonine Cell culture grade	814
L-Asparagine monohydrate Cell culture grade	121	L-Glutamine Cell culture grade	381	L-Lysine monohydrate Cell culture grade	499	L-Threonine <i>BioChemica</i>	814
L-Asparagine monohydrate <i>BioChemica</i>	121	L-Glutamine <i>BioChemica</i>	381	L-Lysine monohydrate <i>BioChemica</i>	499	L-Threonine pure Ph. Eur., USP	814
L-Asparagine monohydrate pure Ph. Eur.	121	L-Glutamine pure DAB, USP	382	L-Lysine monohydrate pure DAB	499	L-Tryptophan Cell culture grade	844
L-Aspartic acid Cell culture grade	121	Glycine Molecular biology grade	386	L-Lysine monohydrochloride Cell culture grade	499	L-Tryptophan <i>BioChemica</i>	844
L-Aspartic acid <i>BioChemica</i>	121	Glycine Cell culture grade	387	L-Lysine monohydrochloride <i>BioChemica</i>	499	L-Tryptophan pure Ph. Eur., USP	845
L-Aspartic acid pure Ph. Eur., USP	121	Glycine p. A.	387	L-Lysine monohydrochloride pure Ph. Eur., USP	499	L-Tyrosine Cell culture grade	848
L-Aspartic acid magnesium salt pure Ph. Eur.	122	Glycine pure Ph. Eur., USP	387	L-Lysine acetate salt pure USP	500	L-Tyrosine <i>BioChemica</i>	848
L-Cysteine Cell culture grade	254	Glycine for synthesis	387	L-Methionine Cell culture grade	535	L-Tyrosine pure Ph. Eur., USP	848
L-Cysteine <i>BioChemica</i>	254	L-Histidine base Cell culture grade	409	L-Methionine <i>BioChemica</i>	535	L-Tyrosine disodium salt <i>BioChemica</i>	848
L-Cysteine pure DAB	254	L-Histidine base <i>BioChemica</i>	409	L-Methionine pure Ph. Eur., USP	536	L-Valine Cell culture grade	852
L-Cysteine hydrochloride monohydrate Cell culture grade	255	L-Histidine base pure Ph. Eur., USP	409	L-Ornithine hydrochloride Cell culture grade	586	L-Valine <i>BioChemica</i>	852
						L-Valine pure Ph. Eur., USP	853

Antibiotics and Antimycotics

Description	Page	Description	Page	Description	Page	Description	Page
A23187	37	Blasticidin S hydrochloride <i>BioChemica</i>	148	Citrinin <i>BioChemica</i>	215	Geldanamycin <i>BioChemica</i>	371
A23187 calcium magnesium salt <i>BioChemica</i>	37	Bleomycin sulfate <i>BioChemica</i>	149	Clindamycin hydrochloride <i>BioChemica</i>	218	Genistein <i>BioChemica</i>	372
3-Acetyldeoxynivalenol	49	Brefeldin A <i>BioChemica</i>	156	Colistin sulfate <i>BioChemica</i>	221	Gentamycin sulfate <i>BioChemica</i>	372
Acriflavine hydrochloride <i>BioChemica</i>	51	4-Bromo-A23187 <i>BioChemica</i>	159	Cycloheximide <i>BioChemica</i>	252	Gentamycin sulfate pure Ph. Eur.	372
Actinomycin D <i>BioChemica</i>	66	Canavanine sulfate <i>BioChemica</i>	184	Cyclopiazonic acid <i>BioChemica</i>	253	Gliotoxin <i>BioChemica</i>	375
Alamethicin <i>BioChemica</i>	73	Carbenicillin disodium salt <i>BioChemica</i>	185	D-Cycloserine <i>BioChemica</i>	253	Gramicidin	390
17-(Allylamino)-17-demethoxygeldanamycin <i>BioChemica</i>	81	Cefotaxime sodium salt <i>BioChemica</i>	190	D-Cycloserine pure USP	253	N-Hydroxyurea	429
7-Aminoactinomycin D <i>BioChemica</i>	85	Cerulenin <i>BioChemica</i>	192	Cytochalasin A <i>BioChemica</i>	257	Hygromycin B	429
Amoxicillin trihydrate <i>BioChemica</i>	105	Chloramphenicol Molecular biology grade	201	Cytochalasin B <i>BioChemica</i>	257	Hygromycin B - Solution	430
Amphotericin B <i>BioChemica</i>	107	Chloramphenicol <i>BioChemica</i>	202	Cytochalasin C <i>BioChemica</i>	257	Ionomycin free acid <i>BioChemica</i>	457
Amphotericin B pure Ph. Eur.	107	Chloramphenicol pure Ph. Eur.	202	Cytochalasin D <i>BioChemica</i>	258	Ionomycin calcium salt <i>BioChemica</i>	457
Ampicillin sodium salt <i>BioChemica</i>	108	Chlorhexidine diacetate pure Ph. Eur.	202	Cytochalasin E <i>BioChemica</i>	258	K252a <i>BioChemica</i>	467
Ampicillin sodium salt pure Ph. Eur.	108	Chlorhexidine diacetate monohydrate <i>BioChemica</i>	203	Deoxynojirimycin hydrochloride <i>BioChemica</i>	266	K252b <i>BioChemica</i>	468
Ampicillin trihydrate Molecular biology grade	108	Chlorotetracycline hydrochloride <i>BioChemica</i>	207	Diacetoxyscirpenol <i>BioChemica</i>	272	Kanamycin sulfate <i>BioChemica</i>	469
Anisomycin <i>BioChemica</i>	110	Chromomycin A3 <i>BioChemica</i>	211	17-Dimethylaminoethylamino-17-demethoxygeldanamycin <i>BioChemica</i>	283	Kanamycin sulfate pure Ph. Eur., BP	469
(+)-Aphidicolin <i>BioChemica</i>	112	Chymostatin	211	Doxorubicin hydrochloride <i>BioChemica</i>	308	KT5823 <i>BioChemica</i>	474
Apicidin <i>BioChemica</i>	112	Ciprofloxacin <i>BioChemica</i>	212	Doxycycline hyclate <i>BioChemica</i>	308	Leptomycin B <i>BioChemica</i>	486
Apramycin sulfate <i>BioChemica</i>	116	Ciprofloxacin hydrochloride <i>BioChemica</i>	212	Erythromycin base <i>BioChemica</i>	331	Lincomycin hydrochloride <i>BioChemica</i>	489
Ascomycin <i>BioChemica</i>	119	Ciprofloxacin hydrochloride pure Ph. Eur.	213	FK506 <i>BioChemica</i>	351	Mithramycin A	547
Bacitracin <i>BioChemica</i>	125	Citroviridin <i>BioChemica</i>	213	Fumagillin <i>BioChemica</i>	365	Mitomycin C	547
Bafilomycin A1 <i>BioChemica</i>	125			G418 disulfate <i>BioChemica</i>	366	Moniliformin sodium salt <i>BioChemica</i>	549
				G418 disulfate - Solution, sterile	367	Mupirocin pure USP	553
						Mycro-1 & 2 Set	553

Antibiotics and Antimycotics

Description	Page	Description	Page	Description	Page	Description	Page
Myco-1	554	Ochratoxin A <i>BioChemica</i>	580	Penitrem A <i>BioChemica</i>	602	Tentoxin <i>BioChemica</i>	801
Myco-2	554	Oligomycin <i>BioChemica</i>	585	PKC412 <i>BioChemica</i>	629	Tetracycline hydrochloride	805
Myco-3	554	Oligomycin A <i>BioChemica</i>	585	Polymyxin B sulfate <i>BioChemica</i>	633	Thiolutin <i>BioChemica</i>	813
Myco-4	554	Oligomycin B <i>BioChemica</i>	585	Puromycin dihydrochloride <i>BioChemica</i>	676	Thiostrepton <i>BioChemica</i>	813
Myriocin <i>BioChemica</i>	556	Oxytetracycline hydrochloride	589	Radicalol <i>BioChemica</i>	681	Triacin C <i>BioChemica</i>	828
Nalidixic acid <i>BioChemica</i>	558	Paromomycin sulfate <i>BioChemica</i>	592	Rapamycin <i>BioChemica</i>	683	Trichostatin A <i>BioChemica</i>	830
Nalidixic acid sodium salt <i>BioChemica</i>	558	Patulin <i>BioChemica</i>	593	Resiniferatoxin <i>BioChemica</i>	684	Tunicamycin	846
Neomycin sulfate <i>BioChemica</i>	563	Paxilline <i>BioChemica</i>	593	Rifampicin	688	Valinomycin <i>BioChemica</i>	853
Neomycin sulfate pure Ph. Eur.	563	Penicillic acid <i>BioChemica</i>	601	Spectinomycin dihydrochloride pentahydrate <i>BioChemica</i>	759	Vancomycin hydrochloride <i>BioChemica</i>	853
Neosolanol <i>BioChemica</i>	563	Penicillin G potassium salt <i>BioChemica</i>	601	Staurosporine <i>BioChemica</i>	773	Vancomycin hydrochloride pure Ph. Eur.	853
Nigericin sodium salt <i>BioChemica</i>	567	Penicillin G potassium salt pure Ph. Eur.	601	Sterigmatocystin <i>BioChemica</i>	773	Verruculogen <i>BioChemica</i>	855
Nonactin <i>BioChemica</i>	576	Penicillin G sodium salt pure Ph. Eur.	601	Streptomycin sulfate <i>BioChemica</i>	774	Withaferin A <i>BioChemica</i>	866
Novobiocin sodium salt <i>BioChemica</i>	578	Penicillin - Streptomycin (100X) Cell culture grade	602	Streptomycin sulfate pure Ph. Eur.	774	Wortmannin <i>BioChemica</i>	867
Nystatin dihydrate <i>BioChemica</i>	580			Streptozotocin	774	Zearalenone <i>BioChemica</i>	874

Bases

Description	Page	Description	Page	Description	Page	Description	Page
Ammonia - Solution 32 % p. A.	90	Potassium hydroxide - Solution 35 % pure	649	Sodium hydroxide - Solution 45 % Technical grade	739	Sodium hydroxide - Solution 20 % pure	740
Ammonia - Solution 32 % Technical grade	91	Potassium hydroxide - Solution 30 % pure	649	Sodium hydroxide - Solution 40 % p. A.	739	Sodium hydroxide - Solution 15 % pure	740
Ammonia - Solution 25 % p. A.	91	Potassium hydroxide - Solution 25 % pure	649	Sodium hydroxide - Solution 40 % pure	739	Sodium hydroxide - Solution 10 % p. A.	741
Ammonia - Solution 25 % pure	91	Potassium hydroxide - Solution 20 % p. A.	649	Sodium hydroxide - Solution 32 % for nitrogen determination	739	Sodium hydroxide - Solution 10 % pure	741
Ammonia - Solution 25 % Technical grade	91	Potassium hydroxide - Solution 20 % pure	649	Sodium hydroxide - Solution 32 % p. A.	739	Sodium hydroxide - Solution 6.8 % pure	741
Ammonia - Solution 20 % p. A.	91	Potassium hydroxide - Solution 10 % pure	649	Sodium hydroxide - Solution 32 % pure	739	Sodium hydroxide - Solution 5 % pure	741
Ammonia - Solution 10 % p. A.	92	Sodium hydroxide - Solution 50 % p. A.	738	Sodium hydroxide - Solution 32 % Technical grade	740	Sodium hydroxide - Solution 4 % Technical grade	741
Ammonia - Solution 10 % pure DAB	92	Sodium hydroxide - Solution 50 % pure	738	Sodium hydroxide - Solution 32 % for regeneration of desalination equipment	740	Sodium hydroxide - Solution 3 % pure	741
Ammonia - Solution 10 % pure	92	Sodium hydroxide - Solution 50 % Technical grade	738	Sodium hydroxide - Solution 30 % pure	740	Sodium hydroxide - Solution 1 % pure	741
Ammonia - Solution 3.5 % p. A.	92	Sodium hydroxide - Solution 50 % for regeneration of desalination equipment	738	Sodium hydroxide - Solution 25 % p. A.	740	Sodium hypochlorite - Solution 13 % Technical grade	745
Potassium hydroxide - Solution 50 % pure	648	Sodium hydroxide - Solution 45 % p. A.	738	Sodium hydroxide - Solution 25 % pure	740	Sodium hypochlorite - Solution 4 % Technical grade	745
Potassium hydroxide - Solution 45 % pure	648	Sodium hydroxide - Solution 45 % for regeneration of desalination equipment	739	Sodium hydroxide - Solution 20 % p. A.	740		
Potassium hydroxide - Solution 40 % p. A.	649						
Potassium hydroxide - Solution 40 % pure	649						

Biological buffers

Description	Page	Description	Page	Description	Page	Description	Page
ACES Buffer grade	38	Bis-Tris-propane Molecular biology grade	148	DIPSO Buffer grade	290	HEPES hemisodium salt Buffer grade	402
ADA Buffer grade	67	Bis-Tris-propane Buffer grade	148	Ethanolamine <i>BioChemica</i>	337	HEPES sodium salt Molecular biology grade	402
2-Amino-2-methyl-1,3-propanediol Buffer grade	88	Boric acid Molecular biology grade	154	Formic acid 98 - 100 % <i>BioChemica</i>	359	HEPES sodium salt Buffer grade	402
2-Amino-2-methyl-1-propanol Buffer grade	89	Boric acid <i>BioChemica</i>	154	Glycine Molecular biology grade	386	HEPPS Buffer grade	402
Ammonia - Solution 25 % <i>BioChemica</i>	91	Boric acid Buffer grade	154	Glycine Cell culture grade	387	HEPPSO Buffer grade	403
AMPSO Buffer grade	108	Cacodylic acid <i>BioChemica</i>	175	Glycine <i>BioChemica</i>	387	Imidazole Molecular biology grade	445
BES Molecular biology grade	136	Cacodylic acid sodium salt trihydrate <i>BioChemica</i>	175	Glycylglycine Cell culture grade	388	Imidazole ultrapure	445
BES Buffer grade	136	CAPS Molecular biology grade	184	Glycylglycine Buffer grade	388	Imidazole Buffer grade	445
Bicine Molecular biology grade	138	CAPS Buffer grade	185	Glycylglycine hydrochloride Buffer grade	388	Maleic acid pure Ph. Eur.	509
Bicine Buffer grade	138	CAPS sodium salt Buffer grade	185	HEPES Molecular biology grade	401	Maleic acid disodium salt pure	509
Bis-Tris Molecular biology grade	147	CAPS Buffer grade	185	HEPES Cell culture grade	401	DL-Malic acid <i>BioChemica</i>	509
Bis-Tris Buffer grade	148	CHES Buffer grade	199	HEPES Buffer grade	401	DL-Malic acid pure Ph. Eur., NF, E 296	509

Biological buffers

Description	Page	Description	Page	Description	Page	Description	Page
L(-)-Malic acid <i>BioChemica</i>	510	PIPES disodium salt Buffer grade	628	Sodium hydrogen carbonate Cell culture grade	734	Tricine Molecular biology grade	831
L-Malic acid disodium salt monohydrate <i>BioChemica</i>	510	PIPES sodium salt Buffer grade	628	Sodium hydrogen carbonate <i>BioChemica</i>	734	Tricine Cell culture grade	831
L(-)-Malic acid monosodium salt <i>BioChemica</i>	510	PIPES 1.5sodium salt Buffer grade	629	<i>di</i> -Sodium hydrogen phosphate anhydrous Molecular biology grade	735	Tricine <i>BioChemica</i>	831
MES anhydrous Molecular biology grade	531	POPSO dihydrate Buffer grade	635	<i>di</i> -Sodium hydrogen phosphate anhydrous <i>BioChemica</i>	735	Triethanolamine <i>BioChemica</i>	831
MES anhydrous <i>BioChemica</i>	531	Potassium dihydrogen phosphate - Solution (0.1 M) Buffer grade	643	<i>di</i> -Sodium hydrogen phosphate dihydrate Molecular biology grade	735	Triethanolamine hydrochloride <i>BioChemica</i>	832
MES hemisodium salt Buffer grade	531	Pyridine p. A.	677	<i>di</i> -Sodium hydrogen phosphate dihydrate <i>BioChemica</i>	736	Tris Molecular biology grade	835
MES monohydrate Molecular Biology grade	531	Sodium acetate trihydrate <i>BioChemica</i>	721	<i>di</i> -Sodium hydrogen phosphate dodecahydrate <i>BioChemica</i>	736	Tris ultrapure	835
MES monohydrate Buffer grade	531	Sodium carbonate anhydrous <i>BioChemica</i>	724	Succinic acid crystalline <i>BioChemica</i>	775	Tris pure Ph. Eur., USP	835
MES potassium salt Molecular biology grade	532	Sodium carbonate anhydrous p. A.	724	Succinic acid disodium salt anhydrous <i>BioChemica</i>	775	Tris Buffer grade	835
MES sodium salt Molecular biology grade	532	<i>tri</i> -Sodium citrate dihydrate Molecular biology grade	728	TAPS Molecular biology grade	792	Tris hydrochloride Molecular biology grade	837
MES sodium salt Buffer grade	532	<i>tri</i> -Sodium citrate dihydrate <i>BioChemica</i>	728	TAPS Buffer grade	792	Tris hydrochloride Buffer grade	837
MOPS Molecular biology grade	549	<i>tri</i> -Sodium citrate dihydrate Buffer grade	729	TAPSO Buffer grade	793	Tris : Tris - HCl - Mixture (pH 8.8)	837
MOPS Buffer grade	549	Sodium dihydrogen phosphate dihydrate Molecular biology grade	730	Taurine Cell culture grade	796	Tris acetate Buffer grade	838
MOPS hemisodium salt Buffer grade	549	Sodium dihydrogen phosphate dihydrate <i>BioChemica</i>	730	Taurine <i>BioChemica</i>	796	Tris dihydrogen phosphate Buffer grade	838
MOPS sodium salt Buffer grade	550	Sodium dihydrogen phosphate monohydrate Molecular biology grade	731	TES	802	Tris maleate Buffer grade	839
MOPSO Buffer grade	550	Sodium dihydrogen phosphate monohydrate <i>BioChemica</i>	731	TES sodium salt Buffer grade	802	Tris succinate Buffer grade	839
PIPES Molecular biology grade	628						
PIPES Buffer grade	628						

Biotinylating Reagents

Description	Page	Description	Page	Description	Page	Description	Page
N-[2-[2-(2-Aminoethoxy)ethoxy]ethyl] biotinamide	87	6-(Biotinamidohexanoylamido)-hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt	141	(+)-Biotin-3-sulfo-N-hydroxysuccinimide ester sodium salt <i>BioChemica</i>	142	6-(Biotinylamino)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt	143
N-(5-Aminopentyl)biotinamide trifluoroacetate salt	89	Biotinamidohexanoyl-6-amino-hexanoic acid N-hydroxysuccinimide ester	141	9-Biotinylamino-4,7,10,13-tetraoxapentadecanoic acid N-hydroxysuccinimide ester	142	15-Biotinylamino-4,7,10,13-tetraoxapentadecanoic acid N-hydroxysuccinimide ester	143
N-(3-[2-[2-(3-Aminopropoxy)ethoxy]ethoxy]propyl)biotinamide hydrochloride	90	(+)-Biotin hydrazide	141	3-[[2-(Biotinylamino)ethyl]dithio]propanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt	143	12-Biotinylamino-4,7,10-trioxadodecanoic acid N-hydroxysuccinimide ester	143
(+)-Biotinamidohexanoic acid hydrazide	140	(+)-Biotin N-hydroxysuccinimide ester <i>BioChemica</i>	142				
Biotinamidohexanoic acid N-hydroxysuccinimide ester	141	Biotin pentafluorophenyl ester	142				

Blocking Reagents

Description	Page	Description	Page	Description	Page	Description	Page
Albumin acetylated	75	Denhardt's - Solution (50X) <i>BioChemica</i>	263	Heparin sodium salt	401	Polyvinylpyrrolidone (K90) Molecular biology grade	634
Albumin Fraction V (pH 7.0) Blocking grade	76	Dextran sulfate 500 sodium salt Molecular biology grade	270	Blocking Buffer I	447	Salmon sperm DNA sodium salt (sonified)	701
Blocking Reagent CA	149	Dextran sulfate 500 sodium salt <i>BioChemica</i>	270	Blocking Buffer II <i>EGrade</i>	447	Salmon sperm DNA sodium salt	701
Denhardt's powder mixture (for 50X stock solution)	262	Gelatin powdered, pure Ph. Eur., NF	370	Blocking Buffer III BSA	448		
				Nonfat dried milk powder	577		

Buffer solutions

Description	Page	Description	Page	Description	Page	Description	Page
Buffer solution pH 1.00	164	Buffer solution pH 8.00	165	Buffer set II (color-coded)	166	Buffer solution pH 4.006	167
Buffer solution pH 2.00	164	Buffer solution pH 9.00	165	Buffer solution pH 4.00 (red)	166	Buffer solution pH 6.865	167
Buffer solution pH 3.00	164	Buffer solution pH 10.00	165	Buffer solution pH 7.00 (green)	166	Buffer solution pH 7.413	167
Buffer solution pH 4.00	164	Buffer solution pH 11.00	165	Buffer solution pH 9.00 (blue)	166	Buffer solution pH 9.180	167
Buffer solution pH 5.00	164	Buffer solution pH 12.00	165	Buffer solution pH 10.00 (blue)	167	Buffer solution pH 10.012	167
Buffer solution pH 6.00	165	Buffer solution pH 13.00	166	Buffer solution pH 1.679	167	Buffer solution pH 12.454	168
Buffer solution pH 7.00	165	Buffer set I	166	Buffer solution pH 3.776	167	Buffer solution pH 1.09	168

Buffer solutions

Description	Page	Description	Page	Description	Page	Description	Page
Buffer solution pH 3.06	168	Buffer solution pH 12.75	168	Buffer solution pH 8.90	169	Cesium chloride - Aluminium ni-	193
Buffer solution pH 4.65	168	Buffer solution pH 3.55	169	Buffer solution pH 9.22	169	trate - Buffer solution for flame	
Buffer solution pH 6.79	168	Buffer solution pH 4.66	169	Buffer solution pH 10.00	169	spectroscopy	
Buffer solution pH 9.23	168	Buffer solution pH 6.88	169				

Cell culture grade reagents

Description	Page	Description	Page	Description	Page	Description	Page
AppliFect	114	Cell Proliferation Kit XTT	190	rHu Insulin	453	holo-Transferrin, bovine	828
AppliFect Insect	115	Fibronectin - Solution Cell culture	350	Penicillin - Streptomycin (100X)	602	AC-Trypsin - Solution Cell culture	842
AppliFect LowTox	115	Freez Media - DMSO	363	Cell culture grade		grade	
AppliFect SI	115			apo-Transferrin, bovine	828	AC-Trypsin Inhibitor from Soybean	843
						(50X) Cell culture grade	

Cell culture media, serum-free

Description	Page	Description	Page	Description	Page	Description	Page
AC-Cell Xeno-free Medium Immu-	190	AC-GROW hi (50X)	391	AC-Media hi	522	AC-MultiCell	553
nology grade		AC-GROW lo (50X)	391	AC-Media mid	522		
AC-CHO adh SFM Base	207	AC-INSECT	453	AC-Media lo	522		
AC-CHO sus SFM Base	208						

Cell culture powder media

Description	Page	Description	Page	Description	Page	Description	Page
BME, Basal medium with Earle's	150	DMEM (Dulbecco's mod. Eagle -	292	Grace's - Insect medium	390	Leibovitz's L15 - Medium	484
salts		Medium)		Grace's - Insect medium	390	Leibovitz's L15 - Medium	484
BME, Basal medium with Earle's	150	DMEM (Dulbecco's mod. Eagle -	292	Ham's F10 - Medium	395	Leibovitz's L15 - Medium	484
salts		Medium)		Ham's F10 - Medium	396	Linsmaier, Bednar & Skoog Plant	490
10X BME, Basal medium with	150	DMEM (Dulbecco's mod. Eagle -	292	Ham's F10 - Medium	396	salts	
Earle's salts		Medium)		Ham's F10 - Medium	396	McCoy's 5A - Medium (modified)	520
10X BME, Basal medium with	150	DMEM (Dulbecco's mod. Eagle -	292	Ham's F10 - Medium	396	McCoy's 5A - Medium (modified)	520
Earle's salts		Medium)		Ham's F10 - Medium	396	McCoy's 5A - Medium (modified)	520
BME, Basal medium with Earle's	150	DMEM (Dulbecco's mod. Eagle -	292	Ham's F10 - Medium	396	McCoy's 5A - Medium (modified)	520
salts (diploide)		Medium)		Ham's F12 - Medium	396	Medium 199 with Earle's Salts	523
BME, Basal medium with Earle's	150	DMEM (Dulbecco's mod. Eagle -	292	Ham's F12 - Medium	396	Medium 199 with Earle's Salts	523
salts (diploide)		Medium)		Ham's F12 - Medium	396	Medium 199 with Earle's Salts	523
BME, Basal medium with Earle's	150	DMEM (Dulbecco's mod. Eagle -	292	Ham's F12 - Medium	396	Medium 199 with Earle's Salts	523
salts, autoclavable		Medium)		Ham's F12 - Medium	396	Medium 199 with Earle's Salts	523
BME, Basal medium with Earle's	151	DMEM (Dulbecco's mod. Eagle -	293	Ham's F12 - Medium	396	Medium 199 with Earle's Salts	523
salts		Medium)		Ham's F12K - Medium	397	Medium 199 with Earle's Salts	523
BME, Basal medium with Earle's	151	DMEM (Dulbecco's mod. Eagle -	293	Ham's F12K - Medium	397	Medium 199 with Earle's Salts	523
salts		Medium)		Hanks' balanced salts (HBSS)	397	Medium 199 with Earle's Salts	523
BME, Basal medium with Hanks'	151	DMEM (Dulbecco's mod. Eagle -	293	Hanks' balanced salts (HBSS)	397	Medium 199 with Earle's Salts	523
salts		Medium)		Hanks' balanced salts (HBSS)	397	Medium 199 with Earle's Salts	523
BME, Basal medium with Hanks'	151	DMEM (Dulbecco's mod. Eagle -	293	Hanks' balanced salts (HBSS)	397	Medium 199 with Earle's Salts	523
salts		Medium)		Hanks' balanced salts (HBSS)	398	Medium 199 with Earle's Salts	523
10X BME, Basal medium with	151	DMEM/F12 (1:1) - Medium	293	HEPES - balanced salts	402	α-MEM	525
Hanks' salts		DMEM/F12 (1:1) - Medium	293	IPL 41 - Medium	458	α-MEM	525
10X BME, Basal medium with	151	DMEM/F12 (1:1) - Medium	293	IPL 41 - Medium	458	α-MEM	525
Hanks' salts		DMEM/F12 (1:1) - Medium	294	Iscove's mod. Dulbecco's - Med-	462	α-MEM	525
BME, Basal medium with Hanks'	151	DMEM/F12 (1:1) - Medium	294	ium (IMDM)		α-MEM	525
salts, autoclavable		Earle's balanced salts (EBSS)	311	Iscove's mod. Dulbecco's - Med-	462	α-MEM	525
BME, Basal medium with Hanks'	151	Earle's balanced salts (EBSS)	311	ium (IMDM)		α-MEM	525
salts		Earle's balanced salts (EBSS)	311	Iscove's mod. Dulbecco's - Med-	462	α-MEM	525
BME, Basal medium with Hanks'	151	Earle's balanced salts (EBSS)	311	ium (IMDM)		α-MEM	525
salts		Gamborg's B5 Plant salts	368	Joklik - MEM, modified for spinner	467	MEM with Earle's salts	526
DMEM (Dulbecco's mod. Eagle -	291	Glasgow - MEM (BHK 21)	374	culture		MEM with Earle's salts, autocla-	526
Medium)		Glasgow - MEM (BHK 21)	374	Joklik - MEM, modified for spinner	467	vable	
DMEM (Dulbecco's mod. Eagle -	291	Glasgow - MEM (BHK 21)	374	culture		MEM with Earle's salts	526
Medium)		Glasgow - MEM (BHK 21)	374	Leibovitz's L15 - Medium	484	MEM with Earle's salts	526
DMEM (Dulbecco's mod. Eagle -	292					MEM with Earle's salts	526
Medium)							
DMEM (Dulbecco's mod. Eagle -	292						
Medium)							
DMEM (Dulbecco's mod. Eagle -	292						
Medium)							

Cell culture powder media

Description	Page	Description	Page	Description	Page	Description	Page
MEM with Earle's salts	526	S-MEM, modified for spinner culture	528	RPMI 1640 - Medium	693	TNM-FH - Insect medium (modified Grace's Insect medium)	820
MEM with Earle's salts	526	S-MEM, modified for spinner culture, autoclavable	528	RPMI 1640 - Medium	693	Waymouth's MB 752/1 - Medium	865
MEM with Earle's salts	526	NCTC 135 - Medium	562	RPMI 1640 - Medium	693	Waymouth's MB 752/1 - Medium	865
MEM with Hanks' salts	527	NCTC 135 - Medium	563	RPMI 1640 - Medium	693	Waymouth's MB 752/1 - Medium	865
MEM with Hanks' salts	527	PBS buffer (10X Dulbecco's) - Powder	593	RPMI 1640 - Medium	693	Waymouth's MB 752/1 - Medium	865
MEM with Hanks' salts	527	PBS buffer (1X, Dulbecco's) - Powder	593	Schneider's Drosophila - Insect medium	704	William's Medium E	865
MEM with Hanks' salts	527	PBS buffer (1X Dulbecco's) - Powder	593	Schneider's Drosophila - Insect medium	704	William's Medium E	865
MEM with Hanks' salts	527	Click - RPMI - Medium	692	TC 100 - Insect medium	799	William's Medium E	866
MEM with Hanks' salts	527	Click - RPMI - Medium	692	TC 100 - Insect medium	799	William's Medium E	866
S-MEM, modified for spinner culture	528			TNM-FH - Insect medium (modified Grace's Insect medium)	820	William's Medium E	866

Chemiluminescence detection

Description	Page	Description	Page	Description	Page	Description	Page
Cheluminat-HRP PicoDetect	197	Cheluminat-HRP PicoDetect Extended	198	Cheluminat-HRP FemtoDetect Plus	198	Luminol	497

Cross-Linkers

Description	Page	Description	Page	Description	Page	Description	Page
AEDP	69	BS ³	164	GMBS	389	Sulfo-EGS	779
BMB	150	Disuccinimidyl glutarate <i>BioChemica</i>	290	MBS	520	Sulfo-MBS	779
BMH	152	Disuccinimidyl tartrate <i>BioChemica</i>	290	SATA	702	Sulfo-SMCC	779
BMOE	152	DTSP <i>BioChemica</i>	309	SBA	703	TFCS	810
BM(PEO) ₃	152	DTSSP	310	SIA	711		
BM(PEO-PPG) ₂	152	EGS	318	SMCC	719		
BMPS	152			SPDP	759		

Cross-Linkers for PAGE

Description	Page	Description	Page	Description	Page	Description	Page
Bisacrylamide Molecular biology grade	143	Bisacrylamide - Solution (2 %) Molecular biology grade	144	Bisacrylamide 2K - Solution (2 %) N,N'-Bisacryloyl cystamine <i>BioChemica</i>	144	N,N'-Diallyltartardiamide <i>BioChemica</i>	272
Bisacrylamide 4K ultrapure	144	Bisacrylamide 4K - Solution (2 %) Molecular biology grade	144	1,4-Diacryloylpiperazine <i>BioChemica</i>	145	1,2-Dihydroxyethylene-bisacrylamide <i>BioChemica</i>	281
Bisacrylamide 2K Standard grade, extrapure	144	Bisacrylamide 4K - Solution (1 %) Molecular biology grade	144		272	Riboflavin <i>BioChemica</i>	687

Cytokines and Growth Factors, human

Description	Page	Description	Page	Description	Page	Description	Page
rHu Activin A	67	rHu EMAP-2 bioconfident grade	326	rHu GDF-5	369	rHu IL-2 bioconfident grade	435
rHu Angiogenin-1 bioconfident grade	110	rHu aFGF bioconfident grade	347	rHu GDNF bioconfident grade	370	rHu IL-2	435
rHu BAFF	125	rHu aFGF	347	rHu GDNF	370	rHu IL-3 bioconfident grade	435
rHu BDNF	130	rHu bFGF bioconfident grade	348	rHu GM-CSF	389	rHu IL-3	435
rHu BMP-2	153	rHu bFGF (147)	348	rHu HB-EGF bioconfident grade	398	rHu IL-4 bioconfident grade	436
rHu BMP-4	153	rHu bFGF (154)	348	rHu HGF	408	rHu IL-4	436
rHu CD40-L	189	rHu bFGF (155)	349	rHu IFN-α-2a bioconfident grade	432	rHu IL-5 bioconfident grade	437
rHu CNTF	218	rHu FGF (21)	349	rHu IFN-γ bioconfident grade	432	rHu IL-5	437
rHu CTGF	248	rHu FLT-3 L bioconfident grade	352	rHu IFN-γ	432	rHu IL-6 bioconfident grade	437
rHu DKK-1	291	rHu FLT-3 L	352	rHu IGF-1	433	rHu IL-6	437
rHu EGF	317	rHu Galectin-1	368	rHu IGF-2	434	rHu IL-7 bioconfident grade	438
rHu EG-VEGF	318	rHu G-CSF bioconfident grade	369	rHu IL-1a bioconfident grade	434	rHu IL-7	438
		rHu G-CSF	369	rHu IL-1b	434	rHu IL-9 bioconfident grade	439

Cytokines and Growth Factors, human

Description	Page	Description	Page	Description	Page	Description	Page
rHu IL-10	439	rHu IL-32 α	444	rHu MIP-3 α	546	rHu RANKL	682
rHu IL-11	439	rHu IL-33	444	rHu MIP-3 β	546	rHu RANTES	683
rHu IL-12	440	rHu Insulin	453	rHu MIP-4	546	rHu SCF bioconfident grade	703
rHu IL-13	440	rHu KGF bioconfident grade	471	rHu Myostatin	555	rHu SCF	703
rHu IL-15	440	rHu Leptin	485	rHu Myostatin-P	556	rHu SDF-1 α	704
rHu IL-16 bioconfident grade	440	rHu LIF bioconfident grade	488	rHu NGF- β	564	rHu SF20 bioconfident grade	710
rHu IL-16	441	rHu MCP-1	520	rHu NRG-1 bioconfident grade	578	rHu TGF- β 3	810
rHu IL-17A	441	rHu MCP-2	521	rHu NRG-1	578	rHu TNF- α bioconfident grade	819
rHu IL-17E	442	rHu MCP-3	521	rHu NT-3	578	rHu TNF- α	819
rHu IL-17F	442	rHu MCP-4	521	rHu OSM	587	rHu TNF- β bioconfident grade	820
rHu IL-19	442	rHu M-CSF bioconfident grade	521	rHu PDGF-AA	599	rHu VEGF-121 bioconfident grade	854
rHu IL-20 bioconfident grade	443	rHu M-CSF	522	rHu PDGF-AB	600	rHu VEGF (121)	854
rHu IL-20	443	rHu MIF	544	rHu PDGF-BB bioconfident grade	600	rHu VEGF-165 bioconfident grade	854
rHu IL-21	443	rHu MIP-1 α bioconfident grade	545	rHu PDGF-BB	600	rHu VEGF (165)	855
rHu IL-22 bioconfident grade	443	rHu MIP-1 α	545	rHu Prolactin bioconfident grade	663		
rHu IL-22	444	rHu MIP-1 β	545	rHu RANKL bioconfident grade	682		

Cytokines and Growth Factors, Mouse

Description	Page	Description	Page	Description	Page	Description	Page
rM CD40-L	190	rM IL-1b	434	rM IP-10	458	rM RANTES	683
rM EGF	318	rM IL-2	435	rM Leptin	485	rM SCF bioconfident grade	703
rM aFGF	348	rM IL-3	436	rM LIF bioconfident grade	489	rM SCF	704
rM bFGF	349	rM IL-4	436	rM MCP-3	521	rM SDF-1 α	705
rM FGF-9	349	rM IL-6	438	rM M-CSF	522	rM SHH	711
rM FLT-3 L	352	rM IL-7	438	rM MIP-1 α	545	rM TNF- α	820
rM G-CSF	369	rM IL-9	439	rM MIP-1 β	545	rM TPO	824
rM GM-CSF bioconfident grade	389	rM IL-10	439	rM MIP-3 α	546	rM VEGF-164 bioconfident grade	854
rM GM-CSF	389	rM IL-15	440	rM NGF- β	564		
rM IFN- γ	433	rM IL-16	441	rM PDGF-AA	600		
rM IGF-1	433	rM IL-27 (p28)	444	rM RANKL	683		

Cytokines and Growth Factors, Rat

Description	Page	Description	Page	Description	Page	Description	Page
rR IFN- γ	433	rR IL-17A	441	rR Leptin	486		
rR IGF-1	434	rR IL-17E	442	rR TNF- α	820		

Decontamination reagents

Description	Page	Description	Page	Description	Page	Description	Page
AppliClear-Water	114	deconex® 21 CLF	216	deconex® 25 ORGANACID	217	Incuwater-Clean™	451
AppliSorb - Chemicals absorber	115	deconex® 21 SOLID	216	deconex® 26 MINERALACID	217	maxXbond™	517
Aquabator-Clean™	117	deconex® 22 LIQ	216	Derma-ExitusPlus™	269	maxXbond™ AX	517
Autoclave-ExitusPlus™	123	deconex® 22 PF	217	DNA-ExitusPlus™	302	RNase-ExitusPlus™	691
deconex® 11 UNIVERSAL	216	deconex® 24 FORTE	217	DNA-ExitusPlus™ IF	303		
deconex® 15 PF	216	deconex® 24 LIQ	217	Incubator-Clean™	450		

Detergents (Tensids)

Description	Page	Description	Page	Description	Page	Description	Page
Benzethonium chloride <i>BioChemica</i>	133	Brij® 35 - Solution 10 % peroxide-free	157	Brij® 58 - Solution 10 % peroxide-free	158	Cetyltrimethylammonium bromide Molecular biology grade	194
Brij® 35 <i>BioChemica</i>	157	Brij® 58 <i>BioChemica</i>	157	Cetylpyridinium chloride monohydrate <i>BioChemica</i>	194	Cetyltrimethylammonium bromide <i>BioChemica</i>	194

Detergents (Tensids)

Description	Page	Description	Page	Description	Page	Description	Page
CHAPS Molecular biology grade	195	1-Hexanesulfonic acid sodium salt monohydrate IPC grade	408	<i>n</i> -Nonyl-β-D-maltoside <i>BioChem-ica</i>	578	SDS - Solution 10 % pure	706
CHAPS <i>BioChemica</i>	195	<i>n</i> -Hexyl-β-D-maltoside <i>BioChem-ica</i>	408	1-Octanesulfonic acid sodium salt IPC grade	581	Sodium cholate <i>BioChemica</i>	728
CHAPSO <i>BioChemica</i>	195	N-Lauroylsarcosine sodium salt Molecular biology grade	480	<i>n</i> -Octyl-β-D-glucopyranoside Crystallography grade	581	Sodium deoxycholate <i>BioChem-ica</i>	729
1-Decanesulfonic acid sodium salt IPC grade	260	N-Lauroylsarcosine sodium salt ultrapure	480	<i>n</i> -Octyl-β-D-glucopyranoside <i>Bio-Chemica</i>	581	Sucrose monolaurate <i>BioChemica</i>	776
<i>n</i> -Decyl-β-D-glucopyranoside <i>BioChemica</i>	261	N-Lauroylsarcosine sodium salt pure	480	<i>n</i> -Octyl-D-glucopyranoside	582	Sulfobetaine SB 12	778
<i>n</i> -Decyl-β-D-maltoside Crystallography grade	261	N-Lauroylsarcosinate - Solution 30 % ultrapure	480	<i>n</i> -Octyl-β-D-maltoside <i>BioChemica</i>	582	Sulfobetaine SB 14	778
<i>n</i> -Decyl-β-D-maltoside <i>BioChem-ica</i>	261	N-Lauroylsarcosinate - Solution 30 % pure	480	<i>n</i> -Octyl-β-D-thioglucopyranoside <i>BioChemica</i>	582	<i>n</i> -Tetradecyl-β-D-maltoside	805
Deoxy-BIGCHAP <i>BioChemica</i>	264	N-Lauroylsarcosinate - Solution 10 % ultrapure	481	rac.-1-Oleoyl-glycerol <i>BioChem-ica</i>	584	<i>n</i> -Tridecyl-β-D-maltoside Crystallography grade	831
Digitonin Reagent USP	280	N-Lauroylsarcosinate - Solution 10 % pure	481	1-Pentanesulfonic acid sodium salt monohydrate IPC grade	603	Triton® X-100 <i>BioChemica</i>	840
1-Dodecanesulfonic acid sodium salt IPC grade	305	Lithium dodecylsulfate <i>BioChem-ica</i>	493	Pluronic® F-68	629	Triton® X-100 - Solution 10 % peroxide-free	840
<i>n</i> -Dodecyl-β-D-glucopyranoside <i>BioChemica</i>	305	MEGA-8	524	All-trans-4-(4'-Propyl)bicyclohex-yl-α-maltoside <i>BioChemica</i>	670	Triton® X-114 <i>BioChemica</i>	841
<i>n</i> -Dodecyl-α-maltoside <i>BioChem-ica</i>	306	MEGA-9	524	Saponin from <i>Quillaja</i> Bark pure DAB	702	Triton® X-114 - Solution 10 % peroxide-free	841
<i>n</i> -Dodecyl-β-D-maltoside Crystallography grade	306	MEGA-10	524	SDS Molecular biology grade	705	Tween® 20 Molecular biology grade	846
<i>n</i> -Dodecyl-β-D-maltoside <i>Bio-Chemica</i>	306	1-Nonanesulfonic acid sodium salt IPC grade	576	SDS ultrapure	705	Tween® 20 <i>BioChemica</i>	847
<i>n</i> -Dodecyl-1-thio-β-D-maltoside <i>BioChemica</i>	306	Nonidet® P40 (Substitute) <i>Bio-Chemica</i>	577	SDS <i>BioChemica</i>	705	Tween® 20 pure Ph. Eur.	847
Dodecyltrimethylammonium bromide <i>BioChemica</i>	306	Nonidet® P40 (Substitute) - Solution 10 % peroxide-free	577	SDS pure	706	Tween® 20 - Solution 10 % peroxide-free	847
HECAMEG <i>BioChemica</i>	399	<i>n</i> -Nonyl-β-D-glucopyranoside <i>BioChemica</i>	577	SDS grained pure	706	Tween® 80 <i>BioChemica</i>	847
1-Heptanesulfonic acid sodium salt monohydrate IPC grade	404	<i>n</i> -Nonyl-β-D-maltoside Crystallography grade	577	SDS - Solution 20 % Molecular biology grade	706	Tween® 80 - Solution 10 % peroxide-free	847
<i>n</i> -Heptyl-β-D-glucopyranoside <i>BioChemica</i>	404			SDS - Solution 20 % pure	706	<i>n</i> -Undecyl-β-D-maltoside Crystallography grade	849
				SDS - Solution 10 % Molecular biology grade	706	<i>n</i> -Undecyl-β-D-maltoside <i>Bio-Chemica</i>	849

Deuterated substances

Description	Page	Description	Page	Description	Page	Description	Page
Acetic acid D ₄	43	Dichloromethane D ₂	277	Ethanol D ₆ absolute	337	Tetrahydrofuran D ₈	807
Acetone D ₆	45	Diethyl ether D ₁₀	280	Hydrochloric acid D ₁ (DCI, 20 % solution in D ₂ O)	416	Toluene D ₈	822
Acetonitrile D ₃	47	N,N-Dimethylformamide D ₇	285	Methanol D ₄	535	Water D ₂	859
Benzene D ₆	132	Dimethyl sulfoxide D ₆ Grade I	288	2-Propanol D ₈ (Isopropanol D ₈)	669		
Chloroform D ₁	205	Dimethyl sulfoxide D ₆ Grade II	288	Pyridine D ₅	677		
Cyclohexane D ₁₂	251	1,4-Dioxane D ₈	289				

Dye and Indicator Solutions

Description	Page	Description	Page	Description	Page	Description	Page
Alizarin red S - Solution	80	Chlorophenol red - Solution	206	Leishman's Stain - Solution	485	Neutral red - Solution	564
Alizarin yellow GG - Solution	80	Congo red - Solution	241	Loeffler's Methylene blue - Solution Microscopy grade	496	Phenolphthalein - Solution 2 %	617
Alkali blue 6B - Solution	80	M-Cresol purple - Solution	246	Lugol's - Solution (diluted) 0.33 % Iodine	497	Phenolphthalein - Solution 1 %	618
Brilliant green - Solution	158	Cresol red - Solution	247	Malachite green oxalate - Solution	508	Phenolphthalein - Solution 0.1 %	618
Bromochlorophenol blue - Solution	159	Crystal violet - Solution	248	May-Gruenwald - Solution Microscopy grade	519	Phenol red - Solution	619
Bromocresol green - Solution (in diluted Ethanol)	160	Dimethyl yellow - Solution	288	Mayer's Hemalaun - Solution Microscopy grade	519	Proteo-Dye RuBPS	675
Bromocresol green - Solution (aqueous solution)	160	Eosin B - Solution	328	Mayer's Hematoxylin - Solution	519	Quinaldine red - Solution	680
Bromocresol purple - Solution	160	Eosin Y - Solution	329	Methylene blue - Solution	538	Rakoff staining solution for microscopy	681
Bromophenol blue - Solution (in diluted Ethanol)	161	Erythrosin B - Solution	331	Methyl green - Solution	539	Rose Bengal - Solution	691
Bromophenol blue - Solution (aqueous solution)	161	Fehling's Reagent II	346	Methyl orange - Solution (in diluted Ethanol)	540	Thymol blue - Solution	815
Bromophenol red - Solution	163	Giemsa - Solution Microscopy grade	373	Methyl orange - Solution (in water)	540	Thymolphthalein - Solution	816
Bromothymol blue - Solution	163	Griess-Ilsoy's Nitrite Reagent	390	Methyl red - Solution	542	Titan yellow - Solution	818
Bromoxylene blue - Solution	163	Indigo carmine - Solution	451	Methyl violet - Solution	544	<i>para</i> -Xylene blue - Solution	872
		Lacmus - Solution	474				

Dyes and indicators

Description	Page	Description	Page	Description	Page	Description	Page
Acid blue 93 (C.I. 42780)	50	Coomassie® Brilliant blue G-250 (C.I. 42655)	242	Hematoxylin monohydrate (C.I. 75290) Microscopy grade	400	Pyrogallol red	678
Acridine orange (C.I. 46005)	51	Coomassie® Brilliant blue R-250 (C.I. 42660)	242	Indigo carmine (C.I. 73015)	451	Pyronin Y (C.I. 45005)	679
Alcian blue 8 GS (C.I. 74240)	78	<i>m</i> -Cresol purple	246	Lacmus pure (C.I. 1242)	474	Quinaldine red	680
Alizarin (C.I. 58000)	79	Cresol red Molecular biology grade	247	Leishman's Stain	485	Quinoline yellow	681
Alizarin red S (C.I. 58005)	79	Cresol red pure	247	Malachite green oxalate (C.I. 42000) Protein staining grade	508	Rhodamine B (C.I. 45170)	686
Alizarin yellow GG (C.I. 14025)	80	Crystal violet (C.I. 42555)	247	Malachite green oxalate (C.I. 42000)	508	Rhodamine 6G (C.I. 45160)	687
Alkali blue 6B	80	DAPI Molecular biology grade	259	May-Gruenwald - Eosin - Methylene blue	519	Rose Bengal (C.I. 45440)	691
Amido black 10 B (C.I. 20470)	84	DAPI <i>BioChemica</i>	259	Metanil yellow	532	Rosolic acid (C.I. 43800)	692
Azure B (C.I. 52010)	124	3,3'-Diaminobenzidine tetrahydrochloride <i>BioChemica</i>	273	Methylene blue (C.I. 52015) <i>BioChemica</i>	538	Ruthenium red	694
BCECF <i>BioChemica</i>	129	Dimethylmethylene blue hydrochloride <i>BioChemica</i>	285	Methylene blue (C.I. 52015) pure USP, BP	538	Safranine O (C.I. 50240) for Microscopy	700
BCECF-AM <i>BioChemica</i>	129	Dimethyl yellow (C.I. 11020)	288	Methyl green (C.I. 42590)	539	Silver nitrate Molecular biology grade	713
Bicinchoninic acid Protein Assay	138	Dimidium bromide <i>BioChemica</i>	288	Methyl orange (C.I. 13025)	540	Silver nitrate <i>BioChemica</i>	713
Bicinchoninic acid Protein Assay Micro	138	Eosin B (C.I. 45400)	328	Methyl red (C.I. 13020)	542	Silver nitrate p. A.	713
Bisbenzimidazole H33258 <i>BioChemica</i>	145	Eosin Y (C.I. 45380)	328	Methyl red sodium salt	542	Silver nitrate pure Ph. Eur., USP	714
Bisbenzimidazole H33342 <i>BioChemica</i>	146	Eriochrome black T (C.I. 14645)	330	Methyl violet (C.I. 42535)	543	Stains all	762
Bismarck brown R (C.I. 21010)	146	Erioglaucine (C.I.42090)	330	Murexide (C.I. 56085)	553	Sudan IV (C.I. 26105)	777
Bismarck brown Y (C.I. 21000)	147	Erythrosin B (C.I. 45430)	331	β-Naphthol violet	560	Sudan black B (C.I. 26150)	777
Brilliant cresyl blue (C.I. 51010)	158	Ethidium bromide <i>BioChemica</i>	338	Neutral red (C.I. 50040)	564	Sudan red G (C.I. 12150)	777
Brilliant green (C.I. 42040)	158	Ethidium bromide - Solution 1 % <i>BioChemica</i>	338	Nile blue (C.I. 51180)	567	Thymol blue	815
Bromochlorophenol blue	159	Ethidium bromide - Solution 0.07 % "dropper-bottle"	338	Nitro-PAPS disodium salt <i>BioChemica</i>	572	Thymol blue sodium salt water-soluble	815
Bromocresol green	159	Evan's blue (C.I. 23860)	344	Orange G (C.I. 16230)	585	Thymolphthalein	816
Bromocresol purple	160	Fast Green FCF (C.I. 42053)	345	Patent Blue V Calcium salt (C.I. 45051)	593	Titan yellow (C.I. 19540)	818
Bromophenol blue	161	Field's stain A	350	Phenolphthalein (C.I. 764)	617	Toluidine blue (C.I. 52040)	823
Bromophenol blue sodium salt Electrophoresis grade	162	Field's stain B	350	Phenol red Molecular biology grade	618	Trypan blue (C.I. 23850)	842
Bromophenol blue sodium salt	162	FITC <i>BioChemica</i>	351	Phenol red Cell culture grade	618	Uranine AP (C.I. 45350)	849
Bromophenol red	162	Folin-Ciocalteu's phenol reagent	354	Phenol red	619	Wright's Eosin-Methylene blue	867
Bromothymol blue	163	Fuchsin acidic disodium salt (C.I. 42685)	364	Phenol red sodium salt	619	Xylene cyanol FF (C.I. 42135) <i>BioChemica</i>	872
Bromothymol blue sodium salt	163	Fuchsin basic (C.I. 42510) Microscopy grade	364	Ponceau S (C.I. 27195)	635	<i>para</i> -Xylenol blue	872
Bromoxyleneol blue	163	Giemsa stain	373	Propidium iodide <i>BioChemica</i>	669	Xyleneol orange tetrasodium salt for metal titration	872
Chlorophenol red	206						
Cochénille Red (C.I. 16255)	220						
Congo red (C.I. 22120)	241						

Electrophoresis chemicals

Description	Page	Description	Page	Description	Page	Description	Page
Acrylamide Molecular biology grade	51	AquaPlus - Mix 32 : 1 (30 %) for IEF	53	Acrylamide 2K - Solution (30 %) - Mix 29 : 1	56	Acrylamide 4K - Sequencing solution (25 %) 19 : 1	59
Acrylamide 4K ultrapure	51	AquaPlus - Mix 37.5 : 1 (30 %)	54	Acrylamide 4K - Solution (40 %) - Mix 32 : 1	56	Acrylamide 2K - Sequencing solution (40 %) 19 : 1	59
Acrylamide 2K Standard grade, ultrapure	52	Acrylamide - Solution (30 %) Molecular biology grade	54	Acrylamide 4K - Solution (30 %) - Mix 32 : 1	57	Acrylamide 2K - Sequencing solution (25 %) 19 : 1	59
Acrylamide 4K - Mix 19 : 1 (Powder)	52	Acrylamide 4K - Solution (40 %)	54	Acrylamide 2K - Solution (40 %) - Mix 32 : 1	57	Acrylamide - Sequencing buffer	60
Acrylamide 2K - Mix 19 : 1 (Powder)	52	Acrylamide 2K - Solution (40 %)	54	Acrylamide 2K - Solution (30 %) - Mix 32 : 1	57	Acrylamide - Diluent for sequencing gels	60
Acrylamide 4K - Mix 29 : 1 (Powder)	52	Acrylamide 2K - Solution (30 %)	54	Acrylamide - Solution (30 %) - Mix 37.5 : 1 Molecular biology grade	57	Acrylamide 4K - Sequencing kit (25 %)	60
Acrylamide 2K - Mix 29 : 1 (Powder)	52	Acrylamide 4K - Stacking gel solution (5 %) for SDS-PAGE	55	Acrylamide 2K - Solution (40 %) - Mix 37.5 : 1	57	Acrylamide 2K - Sequencing kit (25 %)	61
Acrylamide 4K - Mix 32 : 1 (Powder)	52	Acrylamide 2K - Stacking gel solution (5 %) for SDS-PAGE	55	Acrylamide 2K - Solution (30 %) - Mix 37.5 : 1	58	Acrylamide - Stacking gel buffer for protein gels (8X)	61
Acrylamide 2K - Mix 32 : 1 (Powder)	53	Acrylamide 4K - Stacking gel solution (4 %) for SDS-PAGE	55	Acrylamide 2K - Solution (30 %) - Mix 49 : 1	58	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (6 %)	61
Acrylamide 4K - Mix 37.5 : 1 (Powder)	53	Acrylamide 4K - Solution (50 %) - Mix 16.6 : 1	55	Acrylamide 4K - Solution (63.9 %) - Mix 158.75 : 1 for TAU gels	58	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (8 %)	62
Acrylamide 2K - Mix 37.5 : 1 (Powder)	53	Acrylamide - Solution (40 %) - Mix 19 : 1 Molecular biology grade	55	Acrylamide 2K : Diacryloylpiperazine - Solution (40 %) - Mix 39 : 1	58	Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (10 %)	62
AquaPlus - Mix 19 : 1 (40 %)	53	Acrylamide - Solution (30 %) - Mix 19 : 1 Molecular biology grade	55	Acrylamide 4K - Sequencing solution (40 %) 19 : 1	59		
AquaPlus - Mix 29 : 1 (30 %)	53	Acrylamide 2K - Solution (30 %) - Mix 19 : 1	56				

Electrophoresis chemicals

Description	Page	Description	Page	Description	Page	Description	Page
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (12 %)	62	Agarose Low Melt Large DNA grade	72	Cresol red Molecular biology grade	247	Ethidium bromide - Solution 1 % <i>BioChemica</i>	338
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (15 %)	62	Ammonium persulfate Molecular biology grade	102	Crystal violet (C.I. 42555)	247	Ethidium bromide - Solution 0.07 % "dropper-bottle"	338
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (5 %)	62	Ammonium persulfate <i>BioChemica</i>	102	1,4-Diacryloylpiperazine <i>BioChemica</i>	272	GelSave	371
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (10 %)	62	Ampholyte Electrophoresis grade, pH 2-4	105	N,N'-Diallyltartardiamide <i>BioChemica</i>	272	Loading buffer DNA I	493
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (12.5 %)	62	Ampholyte Electrophoresis grade, pH 2-9	105	1,2-Dihydroxyethylene-bisacrylamide <i>BioChemica</i>	281	Loading buffer DNA II	494
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (15 %)	62	Ampholyte Electrophoresis grade, pH 2-11	105	Dimethyldichlorosilane - Solution 5 % <i>BioChemica</i>	284	Loading buffer DNA II b	494
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (10 %)	63	Ampholyte Electrophoresis grade, pH 3-4	105	DNA Ladder 100 bp (lyophilised)	319	Loading buffer DNA III (alkaline)	494
Acrylamide 2K - Ready-to-use solution for SDS-PAGE (7.5 %)	63	Ampholyte Electrophoresis grade, pH 3-5	105	DNA Ladder 100 bp	320	Loading buffer DNA IV (for Agarose gels)	494
Acrylamide 2K - Ready-to-use solution for SDS-PAGE (10 %)	63	Ampholyte Electrophoresis grade, pH 3-6	105	DNA Ladder 100 bp equalized (lyophilised)	320	Loading buffer V (for denaturing urea gels)	494
Acrylamide 2K - Ready-to-use solution for SDS-PAGE (12.5 %)	63	Ampholyte Electrophoresis grade, pH 3-7	105	DNA Ladder 100 bp plus (lyophilised)	320	Loading buffer VI (for sequencing gels)	495
Acrylamide 2K - Ready-to-use solution for SDS-PAGE (15 %)	63	Ampholyte Electrophoresis grade, pH 3-10	106	DNA Ladder Mix 100 - 5000 (lyophilised)	320	Loading buffer VII (for denaturing PAGE)	495
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	63	Ampholyte Electrophoresis grade, pH 3-10 (2D)	106	DNA Ladder 250 bp (lyophilised)	321	Loading buffer VIII (for Glyoxal / DMSO - RNA gels)	495
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	63	Ampholyte Electrophoresis grade, pH 4-5	106	DNA Ladder 250 bp plus (lyophilised)	321	Loading buffer IX (for SDS gels)	495
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	63	Ampholyte Electrophoresis grade, pH 4-6	106	DNA Ladder 1 kb (lyophilised)	321	Loading buffer X (PCR)	495
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	63	Ampholyte Electrophoresis grade, Maize Standard	106	DNA Ladder 1 kb	321	3-Methacryloxypropyl trimethoxysilane	532
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (8 %)	64	Ampholyte Electrophoresis grade, pH 4-7	106	DNA Ladder 1 kb concatamer (lyophilised)	322	Neutral red (C.I. 50040)	564
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Ampholyte Electrophoresis grade, pH 5-6	106	DNA Marker quick-run (lyophilised)	322	SeparateIT Polymer Solution	709
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64	Ampholyte Electrophoresis grade, pH 5-7	106	DNA Marker quick-run extended (lyophilised)	322	TAE buffer (50X) Molecular biology grade	791
Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64	Ampholyte Electrophoresis grade, pH 5-7 PGM	106	DNA Marker pBR322 - <i>Hae</i> III (lyophilised)	322	TAE buffer (50X)	791
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	64	Ampholyte Electrophoresis grade, pH 5-8	106	DNA Marker pBR322 - <i>Hae</i> III	323	TAE buffer (10X) Molecular biology grade	791
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	64	Ampholyte Electrophoresis grade, pH 5-9	107	DNA Marker pBR322 Mix (lyophilised)	323	TAE buffer (10X)	791
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Ampholyte Electrophoresis grade, pH 6-7	107	DNA Marker Phage Lambda - <i>Bst</i> E II (lyophilised)	323	TBE buffer (10X) Molecular biology grade	797
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64	Ampholyte Electrophoresis grade, pH 6-8	107	DNA Marker Phage Lambda - <i>Bst</i> E II	323	TBE buffer (10X) Fluorescence grade	797
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64	Ampholyte Electrophoresis grade, pH 6-9	107	DNA Marker Phage Lambda - <i>Hind</i> III (lyophilised)	324	TBE buffer (10X)	797
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	64	Ampholyte Electrophoresis grade, pH 7-9	107	DNA Marker Phage Lambda - <i>Hind</i> III	324	TBE buffer (5X) Molecular biology grade	797
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	64	Bisacrylamide 4K - Solution (2 %)	144	DNA Marker pUC19 - <i>Msp</i> I (lyophilised)	324	TBE buffer (5X)	798
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Bisacrylamide 4K - Solution (1 %)	144	DNA Marker pUC19 - <i>Msp</i> I	324	TBE buffer (10X) powder	798
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64	Bisacrylamide 2K - Solution (2 %)	144	Protein Marker I (14 - 116)	325	TBE buffer (5X) powder	798
Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64	N,N'-Bisacryloyl cystamine <i>BioChemica</i>	145	Protein Marker II (6.5 - 200) pre-stained	325	TEMED	801
β-Agarose <i>BioChemica</i>	71	Bromocresol green	159	Protein Marker III (6.5 - 200)	325	TPE buffer (10X)	824
		Bromophenol blue sodium salt Molecular Biology grade	162	Protein Marker IV (10 - 150)	325	TPE buffer (1X)	824
		Bromophenol blue sodium salt Electrophoresis grade	162	Protein Marker V (10 - 175) pre-stained	325	Tris-Glycine buffer (10X) <i>BioChemica</i>	838
		Chlorophenol red	206	Protein Marker VI (10 - 245) pre-stained	325	Tris-Glycine buffer (5X) <i>BioChemica</i>	838
				Eosin B (C.I. 45400)	328	Tris-Glycine buffer (1X) <i>BioChemica</i>	839
				Eosin Y (C.I. 45380)	328	Tris-Tricine-SDS buffer (5X) <i>BioChemica</i>	839
				Ethidium bromide <i>BioChemica</i>	338	Tris-Tricine-SDS buffer (1X) <i>BioChemica</i>	840
						Urea <i>BioChemica</i>	850

Electrophoresis dyes

Description	Page	Description	Page	Description	Page	Description	Page
Bromocresol green	159	Cresol red Molecular biology grade	247	Eosin Y (C.I. 45380)	328	Neutral red (C.I. 50040)	564
Bromophenol blue sodium salt Molecular Biology grade	162	Crystal violet (C.I. 42555)	247	Ethidium bromide <i>BioChemica</i>	338	Proteo-Dye Blue-Vis	674
Bromophenol blue sodium salt Electrophoresis grade	162	Dimidium bromide <i>BioChemica</i>	288	Ethidium bromide - Solution 1 % <i>BioChemica</i>	338	Proteo-Dye Green-Fluo	675
Chlorophenol red	206	DNA-Dye Methylene blue	302	Ethidium bromide - Solution 0.07 % "dropper-bottle"	338	Proteo-Dye Red-Fluo	675
		Eosin B (C.I. 45400)	328			Xylene cyanol FF (C.I. 42135) Molecular Biology grade	872

Enzyme inhibitors

Description	Page	Description	Page	Description	Page	Description	Page
AEBSF hydrochloride <i>BioChemica</i>	69	Chloroquine diphosphate <i>BioChemica</i>	207	H-8 <i>BioChemica</i>	395	Protease Inhibitor Cocktail 4 MammCell/Tissue Plus	672
α -Amanitine	84	Chymostatin	211	H-9 <i>BioChemica</i>	395	Protease Inhibitor Cocktail 5 MammCell/Tissue	673
Amastatin hydrochloride	84	Cyclopiazonic acid <i>BioChemica</i>	253	HT2 Toxin <i>BioChemica</i>	410	Protease Inhibitor Cocktail 6 His-Tag Prot	673
7-Aminoactinomycin D <i>BioChemica</i>	85	D-Cycloserine <i>BioChemica</i>	253	8-Hydroxyquinoline	428	Puromycin aminonucleoside <i>BioChemica</i>	676
p-Aminobenzamidine dihydrochloride <i>BioChemica</i>	86	Demecolcine <i>BioChemica</i>	262	N-Hydroxyurea	429	Ribonuclease inhibitor from human placenta	687
ϵ -Aminocaproic acid <i>BioChemica</i>	87	Deoxynojirimycin hydrochloride <i>BioChemica</i>	266	3-Isobutyl-1-methylxanthine <i>BioChemica</i>	464	Ribonuclease Inhibitor, recombinant	687
Aminopterin <i>BioChemica</i>	90	DEPC <i>BioChemica</i>	268	KT5720 <i>BioChemica</i>	474	Sodium fluoride <i>BioChemica</i>	733
Ammonium molybdate tetrahydrate <i>BioChemica</i>	100	Dihydrocytochalasin B <i>BioChemica</i>	280	KT5823 <i>BioChemica</i>	474	Sodium molybdate dihydrate <i>BioChemica</i>	746
Antipain dihydrochloride <i>BioChemica</i>	111	E-64	311	Leupeptin hemisulfate	488	Sodium orthovanadate <i>BioChemica</i>	748
Apicidin <i>BioChemica</i>	112	Ebselen	312	Lithium chloride <i>BioChemica</i>	492	Sodium pyrophosphate decahydrate <i>BioChemica</i>	750
APMBT ultrapure	113	EDTA <i>BioChemica</i>	313	α_2 -Macroglobulin	501	Subtilisin Inhibitor I	775
APMSF hydrochloride <i>BioChemica</i>	114	EDTA dipotassium salt dihydrate <i>BioChemica</i>	314	3-Mercaptapicolinic acid hydrochloride	529	Swainsonine	789
Aprotinin <i>BioChemica</i>	116	EDTA disodium salt dihydrate <i>BioChemica</i>	314	Mycophenolic acid <i>BioChemica</i>	555	T2 Toxin <i>BioChemica</i>	789
Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122	EDTA tetrasodium salt dihydrate <i>BioChemica</i>	317	Myriocin <i>BioChemica</i>	556	Tetracaine hydrochloride <i>BioChemica</i>	804
Benzamidine hydrochloride <i>BioChemica</i>	132	EGTA Molecular biology grade	318	NNGH	576	Thapsigargin	810
Bestatin hydrochloride <i>BioChemica</i>	137	Elastase Inhibitor I	319	Okadaic acid	583	Thimerosal <i>BioChemica</i>	812
1,5-Bis-(4-allyldimethylammoniumphenyl)-pentane-3-one dibromide <i>BioChemica</i>	145	5-Fluorouracil <i>BioChemica</i>	354	Okadaic acid sodium salt	583	Thiolutin <i>BioChemica</i>	813
Bisindolylmaleimide <i>BioChemica</i>	146	Forskolin <i>BioChemica</i>	363	Oligomycin A <i>BioChemica</i>	585	N α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) <i>BioChemica</i>	823
Boc-Ala-Pro-Phe-NHO-Bz	153	Fumonisin B1 <i>BioChemica</i>	366	Oligomycin B <i>BioChemica</i>	585	Tosyl-L-phenylalanine chloromethyl ketone (TPCK)	824
Boc-Pro-Phe-NHO-Bz-p-Cl	153	Fumonisin B2 <i>BioChemica</i>	366	Oxamic acid sodium salt	589	Triacsin C <i>BioChemica</i>	828
Calpain Inhibitor I	183	Fusidic acid sodium salt <i>BioChemica</i>	366	Parthenolide <i>BioChemica</i>	592	Trichostatin A <i>BioChemica</i>	830
Calpain Inhibitor II	183	β -Glycerol phosphate disodium salt hydrate <i>BioChemica</i>	386	Paxilline <i>BioChemica</i>	593	Trypsin inhibitor from soybean > 10000 BAE	843
Calpain Inhibitor III	183	Guanidine hydrochloride Molecular biology grade	392	Penitrem A <i>BioChemica</i>	602	Trypsin inhibitor from soybean > 7000 BAE	843
Castanospermine <i>BioChemica</i>	187	Guanidine hydrochloride ultrapure	392	Pepstatin A	604	Tunicamycin	846
Cathepsin Inhibitor I	188	Guanidine hydrochloride <i>BioChemica</i>	392	Phalloidin	610	Verruculogen <i>BioChemica</i>	855
Cathepsin Inhibitor II	189	Guanidine thiocyanate Molecular biology grade	393	1,10-Phenanthroline monohydrate	611	Z-Gly-Phe-NHO-Bz	874
Cathepsin Inhibitor III	189	Guanidine thiocyanate <i>BioChemica</i>	393	Phosphoramidon disodium salt <i>BioChemica</i>	624		
Cathepsin/Subtilisin Inhibitor	189	H-7 <i>BioChemica</i>	395	PMSF <i>BioChemica</i>	630		
Chelethrythrine chloride <i>BioChemica</i>	196			Protease Inhibitor Cocktail 1 Cell	672		
				Protease Inhibitor Cocktail 2 MultiPurpose	672		
				Protease Inhibitor Cocktail 3 Bacteria	672		

Enzymes

Description	Page	Description	Page	Description	Page	Description	Page
β -Agarase <i>BioChemica</i>	71	Creatine Kinase MB Fraction, human	245	Hyaluronidase Grade II	410	Lysozyme Molecular Biology grade	500
L-Alanine dehydrogenase, bacterial Technical grade	75	Creatine Kinase MM Fraction, human	245	L-Hydroxyisocaproate dehydrogenase, bacterial Technical grade	426	Lysozyme <i>BioChemica</i>	500
Alcohol dehydrogenase, bacterial Technical grade	78	DNA Polymerase I, Klenow-Fragment from <i>E. coli</i>	304	Hydroxynitrile Lyase, plant Technical grade	427	Lysozyme, human	500
Alcohol dehydrogenase, bacterial Technical grade	78	DNase I	305	Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475	D-Mandelate dehydrogenase, bacterial Technical grade	513
α -Amylase from Pancreas, human	109	Elastase, neutrophil Grade 2, human	319	Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)	475	Myeloperoxidase, human	555
α -Amylase from Saliva, human	109	Enolase, Neuron-specific human	327	Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475	Nuclease, Micrococcus	579
Ascorbate oxidase from <i>Cucurbita spec.</i>	120	Exonuclease III	344	Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)	475	Pancreatin	590
Bromelain from pineapple <i>BioChemica</i>	158	D-Glucose dehydrogenase, bacterial Technical grade	378	Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)	476	Papain	591
Cathepsin G, human	188	Glucose Oxidase from <i>Aspergillus niger</i> , low catalase	378	L-Lactate dehydrogenase, bacterial Technical grade	476	Pepsin	603
Cathepsin G-biotinylated, human	188	Glutamate Oxaloacetate Transaminase (GOT), human lyophilized	379	L-Leucine dehydrogenase, bacterial Technical grade	487	Peroxidase from horseradish EIA and Immunology Grade I	607
α -Chymotrypsin from bovine pancreas Grade I	211	Glutamate Oxaloacetate Transaminase (GOT), human Suspension	380	Lipase from porcine pancreas	490	Peroxidase from horseradish EIA and Immunology Grade II	607
α -Chymotrypsin from bovine pancreas Grade II	211	Glutamate Pyruvate Transaminase (GPT), human	380	Lipase, human	490	Peroxidase from horseradish Practical Grade I	608
Chymotrypsinogen A	212	Hyaluronidase Grade I	410	Lipoxidase from soybean	491	Phosphatase, acid from sweet potato	622
Creatine Kinase BB Fraction, human	245						

Enzymes

Description	Page	Description	Page	Description	Page	Description	Page
Phosphatase, acid from wheat germ	622	Proteinase K - Solution	674	T4 Polynucleotide kinase	790	Tii Inorganic Pyrophosphatase	819
Phosphatase, alkaline bacterial (BAP)	622	Psp DNA Polymerase	676	T4 RNA Ligase	790	Trypsin from bovine pancreas	842
Phosphatase, alkaline from calf intestine (CIP) Grade I	623	Renin, human	684	Taq DNA Polymerase	793	γ -irradiated Trypsin 1:250 from porcine pancreas	842
Phosphatase, alkaline from calf intestine (CIP) Grade II	623	M-MuLV Reverse Transcriptase, RNase H minus	685	Taq DNA Polymerase DNA-free	793	Trypsin 1 : 250 from porcine pancreas	842
Protease from <i>Streptomyces griseus</i>	671	RNase A (DNase-free)	689	SuperHot Taq DNA Polymerase	793	Trypsinogen	843
Proteinase K, recombinant	673	RNase A	690	SuperHot Taq-red DNA Polymerase	794	Tth DNA Polymerase	845
Proteinase K	674	RNase T	690	Klein Taq DNA Polymerase	794	Uracil-DNA Glycosylase (UDG)	849
		T4 DNA Ligase	790	Thyroid-Peroxidase (TPO), human	816		

Enzyme substrates

Description	Page	Description	Page	Description	Page	Description	Page
ABTS [®] <i>BioChemica</i>	37	Guanosine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	394	MUGlucoside <i>BioChemica</i>	552	4-Nitrophenyl- β -D-glucopyranoside <i>BioChemica</i>	574
N-Acetyl-D-galactosamine	49	Guanosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	394	MUPhosphate disodium salt trihydrate <i>BioChemica</i>	553	4-Nitrophenyl- β -D-glucuronide <i>BioChemica</i>	574
Acetylthiocholine iodide <i>BioChemica</i>	49	D-myo-Inositol-4,5-bisphosphate tetraammonium salt <i>BioChemica</i>	452	NAD	556	4-Nitrophenyl phosphate disodium salt hexahydrate <i>BioChemica</i>	575
N-Acetyl-L-tyrosine ethyl ester monohydrate (ATEE) <i>BioChemica</i>	50	D-myo-Inositol-4-monophosphate diammonium salt <i>BioChemica</i>	452	NADH disodium salt	557	4-Nitrophenyl- β -D-xyloside <i>BioChemica</i>	575
Adenosine 5'-diphosphoric acid disodium salt dihydrate <i>BioChemica</i>	68	D-myo-Inositol-1,3,4,5,6-pentakisphosphate decaammonium salt <i>BioChemica</i>	452	NADP sodium salt	557	o-Phenylenediamine, free base <i>BioChemica</i>	620
Adenosine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	68	D-myo-Inositol-3,4,5,6-tetrakisphosphate octaammonium salt <i>BioChemica</i>	452	NADPH tetrasodium salt	557	Pyruvic acid <i>BioChemica</i>	679
Adenosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	68	D-myo-Inositol-1,4,5-trisphosphate trisodium salt <i>BioChemica</i>	453	Naphthol AS acetate <i>BioChemica</i>	558	Pyruvic acid for synthesis	679
BCIP <i>BioChemica</i>	130	Iodonitrotetrazolium chloride <i>BioChemica</i>	457	Naphthol AS-BI phosphate <i>BioChemica</i>	559	Rose-Gal <i>BioChemica</i>	691
N α -Benzoyl-L-arginine ethyl ester hydrochloride (BAEE) <i>BioChemica</i>	134	IPTG Molecular Biology grade	458	Naphthol AS-D chloroacetate <i>BioChemica</i>	559	Rose-Glucuro CHA salt <i>BioChemica</i>	692
Calcium lactate pentahydrate <i>BioChemica</i>	181	IPTG <i>BioChemica</i>	458	Naphthol AS-D acetate <i>BioChemica</i>	559	Rose-Phos p-toluidine salt <i>BioChemica</i>	692
Calcium lactate pentahydrate pure Ph. Eur., USP	181	IPTG from plant origin galactose	459	Naphthol AS-D phosphate <i>BioChemica</i>	559	Sialic acid <i>BioChemica</i>	711
4-Chloro-1-naphthol <i>BioChemica</i>	206	α -Ketoglutaric acid <i>BioChemica</i>	470	Naphthol AS-E acetate <i>BioChemica</i>	559	Sodium pyruvate <i>BioChemica</i>	750
Coelenterazine H <i>BioChemica</i>	220	α -Ketoglutaric acid monopotassium salt <i>BioChemica</i>	471	Naphthol AS-MX acetate <i>BioChemica</i>	560	Sodium pyruvate p. A.	750
Creatine phosphate disodium salt tetrahydrate <i>BioChemica</i>	246	L(+)-Lactic acid lithium salt crystalline <i>BioChemica</i>	476	Naphthol AS-MX phosphate <i>BioChemica</i>	560	Succinic acid crystalline <i>BioChemica</i>	775
Cytidine 5'-diphosphoric acid trisodium salt dihydrate <i>BioChemica</i>	256	L(+)-Lactic acid sodium salt crystalline <i>BioChemica</i>	477	1-Naphthyl acetate <i>BioChemica</i>	560	Succinic acid crystalline pure	775
Cytidine 5'-monophosphoric acid disodium salt hydrate <i>BioChemica</i>	256	L-Leucine 2-naphthylamide hydrochloride <i>BioChemica</i>	487	2-Naphthyl acetate <i>BioChemica</i>	560	Thiazolyl blue tetrazolium bromide <i>BioChemica</i>	811
Cytidine 5'-triphosphoric acid disodium salt dihydrate <i>BioChemica</i>	256	D-Luciferin free acid	496	1-Naphthyl butyrate <i>BioChemica</i>	561	Uridine 5'-diphosphoric acid disodium salt <i>BioChemica</i>	851
N,N-Dimethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	286	D-Luciferin sodium salt	497	1-Naphthyl phosphate monosodium salt monohydrate <i>BioChemica</i>	561	Uridine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	851
FALGPA <i>BioChemica</i>	345	Magenta-Glucuro CHA salt <i>BioChemica</i>	502	2-Naphthyl phosphate monosodium salt <i>BioChemica</i>	561	Uridine 5'-triphosphoric acid trisodium salt hydrate <i>BioChemica</i>	851
Flavin adenine dinucleotide disodium salt dihydrate <i>BioChemica</i>	351	DL-Malic acid <i>BioChemica</i>	509	NBT <i>BioChemica</i>	562	WST-1 <i>BioChemica</i>	867
Fluorescein dilaurate <i>BioChemica</i>	353	DL-Malic acid pure Ph. Eur., NF, E 296	509	4-Nitrophenyl-N-acetyl- α -D-galactosaminide <i>BioChemica</i>	573	WST-3 <i>BioChemica</i>	868
α -D-Galactose-1-phosphate dipotassium salt dihydrate	368	L(-)-Malic acid <i>BioChemica</i>	510	4-Nitrophenyl-N-acetyl- β -D-glucosaminide <i>BioChemica</i>	573	X-Gal Molecular Biology grade	868
α -D-Glucose 1-phosphate disodium salt hydrate <i>BioChemica</i>	378	α -D-Mannose-1-phosphate dipotassium salt dihydrate	516	4-Nitrophenyl- α -L-fucopyranoside <i>BioChemica</i>	573	X-Gal <i>BioChemica</i>	869
D-Glucuronic acid sodium salt monohydrate <i>BioChemica</i>	379	MUAcetate <i>BioChemica</i>	551	2-Nitrophenyl- β -D-galactopyranoside <i>BioChemica</i>	573	X-Glu <i>BioChemica</i>	869
D(+)-Glucuronic acid- γ -lactone <i>BioChemica</i>	379	MU-N-acetyl- β -D-galactosaminide <i>BioChemica</i>	551	4-Nitrophenyl- β -D-galactopyranoside <i>BioChemica</i>	574	X-Glucuro CHA salt <i>BioChemica</i>	869
β -Glycerol phosphate disodium salt hydrate <i>BioChemica</i>	386	MUG trihydrate <i>BioChemica</i>	552	2-Nitrophenyl- β -D-glucopyranoside <i>BioChemica</i>	574	X-Glucuro sodium salt trihydrate <i>BioChemica</i>	869
		MUGalactoside <i>BioChemica</i>	552			X-Phos disodium salt <i>BioChemica</i>	870
						XTT sodium salt <i>BioChemica</i>	870

Gel Filtration

Description	Page	Description	Page	Description	Page	Description	Page
AppliXchange-G25 M	116	DextraSEC NA10	271	DextraSEC PRO10	271		
DextraSEC NA2	270	DextraSEC PRO2	271	DextraSEC 96W	271		

Immunoassay buffers

Description	Page	Description	Page	Description	Page	Description	Page
Antibody Stabilizer-PBS	446	Blocking Buffer II EGrade	447	CrossDown Buffer	448	Sample Buffer T+	449
Antibody Stabilizer-Tris	446	Blocking Buffer III BSA	448	CrossDown Peroxidase-Stabilizer	449	Stripping Buffer I	450
AppliCoat Plate Stabilizer	447	Coating Buffer C pH 9.6	448	Peroxidase-Stabilizer	449	Washing Buffer TrisT- (10X)	450
Blocking Buffer I	447	Coating Buffer PBS pH 7.4	448	Sample Buffer T-	449	Washing Buffer TrisT+ (10X)	450

Ion-pair reagents

Description	Page	Description	Page	Description	Page	Description	Page
1-Butanesulfonic acid sodium salt IPC grade	170	1,2-Ethanedisulfonic acid disodium salt IPC grade	332	1-Nonanesulfonic acid sodium salt IPC grade	576	1-Propanesulfonic acid sodium salt IPC grade	664
1-Decanesulfonic acid sodium salt IPC grade	260	1-Heptanesulfonic acid sodium salt monohydrate IPC grade	404	1-Octanesulfonic acid sodium salt IPC grade	581	SDS IPC grade	705
1-Dodecanesulfonic acid sodium salt IPC grade	305	1-Hexanesulfonic acid sodium salt monohydrate IPC grade	408	1-Pentanesulfonic acid sodium salt monohydrate IPC grade	603	Tetrabutylammonium hydrogen sulfate IPC grade	803

Microbiological Media and Additives

Description	Page	Description	Page	Description	Page	Description	Page
Agar Kobe I	70	Deoxynojirrimycin hydrochloride <i>BioChemica</i>	266	Listeria Selective Agar Base, Palcam	491	Peptone from casein (enzymatic digest)	604
Agar purified Bacteriology grade	70	DIASALM Medium Base	273	Lysozyme <i>BioChemica</i>	500	Peptone from casein (pancreatic digest)	604
Agar Bacteriology grade	70	Drigalski Lactose Agar	309	MacConkey-Agar	501	Peptone from gelatin	604
Albumin Microbiology grade	78	Endo Agar Base	327	MacConkey-Broth (Purple)	501	Peptone from lactalbumin (Lactalbumin hydrolysate)	604
Alphotericin B <i>BioChemica</i>	107	Eosin Methylene Blue Agar	328	Malt extract Microbiology grade	510	Peptone from meat (enzymatic digest)	605
Ampicillin sodium salt <i>BioChemica</i>	108	Erythromycin base <i>BioChemica</i>	331	Malt Extract Agar Microbiology grade	511	Peptone from soybean (enzymatic digest)	605
<i>Bacillus cereus</i> (PREP) Agar Base	124	Fastidious Anaerobe Isolation Agar Base	345	Mithramycin A	547	Peptone from wheat (enzymatic digest)	605
Bacitracin <i>BioChemica</i>	125	G418 disulfate <i>BioChemica</i>	366	Mitomycin C	547	Pepton Water, Buffered	605
Baird-Parker Agar Base	126	Gellan gum	371	MRS Agar Base	550	Plate Count Agar	629
Bile Esculin Agar	139	Genistein <i>BioChemica</i>	372	MRS Broth Base	551	Potato Dextrose Agar	662
Bleomycin sulfate <i>BioChemica</i>	149	Gramicidin	390	MU-N-acetyl-β-D-galactosaminide <i>BioChemica</i>	551	Protose	675
Blood Agar Base	149	Hektoen Enteric Agar	400	Mueller-Hinton Agar	551	Reinforced Clostridial (RCM-DRCM) Medium Base	684
Blue Agar	149	N-Hydroxyurea	429	Mueller-Hinton II Agar	552	Sabouraud Chloramphenicol Agar	694
Brain Heart Infusion Agar	156	Ionomycin free acid <i>BioChemica</i>	457	Mueller-Hinton Broth	552	Sabouraud Dextrose (4 %) Agar	694
Brefeldin A <i>BioChemica</i>	156	Ionomycin calcium salt <i>BioChemica</i>	457	MUG trihydrate <i>BioChemica</i>	552	Salmonella-Shigella (SS) Agar, Modified	701
Canavanine sulfate <i>BioChemica</i>	184	IPTG <i>BioChemica</i>	458	MUGalactoside <i>BioChemica</i>	552	Selenite Broth Base	708
Carbenicillin disodium salt <i>BioChemica</i>	185	IPTG from plant origin galactose	459	MUGlucoside <i>BioChemica</i>	552	Simmons Citrate Agar	718
Cetrimide Agar Base	193	Kanamycin Esculin Azide Agar	469	MUPhosphate disodium salt trihydrate <i>BioChemica</i>	553	SOB-Medium - Powder	720
Chloramphenicol Glucose Agar	202	King A Agar Base	472	Nalidixic acid <i>BioChemica</i>	558	Sodium thioglycolate Microbiology grade	755
Chlorhexidine diacetate pure Ph. Eur.	202	Kligler-Iron-Agar	473	Nalidixic acid sodium salt <i>BioChemica</i>	558	Spectinomycin dihydrochloride pentahydrate <i>BioChemica</i>	759
Chlorhexidine diacetate monohydrate <i>BioChemica</i>	203	Lactose Broth	478	Nutrient Agar	579	STET buffer	773
Chlorotetracycline hydrochloride <i>BioChemica</i>	207	Lactose peptone broth, DEV	478	Nutrient Agar, DEV	579	Supplement for <i>Bacillus cereus</i> (PREP) Agar Base	786
Chocolate Agar Base	208	Lauryl Sulfate Broth	481	Nutrient Broth	579	Supplement for Baird-Parker Agar Base	786
CLED Agar	218	LB-Agar - Powder according to Lennox	481	Nystatin dihydrate <i>BioChemica</i>	580	Supplement for Chocolate Agar Base	786
Colistin sulfate <i>BioChemica</i>	221	LB-Agar - Powder according to Miller	482	Orange-Serum Agar	586	Supplement for DIASALM Medium Base I (Magnesium chloride solution)	787
Columbia Blood Agar Base	241	LB-Medium - Powder according to Lennox	482	Oxytetracycline Glucose Yeast Extract Agar Base	589		
Cycloheximide <i>BioChemica</i>	252	LB-Medium - Powder according to Miller	482	Penicillin G potassium salt <i>BioChemica</i>	601		
D-Cycloserine <i>BioChemica</i>	253	Listeria Selective Agar Base, Oxford	491	Peptone from casein (acid hydrolysate)	604		
Deoxycholate Citrate Agar, Leifson, Modified	264						

Microbiological Media and Additives

Description	Page	Description	Page	Description	Page	Description	Page
Supplement for DIASALM Medium Base II (Selective Supplement)	787	Supplement for Reinforced Clostridial (RCM-DRCM) Medium Base	788	Thioglycolate Medium	812	Violet Red Bile Lactose Agar	856
Supplement for Endo Agar Base	787	Supplement for Selenite Broth Base	788	Tryptone <i>BioChemica</i>	844	X-Gal <i>BioChemica</i>	869
Supplement for Listeria Selective Agar Base, Oxford	787	Supplement for Tetrathionate Broth Base	789	Tryptone Soya Agar	844	XLD Agar	870
Supplement for Listeria Selective Agar Base, Palcam	787	TB-Medium - Powder (Terrific Broth)	798	Tryptone Soya Broth	844	Yeast extract <i>BioChemica</i>	873
Supplement for Oxytetracycline Glucose Yeast Extract Agar Base	788	TB - Phosphate - Powder (10X)	799	Tryptose	845	Yeast Extract Agar	873
Supplement for Potato Dextrose Agar & Malt Extract Agar	788	Tetrathionate Broth Base	809	Tryptose Phosphate Broth	845	Yeast extract Broth	874
				Valinomycin <i>BioChemica</i>	853	YT-Medium - Powder (2X)	874
				Violet Red Bile Glucose Agar Ph.Eur.	855		

Molecular Biology Grade Reagents

Description	Page	Description	Page	Description	Page	Description	Page
ACES Molecular biology grade	38	Autoclave-ExitusPlus™	123	DAPI Molecular biology grade	259	Geno/mini AX <i>Blood</i> DNA Isolation Spin-Kit	299
Acetamide Molecular biology grade	38	3'-Azido-3'-deoxythymidine 5'-triphosphate tri(triethylammonium) salt	124	Denaturing - Solution Molecular biology grade	262	Geno/mini AX <i>Food</i> DNA Isolation Spin-Kit	299
Acetic acid 100 % Molecular biology grade	39	BES Molecular biology grade	136	Denhardt's powder mixture (for 50X stock solution)	262	Geno/mini AX <i>Plant</i> DNA Isolation Spin-Kit	299
Acetonitrile DNA synthesis and peptide sequencing grade	45	Bicine Molecular biology grade	138	Denhardt's - Solution (50X) <i>BioChemica</i>	263	Geno/mini AX <i>Stool</i> DNA Isolation Spin-Kit	299
Acrylamide Molecular biology grade	51	Biotin-11-dUTP	140	3'-Deoxy-2',3'-didehydrothymidine 5'-triphosphate TEA salt <i>BioChemica</i>	265	Geno/mini AX <i>Tissue</i> DNA Isolation Spin-Kit	300
Acrylamide - Solution (40 %) Molecular biology grade	54	Bisacrylamide Molecular biology grade	143	Aminoallyl-dUTP	267	Geno/mini AX <i>Yeast</i> DNA Isolation Spin-Kit	300
Acrylamide - Solution (30 %) Molecular biology grade	54	Bisacrylamide - Solution (2 %) Molecular biology grade	144	Aminobutyl-dATP	267	Geno/midi AX DNA Isolation Spin-Kit	300
Acrylamide - Solution (40 %) - Mix 19 : 1 Molecular biology grade	55	Bis-Tris Molecular biology grade	147	Aminohexyl-dCTP	267	Geno/maxi AX DNA Isolation Spin-Kit	300
Acrylamide - Solution (30 %) - Mix 19 : 1 Molecular biology grade	55	Bis-Tris-propane Molecular biology grade	148	2'-Deoxyuridine 5'-triphosphoric acid tetralithium salt trihydrate <i>BioChemica</i>	268	Geno/miracle DNA Isolation Spin-Kit	301
Acrylamide - Solution (30 %) - Mix 37.5 : 1 Molecular biology grade	57	Blocking Reagent CA	149	DEPC <i>BioChemica</i>	268	Plant AC	301
Agar Molecular biology grade	70	Boric acid Molecular biology grade	154	Detritylation - Solution DNA synthesis grade	269	Terminator Removal Kit	301
Agarose Basic	71	1-Bromo-3-chloropropane <i>BioChemica</i>	159	Dextran sulfate 500 sodium salt Molecular biology grade	270	Terminator Removal 96-well Kit	301
Agarose low EEO (Agarose Standard)	71	5-Bromo-2'-deoxyuridine 5'-triphosphate tri(triethylammonium) salt <i>BioChemica</i>	161	Dichloromethane DNA synthesis and protein sequencing grade	275	Virus DNA/RNA Isolation Spin-Kit	301
Agarose medium EEO	71	Bromophenol blue sodium salt Molecular biology grade	162	N,N-Dimethylformamide Molecular biology grade	284	DNA-ExitusPlus™	302
Agarose high EEO	71	1-Butanol Molecular biology grade	170	Dimethyl sulfoxide Molecular biology grade	286	DNA-ExitusPlus™ IF	303
Agarose special EEO	72	2-Butanol Molecular biology grade	171	DNA Cot-I, human	294	DNA Phage Lambda	303
Agarose Low Melt S	72	Calcium chloride dihydrate Molecular biology grade	178	Bacterial DNA InfectoPrep Adult	294	DNA Phage T7	303
Agarose Low Melt 3	72	CAPS Molecular biology grade	184	Bacterial DNA InfectoPrep All Ages	295	DNA-PrecipAid	304
Agarose Low Melt 4	72	Cesium chloride 99.999 % Molecular biology grade	192	Bacterial DNA InfectoPrep Blood Culture	295	DNA pUC19 Plasmid	304
Agarose Low Melt Large DNA grade	72	Cetyltrimethylammonium bromide Molecular biology grade	194	Bacterial DNA InfectoPrep Pediatric	295	DNase I	305
Agarose IMG	73	Cheluminat-HRP PicoDetect	197	Blood AC	295	DTT Molecular biology grade	310
Agarose MP	73	Cheluminat-HRP PicoDetect Extended	198	RBC Lysis Solution	296	DTT - Solution (1 M) Molecular biology grade	310
Albumin Fraction V (pH 7.0) Biotin-ting grade	76	Cheluminat-HRP FemtoDetect Plus	198	DNA Blood Isolation Spin-Kit	296	EDTA Molecular biology grade	313
Alkaline Lysis - Solution III	81	CheLuminat-HRP ELISA FemtoDetect Plus	199	DNA Enzyme-free Isolation Spin-Kit	296	EDTA disodium salt dihydrate Molecular biology grade	314
Ammonia - Solution 25 % DNA synthesis grade	91	CHES Molecular biology grade	199	DNA Isolation Kit	296	EDTA - Solution pH 8.0 (0.5 M) Molecular biology grade	316
Ammonium acetate Molecular biology grade	93	Chloramphenicol Molecular biology grade	201	DNA Isolation Spin-Kit Agarose Low Melt AX	297	EGTA Molecular biology grade	318
Ammonium acetate - Lösung (7.5 M) Molecular biology grade	93	Chloroform : Isoamyl alcohol 24 : 1 <i>BioChemica</i>	206	DNA Swab Isolation Spin-Kit	297	DNA Ladder 100 bp (lyophilised)	319
Ammonium acetate - Solution (5 M) Molecular biology grade	93	Chloroform : Isoamyl alcohol 49 : 1 <i>BioChemica</i>	206	Plas/mini Isolation Spin-Kit	297	DNA Ladder 100 bp	320
Ammonium chloride Molecular biology grade	94	Citric acid anhydrous powdered Molecular biology grade	213	Plas/mini Isolation Spin-Kit XL	298	DNA Ladder 100 bp equalized (lyophilised)	320
Ammonium persulfate Molecular biology grade	102	Citric acid monohydrate Molecular biology grade	214	DNA - Isolation reagent for genomic DNA	298	DNA Ladder 100 bp plus	320
Ammonium sulfate Molecular biology grade	103	Coelenterazine H <i>BioChemica</i>	220	Geno/mini DNA Isolation Spin-Kit	298	DNA Ladder Mix 100 - 5000 (lyophilised)	320
Amphotericin B pure Ph. Eur.	107	Cresol red Molecular biology grade	247	Geno/mini AX <i>Bacteria</i> DNA Isolation Spin-Kit	299	DNA Ladder 250 bp (lyophilised)	321
Ampicillin trihydrate Molecular biology grade	108	CTAB - Lysis buffer <i>BioChemica</i>	248			DNA Ladder 250 bp plus (lyophilised)	321

Molecular Biology Grade Reagents

Description	Page	Description	Page	Description	Page	Description	Page
DNA Marker quick-run extended (lyophilised)	322	Blocking Buffer III BSA	448	Easy Hot Start PCR Kit	597	Ribonuclease Inhibitor, recombinant	687
DNA Marker pBR322 - <i>Hae</i> III (lyophilised)	322	IPTG Molecular Biology grade	458	PCR Kit, DNA-free	597	Total RNA Mini SI Isolation Spin-Kit	689
DNA Marker pBR322 - <i>Hae</i> III	323	Isoamyl alcohol Molecular biology grade	463	qPCR Kit, DNA-free	597	Total RNA Midi SI Isolation Spin-Kit	689
DNA Marker pBR328 Mix (lyophilised)	323	D(+)-Lactose monohydrate Molecular biology grade	478	PCR Mycoplasma Test Kit	598	Total RNA Maxi SI Isolation Spin-Kit	689
DNA Marker Phage Lambda - <i>Sty</i> I	323	N-Lauroylsarcosine sodium salt Molecular biology grade	480	PCR Mycoplasma Test Kit II	598	RNase A (DNase-free)	689
DNA Marker Phage Lambda - <i>Bst</i> E II (lyophilised)	323	LB-Agar - Powder according to Lennox	481	PCR Pack Tube Kit	599	RNase A	690
DNA Marker Phage Lambda - <i>Bst</i> E II	323	LB-Medium - Powder according to Lennox	482	RT-PCR buffer, one-step reaction	599	RNase T	690
DNA Marker Phage Lambda - <i>Hind</i> III (lyophilised)	324	Lithium chloride Molecular biology grade	492	Phenol crystalline Molecular biology grade	612	RNase-ExitusPlus™	691
DNA Marker Phage Lambda - <i>Hind</i> III	324	Loading buffer DNA II b	494	Phenol water-saturated, non-stabilized	613	Salmon sperm DNA sodium salt (sonified)	701
DNA Marker pUC19 - <i>Msp</i> I (lyophilised)	324	LPS buffer Molecular biology grade	496	Phenol water-saturated, stabilized	613	Salmon sperm DNA sodium salt	701
DNA Marker pUC19 - <i>Msp</i> I	324	Lysozyme Molecular Biology grade	500	Phenol water-saturated, non-stabilized + separate Tris - Solution (A2492)	613	SDS Molecular biology grade	705
Protein Marker I (14 - 116)	325	Magnesium acetate tetrahydrate Molecular biology grade	502	Phenol water-saturated, stabilized + separate Tris - Solution (A2492)	614	SDS - Solution 20 % Molecular biology grade	706
Protein Marker II (6.5 - 200) pre-stained	325	Magnesium acetate - Solution (1 M) Molecular biology grade	503	Phenol water-saturated, non-stabilized + separate TLE buffer (A4573)	614	SDS - Solution 10 % Molecular biology grade	706
Protein Marker III (6.5 - 200)	325	Magnesium chloride hexahydrate Molecular biology grade	503	Phenol equilibrated, non-stabilized	614	Silver nitrate Molecular biology grade	713
Protein Marker IV (10 - 150)	325	Magnesium chloride solution (1 M) Molecular Biology grade	504	Phenol equilibrated, stabilized	615	Sodium acetate - Solution (3 M, pH 5.2) Molecular biology grade	721
Protein Marker V (10 - 175) pre-stained	325	Magnesium chloride - Solution (100 mM) Molecular biology grade	504	Phenol extracted with 0.1 M citrate buffer	615	Sodium acetate - Solution 3 M (pH 7.0) Molecular biology grade	721
Protein Marker VI (10 - 245) pre-stained	325	Magnesium chloride - Solution (50 mM) Molecular biology grade	504	Phenol equilibrated with TE (1X) + separate Equilibration buffer (A2492)	615	Sodium chloride Molecular biology grade	726
Ethanol absolute Molecular biology grade	332	Magnesium chloride - Solution (25 mM) Molecular biology grade	504	Phenol equilibrated, non-stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	615	Sodium chloride - Solution (5 M) Molecular biology grade	727
Ethidium bromide BioChemica	338	Magnesium chloride - Solution (100 mM), DNA free	504	Phenol equilibrated, stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	Sodium dihydrogen phosphate dihydrate Molecular biology grade	730
Ethidium bromide - Solution 1 % BioChemica	338	Magnesium sulfate heptahydrate Molecular biology grade	507	Phenol stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	Sodium dihydrogen phosphate monohydrate Molecular biology grade	731
Ethidium bromide - Solution 0.07 % "dropper-bottle"	338	Magnesium sulfate - Solution (25 mM) Molecular biology grade	508	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	di-Sodium hydrogen phosphate anhydrous Molecular biology grade	735
Ficoll® 400 Molecular Biology grade	350	Manganese(II) acetate - Solution (25 mM) Molecular biology grade	513	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	di-Sodium hydrogen phosphate dihydrate Molecular biology grade	735
First Strand cDNA Synthesis-Kit for RT-PCR	351	Manganese(II) chloride - Solution (25 mM) Molecular biology grade	514	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)	616	Sodium hydroxide pellets Molecular biology grade	737
Formaldehyde - Solution 37 % Molecular biology grade	355	maxXbond™	517	Phenol stab. : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)	616	Sodium hydroxide - Solution (1 M) Molecular biology grade	742
Formamide deionized Molecular biology grade	358	maxXbond™ AX	517	Phenol extracted with citrate buffer : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	Sodium perchlorate monohydrate Molecular biology grade	749
D(+)-Glucose anhydrous Molecular biology grade	377	maxXmore™ Mini	518	Phenol red Molecular biology grade	618	Sodium perchlorate - Solution (5 M) Molecular biology grade	749
D(+)-Glucose monohydrate Molecular biology grade	377	maxXmore™ AX Midi	518	PIPES Molecular biology grade	628	Sodium sulfate anhydrous powdered Molecular biology grade	751
Glycerol anhydrous Molecular biology grade	383	maxXmore™ AX Maxi	518	Polyethylene glycol 6000 Molecular biology grade	631	D(-)-Sorbitol Molecular biology grade	758
Glycerol 87 % Molecular biology grade	385	maxXmore™ AX Mega	518	Polyvinylpyrrolidone (K90) Molecular biology grade	634	SSC buffer (20X) Molecular biology grade	761
Glycine Molecular biology grade	386	maxXmore™ AX Giga	519	Potassium acetate Molecular biology grade	635	SSC buffer (20X) - Powder Molecular biology grade	761
Glyoxal - Solution 40 % Molecular biology grade	388	β-Mercaptoethanol Molecular biology grade	529	Potassium chloride Molecular biology grade	638	SSC buffer (5X) with 1 % SDS Molecular biology grade	761
Guanidine hydrochloride Molecular biology grade	392	MES anhydrous Molecular biology grade	531	Potassium chloride - Solution (3 M) Molecular biology grade	639	SSPE buffer (20X) Molecular biology grade	761
Guanidine thiocyanate Molecular biology grade	393	MES monohydrate Molecular Biology grade	531	Potassium dihydrogen phosphate Molecular biology grade	642	TAE buffer (50X) Molecular biology grade	791
Guanidine thiocyanate - Solution (6 M in 0.1 M Tris; pH 7.5) Molecular biology grade	393	MES sodium salt Molecular biology grade	532	di-Potassium hydrogen phosphate anhydrous Molecular biology grade	646	TAE buffer (10X) Molecular biology grade	791
Guanidine thiocyanate - Solution (4 M in 0.1 M Tris; pH 7.5) Molecular biology grade	393	MOPS Molecular biology grade	549	2-Propanol Molecular biology grade	666	Taq DNA Polymerase DNA-free	793
HEPES Molecular biology grade	401	Neutralizing - Solution Molecular biology grade	564	Proteinase K	674	Taq DNA Polymerase Reaction buffer (10X) complete	794
HEPES sodium salt Molecular biology grade	402	Oxidation - Solution DNA synthesis grade	589	Proteinase K - Solution	674	Taq DNA Polymerase Reaction buffer (10X) incomplete	794
Hybridization Solution	410	Paraffin oil light Molecular biology grade	591	Random Primer DNA Labeling Mix	682	SuperHot Taq Master Mix "Hot-Start"	795
Hydrochloric acid (1 M) Molecular biology grade	416	PCR Blunt Cloning Kit	595	Reverse transcription buffer (10X)	686	Anti-Taq DNA Polymerase, monoclonal antibody	795
Imidazole Molecular biology grade	445	PCR-InfectoDetect Mix DNA-free, 16S Primer	596				
Blocking Buffer I	447	PCR-InfectoDetect Mix DNA-free, all inclusive	596				
Blocking Buffer II EGrade	447	PCR-InfectoDetect Mix DNA-free, Basic	596				
		Easy PCR Kit	597				

Molecular Biology Grade Reagents

Description	Page	Description	Page	Description	Page	Description	Page
TBE buffer (10X) Molecular biology grade	797	Tris buffer pH 7.0 (1 M) Molecular biology grade	836	Tris buffer pH 8.8 (1 M) Molecular biology grade	837	Water, PCR tested, DNA free	857
TBE buffer (5X) Molecular biology grade	797	Tris buffer pH 7.4 (1 M) Molecular biology grade	836	Tris hydrochloride Molecular biology grade	837	Water Molecular biology grade	857
TE buffer (1X) pH 8.0 Molecular biology grade	800	Tris buffer pH 7.5 (1 M) Molecular biology grade	836	Triton® X-100 Molecular Biology grade	840	Water DNA synthesis and protein sequencing grade	857
Tetramethylammonium chloride - Solution (approx. 6 M) Molecular biology grade	808	Tris buffer pH 7.6 (1 M) Molecular biology grade	836	7th PCR buffer (10X)	845	X-Gal Molecular Biology grade	868
Ti Inorganic Pyrophosphatase	819	Tris buffer pH 8.0 (1 M) Molecular biology grade	836	Tween® 20 Molecular biology grade	846	Xylene cyanol FF (C.I. 42135) Molecular Biology grade	872
Tricine Molecular biology grade	831	Tris buffer pH 8.4 (1 M) Molecular biology grade	837	Urea Molecular biology grade	850	Yeast extract Molecular biology grade	873
Tris Molecular biology grade	835			Urea crystalline Molecular biology grade	850	Zinc chloride Molecular biology grade	875

Natural substances standards

Description	Page	Description	Page	Description	Page	Description	Page
Acacetin HPLC grade	38	Cichoric acid HPLC grade	212	Glucotropaeolin HPLC grade	379	Manassantin A HPLC grade	513
Acetoxyl valeric acid HPLC grade	47	Cnicin HPLC grade	218	Gossypin HPLC grade	390	Manassantin B HPLC grade	513
6-O-Acetylacteoside HPLC grade	47	Coptisin HPLC grade	245	Hamamelitannin HPLC grade	397	Myricitrin HPLC grade	556
3-Acetyl- α -boswellic acid HPLC grade	47	Curcumin HPLC grade	248	Hamamelitannin pure	397	Naringenin HPLC grade	562
3-Acetyl- β -boswellic acid HPLC grade	48	Cyanidin chloride HPLC grade	249	Harpagide HPLC grade	398	Naringin HPLC grade	562
3-Acetyl-11-keto- β -boswellic acid HPLC grade	48	Cyanidin-3-rutinoside HPLC grade	249	Harpagoside HPLC grade	398	Oenin chloride HPLC grade	582
Actein HPLC grade	66	Cyanin chloride HPLC grade	249	Hederacoside C HPLC grade	399	Oenin chloride pure	582
Acteoside HPLC grade	66	Cyanin chloride pure	249	Hederacoside C pure	399	Oleuropein HPLC grade	584
Agnusid HPLC grade	73	Cynarin HPLC grade	254	Hederagenin HPLC grade	399	Oleuropein pure	584
Aloe-Emodin synthetic HPLC grade	82	Cytisine HPLC grade	256	α -Hederin HPLC grade	400	Orientin HPLC grade	586
Aloenin A HPLC grade	82	Delphinidin-3-galactoside chloride HPLC grade	261	Hesperetin HPLC grade	405	Pectolinarigenin HPLC grade	600
Apigenin HPLC Grade	112	Delphinidin-3-glucoside chloride HPLC grade	262	Hesperidin HPLC grade	405	Pectolinarin HPLC grade	601
Apigenin pure	112	Delphinidin-3-rutinoside HPLC grade	262	Homoorientin HPLC grade	410	Picrosid II HPLC grade	627
Apigenin-7-glucoside HPLC grade	113	27-Deoxyactein HPLC grade	263	Hydroxytyrosol HPLC grade	428	Primin HPLC grade	662
Apigenin-7-glucoside pure	113	Echinacosid HPLC grade	312	Hyperforin dicyclohexyl ammonium salt pure	430	Primulaverin HPLC grade	662
Apiin HPLC grade	113	Elenol acid glucoside HPLC grade	326	Hypericin HPLC grade	430	Primverin HPLC grade	663
Aristolochic acid I HPLC grade	118	Eleutheroside B HPLC grade	326	Hypericin sodium salt HPLC grade	430	Progoitrin HPLC grade	663
Aristolochic acid I pure	118	Eleutheroside E HPLC grade	326	Hyperosid HPLC grade	431	Pseudohypericin HPLC grade	676
Aristolochic acid II HPLC grade	119	Emodin HPLC grade	326	Hyperosid pure	431	Quercetin HPLC grade	680
Aristolochic acid II pure	119	Englerin A	327	Isoacteosid HPLC grade	462	Quercitrin HPLC grade	680
Aristolochic acid - Mixture of I and II	119	(-)-Epicatechin HPLC grade	329	Isoquercitrin HPLC grade	466	Retrorsin HPLC grade	685
Aristolochic acid sodium salt	119	(-)-Epicatechin gallate HPLC grade	329	Isoquercitrin pure	466	Retrorsin-N-oxide HPLC grade	685
Aucubin HPLC grade	122	(-)-Epigallocatechin HPLC grade	329	Isorhamnetin HPLC grade	466	Rhein HPLC grade	686
Azadirachtin	123	(-)-Epigallocatechin gallate HPLC grade	330	Isovitexin HPLC grade	466	Rhein pure	686
Baicalin HPLC grade	125	(-)-Epigallocatechin gallate pure	330	Isoxanthohumol HPLC grade	466	Rosmarinic acid HPLC grade	692
Baicalin HPLC grade	126	Frangulin A HPLC grade	363	Kaempferol HPLC grade	468	Rutin HPLC grade	694
Bergamottin HPLC grade	136	Frangulin B HPLC grade	363	Kaempferol 97 % pure	468	Saponarin HPLC grade	702
Betulin HPLC grade	137	Frangulin (A : B approx. 1 : 4)	363	Kaempferol-3-glucoside HPLC grade	469	Senecionin HPLC grade	708
Betulinic acid HPLC grade	137	(-)-Gallocatechin HPLC grade	368	Kaempferol-3-glucoside 97 % pure	469	Senecionin-N-oxide HPLC grade	708
Bilobalid HPLC grade	139	[6]-Gingerol HPLC grade	373	11-Keto- β -boswellic acid HPLC grade	470	Seneciphyllin HPLC grade	708
α -Boswellic acid HPLC grade	155	[8]-Gingerol HPLC grade	373	Kuromanin chloride HPLC grade	474	Seneciphyllin-N-oxide HPLC grade	709
β -Boswellic acid HPLC grade	156	Ginkgolides HN pure	373	Lanatosid C HPLC grade	479	Senkirkin HPLC grade	709
Caftaric acid HPLC grade	176	Ginkgolide A HPLC grade	374	Leiocarposid HPLC grade	484	Sennosid A HPLC grade	709
Casticin HPLC grade	187	Ginkgolide B HPLC grade	374	Linarin HPLC grade	489	Sennosid B HPLC grade	709
Catalpol HPLC grade	187	Ginkgolide C HPLC grade	374	Lutein pure	498	Silybin HPLC grade	718
(-)-Catechin HPLC grade	188	Glucobassicin HPLC grade	375	Luteolin HPLC grade	498	Sinalbin HPLC grade	718
(+)-Catechin HPLC grade	188	Glucocericin HPLC grade	376	Luteolin-7-glucoside HPLC grade	498	Sinensetin HPLC grade	718
Cephalexine dihydrobromide HPLC grade	191	Glucioberin HPLC grade	376	Lycopin HPLC grade	498	Sinigrin monohydrate HPLC grade	719
Chelidoniin HPLC grade	196	Glucopapin HPLC grade	376	Malvidin chloride HPLC grade	512	Sinigrin monohydrate pure	719
		Glucopasturitiin HPLC grade	376	Malvinchlorid HPLC grade	512	α -Solanein HPLC grade	757
				Malvin chloride pure	513	Spiraeoside HPLC grade	760
						(+)-Taxifolin HPLC grade	796

Natural substances standards

Description	Page	Description	Page	Description	Page	Description	Page
(+)-Taxifolin pure	796	Ursolic acid HPLC grade	852	Vitexin-2''-O-rhamnoside HPLC grade	857	Wogonosid HPLC grade	866
Trifolirhizin HPLC grade	834	Valerenic acid HPLC grade	852	Wogonin HPLC grade	866	Xanthohumol HPLC grade	868
Umckalin HPLC grade	848	Vitexin HPLC grade	857				

New Products

Description	Page	Description	Page	Description	Page	Description	Page
Acetonitril LC-MS grade	46	Colorada 800 A - Amine	224	Colorada 577 N - Iodoacetamide	232	Delphinidin-3-glucoside chloride HPLC grade	262
3-Acetyldeoxynivalenol	49	Colorada 770 C - Triazine	224	Colorada 577 N - Amine	232	Delphinidin-3-rutinoside HPLC grade	262
rHu Activin A	67	Colorada 770 C - Acid	224	Colorada 570 L5H N - Acid	233	Derma-ExitusPlus™	269
Agarose Basic	71	Colorada 770 C - NHS ester	224	Colorada 570 L5H N - PDA	233	DextraSEC NA2	270
rHu Angiogenin-1 bioconfident grade	110	Colorada 770 C - Amine	225	Colorada 570 L5H N - NHS ester	233	DextraSEC NA10	271
AppliFect	114	Colorada 770 A - Triazine	225	Colorada 570 L5H N - Azide	233	DextraSEC PRO2	271
AppliFect Insect	115	Colorada 770 A - Acid	225	Colorada 555 N - Acid	234	DextraSEC PRO10	271
AppliFect LowTox	115	Colorada 770 A - NHS	225	Colorada 555 N - NHS ester	234	DextraSEC 96W	271
AppliFect SI	115	Colorada 690 LSS Z - NHS ester	225	Colorada 555 N - Azide	234	Diacetoxyscirpenol BioChemica	272
AppliXchange-G25 M	116	Colorada 678 Z - Acid	226	Colorada 555 N - PDA	234	4-Dimethylaminobenzaldehyde Reag. Ph. Eur.	283
rHu BAFF	125	Colorada 678 Z - Azide	226	Colorada 550 Z - Acid	234	rHu DKK-1	291
rHu BDNF	130	Colorada 678 Z - Amine	226	Colorada 550 Z - PDA	235	n-Dodecyl-α-maltoside BioChemica	306
Benzalkonium chloride NF	131	Colorada 678 C - Acid	226	Colorada 550 Z - Iodoacetamide	235	rHu EGF	317
Benzoic acid grained pure Ph. Eur. USP	133	Colorada 678 C - PDA	226	Colorada 550 Z - Azide	235	rM EGF	318
rHu BMP-2	153	Colorada 678 C - Diacid	226	Colorada 550 Z - Amine	235	rHu EG-VEGF	318
rHu BMP-4	153	Colorada 678 A - Acid	227	Colorada 550 C - Acid	235	Elastase Inhibitor I	319
Boc-Ala-Pro-Phe-NHO-Bz	153	Colorada 670 LSS Z - NHS ester	227	Colorada 550 C - PDA	235	DNA Ladder 250 bp plus (lyophilised)	321
Boc-Pro-Phe-NHO-Bz-p-Cl	153	Colorada 645 Z - Acid	227	Colorada 550 C - Iodoacetamide	236	Protein Marker V (10 - 175) pre-stained	325
Cathepsin Inhibitor I	188	Colorada 645 Z - PDA	227	Colorada 550 C - Amine	236	Protein Marker VI (10 - 245) pre-stained	325
Cathepsin Inhibitor II	189	Colorada 645 Z - Iodoacetamide	227	Colorada 550 A - Acid	236	rHu EMAP-2 bioconfident grade	326
Cathepsin Inhibitor III	189	Colorada 645 Z - Amine	228	Colorada 550 A - PDA	236	Englerin A	327
Cathepsin/Subtilisin Inhibitor	189	Colorada 645 XT A - Acid	228	Colorada 550 A - Iodoacetamide	236	Erioglaucine (C.I.42090)	330
rHu CD40-L	189	Colorada 645 XT A - NHS ester	228	Colorada 550 A - Amine	236	Esbach reagent	331
rM CD40-L	190	Colorada XT 645 C - NHS ester	228	Colorada 530 L5H N - PDA	237	Ethyl acetate LC-MS grade	339
Cell Proliferation Kit XTT	190	Colorada 645 C - Acid	228	Colorada 530 L5H N - NHS ester	237	1-Ethyl-2-pyrrolidone for synthesis	343
AC-Cell Xeno-free Medium Immunology grade	190	Colorada 645 C - PDA	229	Colorada 530 L5H N - Azide	237	Etzold's staining solution	343
Cephaeline dihydrobromide HPLC grade	191	Colorada 645 C - di-Acid	229	Colorada 530 L5H N - Acid	237	rHu aFGF bioconfident grade	347
Cheluminate-HRP ELISA Femto-Detect Plus	199	Colorada 645 A - Acid	229	Colorada 515 L5H N - Acid	238	rHu aFGF	347
Chlorhexidine diacetate pure Ph. Eur.	202	Colorada 645 A - PDA	229	Colorada 515 L5H N - PDA	238	rM aFGF	348
AC-CHO adh SFM Base	207	Colorada 645 A - Iodoacetamide	229	Colorada 515 L5H N - NHS ester	238	rHu bFGF bioconfident grade	348
AC-CHO supp (100X)	207	Colorada 645 A - Azide	229	Colorada 515 L5H N - Azide	238	rHu bFGF (147)	348
AC-CHO sus SFM Base	208	Colorada 645 A - Amine	229	Colorada 515 L5H N - Amine	238	rHu bFGF (154)	348
Citreoiviridin BioChemica	213	Colorada 630 N L5H - Acid	230	Colorada 500 L5H N - Acid	239	rHu bFGF (155)	349
rHu CNTF	218	Colorada 630 N L5H - NHS ester	230	Colorada 500 L5H N - PDA	239	rHu FGF (21)	349
Colorada 830 C - Triazine	222	Colorada 630 N L5H - Azide	230	Colorada 500 L5H N - NHS ester	239	rM bFGF	349
Colorada 830 C - Acid	222	Colorada 630 L5H N - PDA	230	Colorada 515 L5H N - Azide	239	Fibronectin - Solution Cell culture grade	350
Colorada 830 C - NHS ester	222	Colorada 600 L5H N - Acid	230	Colorada 500 L5H N - Amine	239	FK506 BioChemica	351
Colorada 830 A - Triazine	222	Colorada 600 L5H N - PDA	230	Colorada 425 N - NHS ester	240	Florisil® for chromatography 60-100 mesh	352
Colorada 830 A - NHS ester	223	Colorada 600 L5H N - NHS ester	231	Colorada 425 N - Iodoacetamide	240	rHu FLT-3 L bioconfident grade	352
Colorada 830 A - Amine	223	Colorada 600 L5H N - Azide	231	Colorada 425 N - Amine	240	rHu FLT-3 L	352
Colorada 800 C - Triazine	223	Colorada 580 N - Acid	231	rHu CTGF	248	rM FLT-3 L	352
Colorada 800 C - Acid	223	Colorada 580 N - PDA	231	Cyanidin chloride HPLC grade	249	Free Media - DMSO	363
Colorada 800 C - NHS	223	Colorada 580 N - NHS ester	231	Cyanidin-3-rutinoside HPLC grade	249	D(+)-Galactose BioChemica, non animal origin	367
Colorada 800 C - Amine	223	Colorada 580 N - Azide	232	Cytisine HPLC grade	256	rHu Galectin-1	368
Colorada 800 A - Triazine	224	Colorada 577 N - PEO-PFP	232	Dansyl fluoride BioChemica	259		
Colorada 800 A - NHS ester	224	Colorada 577 N - PEO Acid	232	Delphinidin-3-galactoside chloride HPLC grade	261		
		Colorada 577 N - PEO Amine	232				

New Products

Description	Page	Description	Page	Description	Page	Description	Page
rHu G-CSF bioconfident grade	369	rM IL-6	438	rM MCP-3	521	Phloxine B (C.I. 45410) Micro-scopy grade	622
rHu G-CSF	369	rHu IL-7 bioconfident grade	438	rHu MCP-4	521	PKC412 <i>BioChemica</i>	629
rM G-CSF	369	rHu IL-7	438	rHu M-CSF bioconfident grade	521	Polyethylenglycol 600 pure Ph. Eur.	631
rHu GDF-5	369	rM IL-7	438	rHu M-CSF	522	Potassium hydroxide - Solution 20 % p.A.	649
rHu GDNF bioconfident grade	370	rHu IL-9 bioconfident grade	439	rM M-CSF	522	Progoitrin HPLC grade	663
rHu GDNF	370	rM IL-9	439	AC-Media hi	522	rHu Prolactin bioconfident grade	663
Glucobrassicin HPLC grade	375	rHu IL-10	439	AC-Media mid	522	All-trans-4-(4'-Propyl)bicyclohex-yl- α -maltoside <i>BioChemica</i>	670
Glucocerucin HPLC grade	376	rM IL-10	439	AC-Media lo	522	Pyridoxine hydrochloride pure Ph. Eur., USP	678
Glucoboerin HPLC grade	376	rHu IL-11	439	Methanol LC-MS grade	533	Rakoff staining solution for micro-scopy	681
Glucanapin HPLC grade	376	rHu IL-12	440	rHu MIF	544	rHu RANKL bioconfident grade	682
Gluconasturtiin HPLC grade	376	rHu IL-13	440	rHu MIP-1 α bioconfident grade	545	rHu RANKL	682
rHu GM-CSF	389	rHu IL-15	440	rHu MIP-1 α	545	rM RANKL	683
rM GM-CSF bioconfident grade	389	rM IL-15	440	rHu MIP-1 β	545	rHu RANTES	683
rM GM-CSF	389	rHu IL-16 bioconfident grade	440	rM MIP-1 β	545	rM RANTES	683
Griess-Ilsoyay's Nitrite Reagent	390	rHu IL-16	441	rHu MIP-1 β	545	Resazurin sodium salt	684
rHu GRO- β	391	rM IL-16	441	rHu MIP-3 α	546	Resiniferatoxin <i>BioChemica</i>	684
AC-GROW hi (50X)	391	rHu IL-17A	441	rM MIP-3 α	546	Retrorsin-N-oxide HPLC grade	685
AC-GROW lo (50X)	391	rR IL-17A	441	rHu MIP-3 β	546	Rosolic acid (C.I. 43800)	692
Haines reagent	395	rHu IL-17E	442	rHu MIP-4	546	SafetyFirst Cap 1 (GL45)	695
rHu HB-EGF bioconfident grade	398	rR IL-17E	442	Mowiol® 4-88 Histology grade	550	SafetyFirst Cap 1 (GL45) with shut-off	695
Hederacosid C pure	399	rHu IL-17F	442	AC-MultiCell	553	SafetyFirst Cap 2 (GL45)	695
HEPES hemisodium salt Buffer grade	402	rHu IL-19	442	Mycoc-1 & 2 Set	553	SafetyFirst Cap 3 (GL45)	696
rHu HGF	408	rHu IL-20 bioconfident grade	443	Mycoc-4	554	SafetyFirst Cap 3 (GL45) each with shut-off	696
Hydrochloric acid R1 Ph. Eur.	413	rHu IL-20	443	rHu Myostatin	555	SafetyFirst Cap 4 (GL45)	696
Hydrochloric acid 18.5 % for regeneration of desalination equipment	414	rHu IL-21	443	rHu Myostatin-P	556	SafetyFirst Cap for waste container (GL45)	697
Hydrocortisone <i>BioChemica</i>	420	rHu IL-22 bioconfident grade	443	Myricitrin HPLC grade	556	SafetyFirst Cap for waste container (GL45)	697
Hydroiodic acid 57 % pure	424	rHu IL-22	444	Neosolaniol <i>BioChemica</i>	563	SafetyFirst Cap for waste container (GL45)	697
Hyperforin dicyclohexyl ammonium salt pure	430	rM IL-27 (p28)	444	rHu NGF- β	564	SafetyFirst Adapter PE (S60/61 to 2")	698
Hypoxanthine sodium salt <i>BioChemica</i>	432	rHu IL-32 α	444	rM NGF- β	564	SafetyFirst Adapter PP (GL45/GL40)	698
rHu IFN- α -2a bioconfident grade	432	rHu IL-33	444	rHu NRG-1 bioconfident grade	578	SafetyFirst Adapter PP (GL45/S55)	698
rHu IFN- γ bioconfident grade	432	CrossDown Peroxidase-Stabilizer	449	rHu NRG-1	578	SafetyFirst Adapter PTFE (GL45/GL40)	698
rHu IFN- γ	432	Peroxidase-Stabilizer	449	rHu NT-3	578	SafetyFirst Charcoal Filter M medium (48 g)	698
rM IFN- γ	433	AC-INSECT	453	Nuclear fast red (C.I. 60760) Microscopy grade	579	SafetyFirst Charcoal Filter M (48 g) Special Value Pack	699
rR IFN- γ	433	rHu Insulin	453	Oenin chloride HPLC grade	582	SafetyFirst Air valve	699
rHu IGF-1	433	Insulin crystalline - porcine	453	Oenin chloride pure	582	SafetyFirst Screw for closing non used connectors	699
rM IGF-1	433	rM IP-10	458	rac.-1-Oleoyl-glycerol <i>BioChemica</i>	584	SafetyFirst PTFE ferrules 1.6 mm ID	699
rR IGF-1	434	IPTG from plant origin galactose	459	rHu OSM	587	SafetyFirst PTFE ferrules 2.3 mm ID	699
rHu IGF-2	434	Jenner's stain	467	Patent Blue V Calcium salt (C.I. 45051)	593	SafetyFirst PTFE ferrules 3.2 mm ID	699
rHu IL-1a bioconfident grade	434	rHu KGF bioconfident grade	471	PCR Kit, DNA-free	597	SafetyFirst Fittings (PP) Standard	699
rHu IL-1b	434	Lactose peptone broth, DEV	478	qPCR Kit, DNA-free	597	SafetyFirst PTFE fitting with integrated ferrule	699
rM IL-1b	434	Lanatosid C HPLC grade	479	PCR Mycoplasma Test Kit II	598	SafetyFirst Funnel (S55) with stainless steel sieve	700
rHu IL-2 bioconfident grade	435	rHu Leptin	485	qPCR Mycoplasma Test Kit	598		
rHu IL-2	435	rM Leptin	485	rHu PDGF-AA	599		
rM IL-2	435	rR Leptin	486	rM PDGF-AA	600		
rHu IL-3 bioconfident grade	435	rHu LIF bioconfident grade	488	rHu PDGF-AB	600		
rHu IL-3	435	rM LIF bioconfident grade	489	rHu PDGF-BB bioconfident grade	600		
rM IL-3	436	Linarin HPLC grade	489	rHu PDGF-BB	600		
rHu IL-4 bioconfident grade	436	Magnesium chloride - Solution (100 mM), DNA free	504	Pectolarigenin HPLC grade	600		
rHu IL-4	436	L-(+)-Malic acid pure	510	Pectolarin HPLC grade	601		
rM IL-4	436	Malvidin chloride HPLC grade	512	Penicillin - Streptomycin (100X) Cell culture grade	602		
rHu IL-5 bioconfident grade	437	Malvinchlorid HPLC grade	512	p-Phenylenediamine dihydrochloride <i>BioChemica</i>	621		
rHu IL-5	437	Manassantin A HPLC grade	513	pH-Fix 0-14 Indicator Strips	621		
rHu IL-6 bioconfident grade	437	Manassantin B HPLC grade	513	pH-Fix 0-6 Indicator Strips	621		
rHu IL-6	437	rHu MCP-1	520	pH-Fix 7-14 Indicator Strips	621		
		rHu MCP-2	521				
		rHu MCP-3	521				

New Products

Description	Page	Description	Page	Description	Page	Description	Page
SafetyFirst Funnel with valve	700	Sinalbin HPLC grade	718	rHu TNF- α	819	rHu VEGF-121 bioconfident grade	854
rHu SCF bioconfident grade	703	Sinensetin HPLC grade	718	rM TNF- α	820	rHu VEGF (121)	854
rHu SCF	703	Subtilisin Inhibitor I	775	rR TNF- α	820	rHu VEGF-165 bioconfident grade	854
rM SCF bioconfident grade	703	Sulfanilic acid for synthesis	778	rHu TNF- β bioconfident grade	820	rHu VEGF (165)	855
rM SCF	704	TE buffer (10X) pH 8.0	800	rM TPO	824	Violet Red Bile Glucose Agar Ph.Eur.	855
rHu SDF-1 α	704	TE buffer (1X) pH 8.0 low EDTA Molecular biology grade	801	apo-Transferrin, bovine	828	Vitamin B ₁₂ pure Ph. Eur.	856
rM SDF-1 α	705	Tentoxin <i>BioChemica</i>	801	holo-Transferrin, bovine	828	Water, PCR tested, DNA free	857
SDS grained pure	706	Tetrahydrofuran LC-MS grade	806	Tributyrin <i>BioChemica</i>	828	Water LC-MS grade	858
Senecionin-N-oxide HPLC grade	708	rHu TGF- β 3	810	AC-Trypsin - Solution Cell culture grade	842	Withaferin A <i>BioChemica</i>	866
Seneciophyllin-N-oxide HPLC grade	709	Thiamine hydrochloride pure Ph. Eur.	811	AC-Trypsin Inhibitor from Soybean (50X) Cell culture grade	843	Wogonin HPLC grade	866
SeparateIT Polymer Solution	709	Thiostrepton <i>BioChemica</i>	813	Tuerk's Reagent	846	Wogonosid HPLC grade	866
rHu SF20 bioconfident grade	710	rHu TNF- α bioconfident grade	819	Urea crystalline Molecular biology grade	850	Yeast extract Broth	874
rM SHH	711					Z-Gly-Phe-NHO-Bz	874

Nucleic acid dyes

Description	Page	Description	Page	Description	Page	Description	Page
Acridine orange (C.I. 46005)	51	DAPI Molecular biology grade	259	Ethidium bromide - Solution 1 % <i>BioChemica</i>	338	Propidium iodide <i>BioChemica</i>	669
Azure B (C.I. 52010)	124	DAPI <i>BioChemica</i>	259	Ethidium bromide - Solution 0.07 % "dropper-bottle"	338	Pyronein Y (C.I. 45005)	679
Bisbenzimidazole H33258 <i>BioChemica</i>	145	Dimidium bromide <i>BioChemica</i>	288	Methyl green (C.I. 42590)	539	Silver nitrate Molecular biology grade	713
Bisbenzimidazole H33342 <i>BioChemica</i>	146	DNA-Dye Methylene blue	302	Mithramycin A	547	Stains all	762
Crystal violet (C.I. 42555)	247	Ethidium bromide <i>BioChemica</i>	338	Nile blue (C.I. 51180)	567	Toluidine blue (C.I. 52040)	823

Nucleic Acid Isolation Products

Description	Page	Description	Page	Description	Page	Description	Page
Bacterial DNA InfecToPrep Adult	294	DNA Swab Isolation Spin-Kit	297	Geno/mini AX Stool DNA Isolation Spin-Kit	299	maxXbond™	517
Bacterial DNA InfecToPrep All Ages	295	Plas/mini Isolation Spin-Kit	297	Geno/mini AX Tissue DNA Isolation Spin-Kit	300	maxXbond™ AX	517
Bacterial DNA InfecToPrep Blood Culture	295	Plas/mini Isolation Kit XL	298	Geno/mini AX Yeast DNA Isolation Spin-Kit	300	maxXmore™ Mini	518
Bacterial DNA InfecToPrep Pediatric	295	Plas/midi Isolation Spin-Kit	298	Geno/midi AX DNA Isolation Spin-Kit	300	maxXmore™ AX Midi	518
Blood AC	295	DNA - Isolation reagent for genomic DNA	298	Geno/maxi AX DNA Isolation Spin-Kit	300	maxXmore™ AX Maxi	518
RBC Lysis Solution	296	Geno/mini DNA Isolation Spin-Kit	298	Geno/miracle DNA Isolation Spin-Kit	301	maxXmore™ AX Mega	518
DNA Blood Isolation Spin-Kit	296	Geno/mini AX Bacteria DNA Isolation Spin-Kit	299	Plant AC	301	maxXmore™ AX Giga	519
DNA Enzyme-free Isolation Spin-Kit	296	Geno/mini AX Food DNA Isolation Spin-Kit	299	Terminator Removal Kit	301	Total RNA Mini SI Isolation Spin-Kit	689
DNA Isolation Kit	296	Geno/mini AX Plant DNA Isolation Spin-Kit	299	Terminator Removal 96-well Kit	301	Total RNA Midi SI Isolation Spin-Kit	689
DNA Isolation Spin-Kit Agarose	297			Virus DNA/RNA Isolation Spin-Kit	301	Total RNA Maxi SI Isolation Spin-Kit	689
DNA Isolation Spin-Kit Agarose Low Melt AX	297						

Nucleic acid- and Protein - Label

Description	Page	Description	Page	Description	Page	Description	Page
Colorada 830 C - Triazine	222	Colorada 800 A - Triazine	224	Colorada 770 A - Amine	225	Colorada 645 Z - Acid	227
Colorada 830 C - Acid	222	Colorada 800 A - NHS ester	224	Colorada 690 LSS Z - NHS ester	225	Colorada 645 Z - PDA	227
Colorada 830 C - NHS ester	222	Colorada 800 A - Amine	224	Colorada 678 Z - Acid	226	Colorada 645 Z - Iodoacetamide	227
Colorada 830 A - Triazine	222	Colorada 770 C - Triazine	224	Colorada 678 Z - Azide	226	Colorada 645 Z - Amine	228
Colorada 830 A - NHS ester	223	Colorada 770 C - Acid	224	Colorada 678 Z - Amine	226	Colorada 645 XT A - Acid	228
Colorada 830 A - Amine	223	Colorada 770 C - NHS ester	224	Colorada 678 C - Acid	226	Colorada 645 XT A - NHS ester	228
Colorada 800 C - Triazine	223	Colorada 770 C - Amine	225	Colorada 678 C - PDA	226	Colorada XT 645 C - NHS ester	228
Colorada 800 C - Acid	223	Colorada 770 A - Triazine	225	Colorada 678 C - Diacid	226	Colorada XT 645 C - Acid	228
Colorada 800 C - NHS	223	Colorada 770 A - Acid	225	Colorada 678 A - Acid	227	Colorada 645 C - Acid	228
Colorada 800 C - Amine	223	Colorada 770 A - NHS	225	Colorada 670 LSS Z - NHS ester	227	Colorada 645 C - PDA	229

Nucleic acid- and Protein - Label

Description	Page	Description	Page	Description	Page	Description	Page
Colorada 645 C - <i>di</i> -Acid	229	Colorada 580 N - NHS ester	231	Colorada 550 Z - Acid	234	Colorada 530 L5H N - Amine	237
Colorada 645 A - Acid	229	Colorada 580 N - Azide	232	Colorada 550 Z - PDA	235	Colorada 530 L5H N - Acid	237
Colorada 645 A - PDA	229	Colorada 577 N - PEO-PFP	232	Colorada 550 Z - Iodoacetamide	235	Colorada 515 L5H N - Acid	238
Colorada 645 A - Iodoacetamide	229	Colorada 577 N - PEO Acid	232	Colorada 550 Z - Azide	235	Colorada 515 L5H N - PDA	238
Colorada 645 A - Azide	229	Colorada 577 N - PEO Amine	232	Colorada 550 Z - Amine	235	Colorada 515 L5H N - NHS ester	238
Colorada 645 A - Amine	229	Colorada 577 N - Iodoacetamide	232	Colorada 550 C - Acid	235	Colorada 515 L5H N - Azide	238
Colorada 630 N L5H - Acid	230	Colorada 577 N - Amine	232	Colorada 550 C - PDA	235	Colorada 515 L5H N - Amine	238
Colorada 630 N L5H - NHS ester	230	Colorada 570 L5H N - Acid	233	Colorada 550 C - Iodoacetamide	236	Colorada 500 L5H N - Acid	239
Colorada 630 N L5H - Azide	230	Colorada 570 L5H N - PDA	233	Colorada 550 C - Amine	236	Colorada 500 L5H N - PDA	239
Colorada 630 L5H N - PDA	230	Colorada 570 L5H N - NHS ester	233	Colorada 550 A - Acid	236	Colorada 500 L5H N - NHS ester	239
Colorada 600 L5H N - Acid	230	Colorada 570 L5H N - Azide	233	Colorada 550 A - PDA	236	Colorada 500 L5H N - Azide	239
Colorada 600 L5H N - PDA	230	Colorada 570 L5H N - Amine	233	Colorada 550 A - Iodoacetamide	236	Colorada 500 L5H N - Amine	239
Colorada 600 L5H N - NHS ester	231	Colorada 555 N - Acid	234	Colorada 550 A - Amine	236	Colorada 425 N - Acid	240
Colorada 600 L5H N - Azide	231	Colorada 555 N - NHS ester	234	Colorada 530 L5H N - PDA	237	Colorada 425 N - NHS ester	240
Colorada 580 N - Acid	231	Colorada 555 N - Azide	234	Colorada 530 L5H N - NHS ester	237	Colorada 425 N - Iodoacetamide	240
Colorada 580 N - PDA	231	Colorada 555 N - PDA	234	Colorada 530 L5H N - Azide	237	Colorada 425 N - Amine	240

other BioChemica

Description	Page	Description	Page	Description	Page	Description	Page
Adonitol <i>BioChemica</i>	69	Colorada 425 N - NHS ester	240	Paraffin oil heavy white oil	591	Tetraethylammonium chloride	805
Alginic acid <i>BioChemica</i>	79	Creatine monohydrate <i>BioChemica</i>	246	Paraffin oil light "dropper bottle" PCR grade	591	Tetramethylammonium chloride (TMAC) <i>BioChemica</i>	808
Alginic acid sodium salt <i>BioChemica</i>	79	Dulcitol <i>BioChemica</i>	310	Spermidine <i>BioChemica</i>	759	3,3',5,5'-Tetramethylbenzidine <i>BioChemica</i>	808
Choline chloride <i>BioChemica</i>	209	EDC hydrochloride <i>BioChemica</i>	313	Spermidine trihydrochloride <i>BioChemica</i>	759	Trichloroacetic acid (TCA) <i>BioChemica</i>	829
Citric acid monohydrate Buffer grade	214	Hemin porcine	400	Spermine <i>BioChemica</i>	760		
L-Citrulline <i>BioChemica</i>	215	2-Hydroxypropyl- β -cyclodextrin	428	Testosterone	802		

other Chemica

Description	Page	Description	Page	Description	Page	Description	Page
Bone oil	153	Mixed-bed resin MBH 100 (Appli-QUA TM)	547	Sea sand pure	707	Silicon-free greases (glisseal® HV)	712
Charcoal, activated granular	195	Molecular sieve 4Å (0.4 nm)	548	Silica gel 60 (0.2 mm - 0.5 mm)	711	Silicon-free greases (glisseal® N)	713
Decalcifier for removal of scale	260	Molecular sieve 5Å (0,5 nm)	548	Silica gel 60 (0.040 mm - 0.063 mm)	712	Tetrabutylammonium hydrogen sulfate pure	803
EDTA tripotassium salt dihydrate pure	317	Oil bath filling	583	Silica gel 60 (0.063 mm - 0.200 mm)	712	Vaseline, white	853
Marble granular for producing CO ₂	516	Phenol crystalline p. A.	612	Silica gel - Beads orange	712	Vermiculite Granulate	855
		Sea sand p. A.	707				

Pharma grade chemicals

Description	Page	Description	Page	Description	Page	Description	Page
Acetic acid 100 % pure Ph. Eur., USP, E 260	39	Ammonium hydrogen carbonate pure Ph. Eur., BP, E 503	96	Benzalkonium chloride NF	131	Calcium chloride hexahydrate pure Ph. Eur.	179
Acetone pure Ph. Eur., NF	45	Amphotericin B pure Ph. Eur.	107	Benzethonium chloride pure Ph. Eur.	133	Calcium gluconate monohydrate pure Ph. Eur., USP	180
L-Alanine pure Ph. Eur., USP	74	Ampicillin sodium salt pure Ph. Eur.	108	Benzoic acid pure Ph. Eur., USP	133	Calcium hypophosphite pure DAC	181
Aluminium ammonium sulfate decahydrate pure USP	82	L-Arginine base pure Ph. Eur., USP	117	Benzoic acid grained pure Ph. Eur. USP	133	Calcium lactate pentahydrate pure Ph. Eur., USP	181
Aluminium chloride hexahydrate pure Ph. Eur., USP, BP	83	L-Arginine hydrochloride pure Ph. Eur., USP	118	Benzyl alcohol pure Ph. Eur., NF	135	tri-Calcium phosphate pure Ph. Eur.	182
Aluminium sulfate hydrate crystalline, pure Ph. Eur.	83	L-(+)-Ascorbic acid powdered, pure Ph. Eur., BP, USP, Food grade	120	D-(+)-Biotin pure Ph. Eur.	140	Calcium sulfate dihydrate pure Ph. Eur.	183
4-Aminobenzoic acid pure USP	86	L-Asparagine monohydrate pure Ph. Eur.	121	Boric acid pure Ph. Eur., NF	154	D-Campher pure Ph. Eur., USP	184
Ammonia - Solution 25 % pure Ph. Eur.	91	L-Aspartic acid pure Ph. Eur., USP	121	Calcium L-ascorbate dihydrate pure Ph. Eur.	177	Cer(IV) sulfate - Standard volumetric solution (0.1 M) Reagent Ph. Eur.	191
Ammonia - Solution 10 % pure DAB	92	L-Aspartic acid magnesium salt pure Ph. Eur.	122	Calcium carbonate precipitated pure Ph. Eur., USP	177	Chloral hydrate pure Ph. Eur.	200
Ammonium chloride pure Ph. Eur., USP	95	Bentonite pure Ph. Eur.	130	Calcium chloride dihydrate pure Ph. Eur., BP, USP, Food grade	178		

Pharma grade chemicals

Description	Page	Description	Page	Description	Page	Description	Page
Chloramine T trihydrate pure Ph. Eur.	200	L-Lactic acid sodium salt - Solution 50 % low endotoxin pure Ph. Eur., USP	477	Potassium acetate pure Ph. Eur.	636	Sodium disulfite pure Ph. Eur., NF	732
Chlorhexidine diacetate pure Ph. Eur.	202	D(+)-Lactose monohydrate pure Ph. Eur.	478	Potassium aluminium sulfate dodecahydrate pure Ph. Eur., BP, USP	636	Sodium fluoride pure Ph. Eur., USP	733
Chloroform pure DAB 9, BP	205	L-Leucine pure Ph. Eur., USP	486	Potassium bromide pure Ph. Eur.	637	Sodium gluconate pure USP	733
Citric acid anhydrous powdered, pure Ph. Eur., USP, BP, E 330	214	L-Lysine monohydrate pure DAB	499	Potassium carbonate pure Ph. Eur., USP, Food grade	637	Sodium hydrogen carbonate pure Ph. Eur., USP	734
Citric acid monohydrate pure Ph. Eur., BP, USP, Food grade	214	L-Lysine monohydrochloride pure Ph. Eur., USP	499	Potassium chloride pure Ph. Eur., USP	638	di-Sodium hydrogen phosphate anhydrous pure Ph. Eur., BP, USP, Food grade	735
L-Citrulline pure DAC	215	Magnesium chloride hexahydrate pure Ph. Eur., BP, USP, Food grade	503	tri-Potassium citrate monohydrate pure Ph. Eur., BP, USP, Food grade	641	di-Sodium hydrogen phosphate dihydrate pure Ph. Eur., BP, USP	736
Copper(II) sulfate pentahydrate pure Ph. Eur., USP	244	Magnesium hydroxide carbonate light pure Ph. Eur., Food grade	505	Potassium dihydrogen phosphate pure Ph. Eur., NF	643	di-Sodium hydrogen phosphate dodecahydrate pure Ph. Eur., BP, USP	736
D-Cycloserine pure USP	253	Magnesium oxide light pure Ph. Eur.	506	Potassium disulfite pure Ph. Eur., Food grade	644	Sodium hydroxide pearls pure Ph. Eur., BP, Food grade	737
L-Cysteine pure DAB	254	Magnesium stearate pure Ph. Eur.	506	Potassium hydrogen carbonate pure Ph. Eur., USP	646	Sodium hydroxide pellets pure Ph. Eur., NF	738
L-Cysteine hydrochloride monohydrate pure Ph. Eur., USP	255	Magnesium sulfate heptahydrate pure Ph. Eur., USP	507	di-Potassium hydrogen phosphate anhydrous pure Ph. Eur., USP	646	Sodium iodide pure Ph. Eur., USP	745
L-Cystine pure Ph. Eur.	255	DL-Malic acid pure Ph. Eur., NF, E 296	509	Potassium hydroxide - Pellets pure Ph. Eur., NF	648	Sodium nitrite pure Ph. Eur., USP	747
Dichloromethane pure Ph. Eur.	276	D(-)-Mannitol pure low endotoxin, Ph. Eur., BP, USP, JP	515	Potassium iodide pure Ph. Eur., USP	655	Sodium sulfate anhydrous powdered pure Ph. Eur., USP	752
Diethyl ether pure Ph. Eur.	279	D(-)-Mannitol pure Ph. Eur., USP	516	Potassium nitrate pure Ph. Eur., USP, Food grade	657	Sodium sulfate decahydrate pure Ph. Eur., USP	752
Digitonin Reagent USP	280	(-)-Menthol crystalline pure Ph. Eur., USP	528	Potassium permanganate pure Ph. Eur., USP	658	Sodium thiosulfate pentahydrate pure Ph. Eur., USP	756
Dimethyl sulfoxide pure Ph. Eur.	287	Methanol pure Ph. Eur.	535	Potassium sodium tartrate tetrahydrate pure USP	660	Sorbic acid pure Ph. Eur., NF	758
EDTA disodium salt dihydrate pure Ph. Eur., USP	314	L-Methionine pure Ph. Eur., USP	536	Potassium sorbate powdered, pure Ph. Eur.	660	D(-)-Sorbitol pure Ph. Eur., NF	758
Ethanol absolute pure Ph. Eur., USP	333	Methylene blue (C.I. 52015) pure USP, BP	538	Potassium sulfate pure DAC	661	D(-)-Sorbitol - Solution 70 % Ph. Eur., BP, USP, E420 (non-crystallizing)	758
Ethanol 96 % pure Ph. Eur., BP	334	Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	539	L-Proline pure Ph. Eur., USP	664	Streptomycin sulfate pure Ph. Eur.	774
Ethanol 70 % pure DAB	336	Methyl salicylate pure Ph. Eur., NF	542	1,2-Propanediol pure Ph. Eur., USP	664	D(-)-Sucrose pure Ph. Eur., NF	776
Ethyl acetate pure Ph. Eur.	340	Mupirocin pure USP	553	2-Propanol pure Ph. Eur., USP	667	Sulfuric acid 95 - 98 % pure Ph. Eur., NF	781
Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	343	Neomycin sulfate pure Ph. Eur.	563	n-Propyl gallate pure Ph. Eur.	670	Talc powdered, pure Ph. Eur., USP	792
Folic acid crystalline pure Ph. Eur., USP	354	Oleic acid pure Ph. Eur., NF	584	Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	670	Tannic acid pure Ph. Eur., USP	792
Formaldehyde - Solution 37 % pure Ph. Eur., BP, USP	356	D-Ornithine hydrochloride pure DAB	586	Pyridoxine hydrochloride pure Ph. Eur., USP	678	L(+)-Tartaric acid pure Ph. Eur.	796
D(-)-Fructose pure Ph. Eur., USP	364	D-Pantothenic acid calcium salt pure Ph. Eur., USP	590	Retinoic acid pure Ph. Eur.	685	Thiamine hydrochloride pure Ph. Eur.	811
Fumaric acid pure NF	365	Paraffin oil light pure Ph. Eur.	591	Saccharin sodium salt pure Ph. Eur., USP	694	L-Threonine pure Ph. Eur., USP	814
D(+)-Galactose pure Ph. Eur.	368	Paraffin - Pastilles pure Ph. Eur. (mp 52 - 54°C)	592	Salicylic acid pure Ph. Eur., USP	701	Thymol pure Ph. Eur.	815
Gelatin powdered, pure Ph. Eur., NF	370	Paraffin - Pastilles pure Ph. Eur. (mp 58 - 60°C)	592	Saponin from <i>Quillaja</i> Bark pure DAB	702	DL- α -Tocopherol acetate pure Ph. Eur.	821
Gentamycin sulfate pure Ph. Eur.	372	Penicillin G potassium salt pure Ph. Eur.	601	SDS pure Ph. Eur.	705	Trichloroacetic acid (TCA) pure Ph. Eur.	829
D(+)-Glucose anhydrous pure Ph. Eur.	377	Penicillin G sodium salt pure Ph. Eur.	601	Silica powdered, pure DAB	712	Triethyl citrate pure Ph. Eur., NF	833
D(+)-Glucose monohydrate pure Ph. Eur.	378	Petroleum ether 40 - 60 pure DAB	609	Silver nitrate pure Ph. Eur., USP	714	L-Tryptophan pure Ph. Eur., USP	845
L-Glutamic acid pure Ph. Eur.	380	Phenol crystalline pure Ph. Eur., USP	612	Sodium acetate anhydrous pure USP, Food grade	720	Tween® 20 pure Ph. Eur.	847
L-Glutamine pure DAB, USP	382	L-Phenylalanine pure Ph. Eur., USP	620	Sodium acetate trihydrate pure Ph. Eur., USP	721	Tween® 80 pure Ph. Eur.	847
Glycerol anhydrous pure Ph. Eur., USP	384	ortho-Phosphoric acid 85 % pure Ph. Eur., NF	624	Sodium L(+)-ascorbate pure USP	722	L-Tyrosine pure Ph. Eur., USP	848
Glycerol 87 % pure Ph. Eur.	385	ortho-Phosphoric acid 10 % pure Ph. Eur., NF	626	Sodium benzoate pure Ph. Eur., NF	723	Urea pure USP	850
Glycine pure Ph. Eur., USP	387	Polyethylene glycol 300 pure Ph. Eur.	630	Sodium bromide pure Ph. Eur.	724	Urea crystalline pure Ph. Eur., USP	851
L-Histidine base pure Ph. Eur., USP	409	Polyethyleneglycol 600 pure Ph. Eur.	631	Sodium carbonate anhydrous pure Ph. Eur., NF	724	L-Valine pure Ph. Eur., USP	853
L-Histidine hydrochloride monohydrate pure Ph. Eur.	409	Polyethylene glycol 1500 pure Ph. Eur.	631	Sodium chloride pure Ph. Eur., USP	727	Vancomycin hydrochloride pure Ph. Eur.	853
Hydrochloric acid 37 % pure Ph. Eur., NF	412	Polyethylene glycol 4000 pure Ph. Eur.	631	tri-Sodium citrate dihydrate pure Ph. Eur., USP	729	Vitamin B ₁₂ pure Ph. Eur.	856
Hydrochloric acid 10 % pure Ph. Eur., NF	414	Polyethylene glycol 6000 pure Ph. Eur., USP	632	Sodium cyclamate pure Ph. Eur.	729	Xylene - Mixture of isomers pure Ph. Helv.	871
Hydrogen peroxide 30 % pure Ph. Eur., USP	423	Polyethylene glycol 20000 pure Ph. Eur.	632	Sodium dihydrogen phosphate dihydrate pure Ph. Eur., USP	731	Yeast extract Reagent USP	873
Hydrogen peroxide 10 % pure	424	Polyvinylpyrrolidone (K90) pure Ph. Eur.	634	Sodium dihydrogen phosphate monohydrate pure USP	731	Zinc chloride pure Ph. Eur., USP	875
Iodine pure Ph. Eur., USP	454					Zinc oxide pure Ph. Eur., USP	877
Iron(II) sulfate heptahydrate pure Ph. Eur., USP	461					Zinc stearate pure Ph. Eur.	877
Isopropyl myristate pure Ph. Eur.	465					Zinc sulfate heptahydrate pure Ph. Eur., USP	877
Kaolin pure Ph. Eur.	470						
L(+)-Lactic acid (approx. 90 %) pure Ph. Eur., USP, Food grade	476						

Phenol, liquified

Description	Page	Description	Page	Description	Page	Description	Page
Phenol liquid non water-saturated, non stabilized <i>BioChemica</i>	612	Phenol water-saturated, non-stabilized + separate Tris - Solution (A2492)	613	Phenol water-saturated, non-stabilized + separate TLE buffer (A4573)	614	Phenol extracted with 0.1 M citrate buffer	615
Phenol liquid non water-saturated, non stabilized p. A.	613	Phenol water-saturated, stabilized + separate Tris - Solution (A2492)	614	Phenol equilibrated, non-stabilized	614	Phenol equilibrated with TE (1X) + separate Equilibration buffer (A2492)	615
Phenol water-saturated, non-stabilized	613			Phenol equilibrated, stabilized	615		
Phenol water-saturated, stabilized	613						

Phenol : Chloroform : Isoamyl alcohol

Description	Page	Description	Page	Description	Page	Description	Page
Chloroform : Isoamyl alcohol 24 : 1 <i>BioChemica</i>	206	Phenol equilibrated, stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	615	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)	616	Phenol extracted with citrate buffer : Chloroform : Isoamyl alcohol 25 : 24 : 1	616
Chloroform : Isoamyl alcohol 49 : 1 <i>BioChemica</i>	206	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	Phenol stab. : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)	616		
Phenol equilibrated, non-stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	615	Phenol stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	616				

pH indicators

Description	Page	Description	Page	Description	Page	Description	Page
Alizarin (C.I. 58000)	79	Bromothymol blue	163	Erythrosin B - Solution	331	Phenolphthalein - Solution 2 %	617
Alizarin red S (C.I. 58005)	79	Bromothymol blue - Solution	163	Indigo carmine (C.I. 73015)	451	Phenolphthalein - Solution 1 %	618
Alizarin red S - Solution	80	Bromothymol blue sodium salt	163	Indigo carmine - Solution	451	Phenolphthalein - Solution 0.1 %	618
Alizarin yellow GG (C.I. 14025)	80	Bromoxenol blue	163	Lacmus pure (C.I. 1242)	474	Phenol red Cell culture grade	618
Alizarin yellow GG - Solution	80	Bromoxenol blue - Solution	163	Lacmus - Solution	474	Phenol red	619
Alkali blue 6B	80	Chlorophenol red	206	Malachite green oxalate (C.I. 42000)	508	Phenol red - Solution	619
Alkali blue 6B - Solution	80	Chlorophenol red - Solution	206	Malachite green oxalate - Solution	508	Phenol red sodium salt	619
Brilliant green (C.I. 42040)	158	Congo red (C.I. 22120)	241	Metanil yellow	532	pH-Fix 0-14 Indicator Strips	621
Brilliant green - Solution	158	Congo red - Solution	241	Methyl green (C.I. 42590)	539	pH-Fix 0-6 Indicator Strips	621
Bromochlorophenol blue	159	m-Cresol purple	246	Methyl green - Solution	539	pH-Fix 7-14 Indicator Strips	621
Bromocresol green	159	m-Cresol purple - Solution	246	Methyl orange (C.I. 13025)	540	Quinaldine red	680
Bromocresol green - Solution (in diluted Ethanol)	160	Cresol red pure	247	Methyl orange - Solution (in diluted Ethanol)	540	Quinaldine red - Solution	680
Bromocresol green - Solution (aqueous solution)	160	Cresol red - Solution	247	Methyl orange - Solution (in water)	540	Thymol blue	815
Bromocresol purple	160	Crystal violet (C.I. 42555)	247	Methyl red (C.I. 13020)	542	Thymol blue - Solution	815
Bromocresol purple - Solution	160	Crystal violet - Solution	248	Methyl red (C.I. 13020)	542	Thymol blue sodium salt water-soluble	815
Bromophenol blue	161	Dimethyl yellow (C.I. 11020)	288	Methyl red - Solution	542	Thymolphthalein	816
Bromophenol blue - Solution (in diluted Ethanol)	161	Dimethyl yellow - Solution	288	Methyl red sodium salt	542	Thymolphthalein - Solution	816
Bromophenol blue - Solution (aqueous solution)	161	Eosin B (C.I. 45400)	328	Methyl red sodium salt - Solution	542	Titan yellow (C.I. 19540)	818
Bromophenol blue sodium salt	162	Eosin B - Solution	328	β-Naphthol violet	560	Titan yellow - Solution	818
Bromophenol red	162	Eosin Y (C.I. 45380)	328	Neutral red (C.I. 50040)	564	para-Xylenol blue	872
Bromophenol red - Solution	163	Eosin Y - Solution	329	Neutral red - Solution	564	para-Xylenol blue - Solution	872
		Erythrosin B (C.I. 45430)	331	Phenolphthalein (C.I. 764)	617		

Plant cell culture reagents

Description	Page	Description	Page	Description	Page	Description	Page
6-Benzylaminopurine <i>BioChemica</i>	136	Paromomycin sulfate <i>BioChemica</i>	592				

Protease inhibitors

Description	Page	Description	Page	Description	Page	Description	Page
AESBF hydrochloride <i>BioChemica</i>	69	ε-Aminocaproic acid <i>BioChemica</i>	87	Antipain dihydrochloride <i>BioChemica</i>	111	Aprotinin <i>BioChemica</i>	116
Amastatin hydrochloride	84	ε-Aminocaproic acid for synthesis	87	α ₁ -Antitrypsin, human	111	Benzamidine hydrochloride <i>BioChemica</i>	132
p-Aminobenzamidine dihydrochloride <i>BioChemica</i>	86	α ₁ -Antichymotrypsin, human	111	APMSF hydrochloride <i>BioChemica</i>	114	Benzethonium chloride <i>BioChemica</i>	133

Protease inhibitors

Description	Page	Description	Page	Description	Page	Description	Page
Bestatin hydrochloride <i>BioChemica</i>	137	E-64	311	1,10-Phenanthroline monohydrate	611	Protease Inhibitor Cocktail 6 His-Tag Prot	673
Boc-Ala-Pro-Phe-NHO-Bz	153	EDTA dipotassium salt dihydrate <i>BioChemica</i>	314	Phosphoramidon disodium salt <i>BioChemica</i>	624	Sodium disulfite <i>BioChemica</i>	732
Boc-Pro-Phe-NHO-Bz-p-Cl	153	EDTA disodium salt dihydrate <i>BioChemica</i>	314	PMSF <i>BioChemica</i>	630	Subtilisin Inhibitor I	775
Calpain Inhibitor I	183	EGTA Molecular biology grade	318	Protease Inhibitor Cocktail 1 Cell	672	N α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) <i>BioChemica</i>	823
Calpain Inhibitor II	183	Elastase Inhibitor I	319	Protease Inhibitor Cocktail 2 MultiPurpose	672	Tosyl-L-phenylalanine chloromethyl ketone (TPCK)	824
Calpain Inhibitor III	183	Iodoacetamide <i>BioChemica</i>	455	Protease Inhibitor Cocktail 3 Bacteria	672	Trypsin inhibitor from soybean > 10000 BAE	843
Cathepsin Inhibitor I	188	Iodoacetic acid sodium salt <i>BioChemica</i>	456	Protease Inhibitor Cocktail 4 MammCell/Tissue Plus	672	Z-Gly-Phe-NHO-Bz	874
Cathepsin Inhibitor II	189	Leupeptin hemisulfate	488	Protease Inhibitor Cocktail 5 MammCell/Tissue	673		
Cathepsin Inhibitor III	189	α_2 -Macroglobulin	501				
Cathepsin/Subtilisin Inhibitor	189	Peptstatin A	604				
Chymostatin	211						

Protein dyes

Description	Page	Description	Page	Description	Page	Description	Page
Amido black 10 B (C.I. 20470)	84	Congo red (C.I. 22120)	241	Eriochrome black T (C.I. 14645)	330	Proteo-Dye Green-Fluo	675
Bicinchoninic acid Protein Assay	138	Coomassie® Brilliant blue G-250 (C.I. 42655)	242	Fast Green FCF (C.I. 42053)	345	Proteo-Dye Red-Fluo	675
Bicinchoninic acid Protein Assay Micro	138	Coomassie® Brilliant blue R-250 (C.I. 42660)	242	Folin-Ciocalteu's phenol reagent	354	Proteo-Dye RuBPS	675
Bismarck brown R (C.I. 21010)	146	Eosin B (C.I. 45400)	328	Malachite green oxalate (C.I. 42000) Protein staining grade	508	Rhodamine B (C.I. 45170)	686
Bismarck brown Y (C.I. 21000)	147	Eosin Y (C.I. 45380)	328	Ponceau S (C.I. 27195)	635	Silver nitrate <i>BioChemica</i>	713
Bradford - Solution for Protein Determination	156			Proteo-Dye Blue-Vis	674	Stains all	762

Proteins, human

Description	Page	Description	Page	Description	Page	Description	Page
α_1 -Acid Glycoprotein, human	50	Creatine Kinase MM Fraction, human	245	Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)	475	Pepsinogen I, human	603
Albumin, human	77	Elastase, neutrophil Grade 2, human	319	Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475	Pepsinogen II, human	604
α -Amylase from Pancreas, human	109	Enolase, Neuron-specific human	327	Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)	475	Prealbumin, human	662
α -Amylase from Saliva, human	109	Fatty Acid Binding Protein (FABP), human	345	Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)	476	Prostate specific Antigen (PSA), human	671
α_1 -Antichymotrypsin, human	111	Ferritin from Heart, human	346	apo-Lactoferrin, human	478	Prostate specific Antigen - α_1 -Antichymotrypsin Complex, human	671
α_1 -Antitrypsin, human	111	Ferritin from Liver, human	346	Leukocytes, human - sonicated	487	Renin, human	684
Cancer Antigen 19-9 (CA19-9), human	184	Ferritin from Placenta, human	346	Lipase, human	490	Retinol Binding Protein (RBP), human	685
Carcinoembryonic Antigen (CEA), human	186	Ferritin from Spleen, human	347	Lipoprotein, high density (HDL), human	490	Thyroglobulin, human	816
Cathepsin G, human	188	α -Fetoprotein (AFP), human	347	Lipoprotein, low density (LDL), human	491	Thyroid-Peroxidase (TPO), human	816
Cathepsin G-biotinylated, human	188	Glutamate Oxaloacetate Transaminase (GOT), human lyophilized	379	Lysozyme, human	500	Thyroxine Binding Globulin (TBG), human	816
Chorionic Gonadotropin (HCG), human	210	Glutamate-Oxaloacetate-Transaminase (GOT), human Suspension	380	α_1 -Microglobulin, human	544	apo-Transferrin, human	827
Chorionic Gonadotropin β -subunit, human	210	Glutamate Pyruvate Transaminase (GPT), human	380	β_2 -Microglobulin, human	544	holo-Transferrin, human	828
C-reactive Protein (CRP), human	245	Haptoglobin, human	398	Myeloperoxidase, human	555	Troponin I, human	841
Creatine Kinase BB Fraction, human	245	Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475	Myoglobin, human	555	Troponin T, human	841

Proteins, recombinant human

Description	Page	Description	Page	Description	Page	Description	Page
rHu Activin A	67	rHu CD40-L	189	rHu aFGF bioconfident grade	347	rHu FLT-3 L bioconfident grade	352
rHu Angiogenin-1 bioconfident grade	110	rHu CNTF	218	rHu aFGF	347	rHu FLT-3 L	352
rHu BAFF	125	rHu CTGF	248	rHu bFGF bioconfident grade	348	rHu Galectin-1	368
rHu BDNF	130	rHu DKK-1	291	rHu bFGF (147)	348	rHu G-CSF bioconfident grade	369
rHu BMP-2	153	rHu EGF	317	rHu bFGF (154)	348	rHu G-CSF	369
rHu BMP-4	153	rHu EG-VEGF	318	rHu bFGF (155)	349	rHu GDF-5	369
		rHu EMAP-2 bioconfident grade	326	rHu FGF (21)	349	rHu GDNF bioconfident grade	370

Proteins, recombinant human

Description	Page	Description	Page	Description	Page	Description	Page
rHu GDNF	370	rHu IL-7 bioconfident grade	438	rHu KGF bioconfident grade	471	rHu OSM	587
rHu GM-CSF	389	rHu IL-7	438	rHu Leptin	485	rHu PDGF-AA	599
rHu GRO-β	391	rHu IL-9 bioconfident grade	439	rHu LIF bioconfident grade	488	rHu PDGF-AB	600
rHu HB-EGF bioconfident grade	398	rHu IL-10	439	rHu MCP-1	520	rHu PDGF-BB bioconfident grade	600
rHu HGF	408	rHu IL-11	439	rHu MCP-2	521	rHu PDGF-BB	600
rHu IFN-α-2a bioconfident grade	432	rHu IL-12	440	rHu MCP-3	521	rHu Prolactin bioconfident grade	663
rHu IFN-γ bioconfident grade	432	rHu IL-13	440	rHu MCP-4	521	rHu RANKL bioconfident grade	682
rHu IFN-γ	432	rHu IL-15	440	rHu M-CSF bioconfident grade	521	rHu RANKL	682
rHu IGF-1	433	rHu IL-16 bioconfident grade	440	rHu M-CSF	522	rHu RANTES	683
rHu IGF-2	434	rHu IL-16	441	rHu MIF	544	rHu SCF bioconfident grade	703
rHu IL-1a bioconfident grade	434	rHu IL-17A	441	rHu MIP-1α bioconfident grade	545	rHu SCF	703
rHu IL-1b	434	rHu IL-17E	442	rHu MIP-1α	545	rHu SDF-1α	704
rHu IL-2 bioconfident grade	435	rHu IL-17F	442	rHu MIP-1β	545	rHu SF20 bioconfident grade	710
rHu IL-2	435	rHu IL-19	442	rHu MIP-3α	546	rHu TGF-β3	810
rHu IL-3 bioconfident grade	435	rHu IL-20 bioconfident grade	443	rHu MIP-3β	546	rHu TNF-α bioconfident grade	819
rHu IL-3	435	rHu IL-20	443	rHu MIP-4	546	rHu TNF-α	819
rHu IL-4 bioconfident grade	436	rHu IL-21	443	rHu Myostatin	555	rHu TNF-β bioconfident grade	820
rHu IL-4	436	rHu IL-22 bioconfident grade	443	rHu Myostatin-P	556	rHu VEGF-121 bioconfident grade	854
rHu IL-5 bioconfident grade	437	rHu IL-22	444	rHu NGF-β	564	rHu VEGF (121)	854
rHu IL-5	437	rHu IL-32α	444	rHu NRG-1 bioconfident grade	578	rHu VEGF-165 bioconfident grade	854
rHu IL-6 bioconfident grade	437	rHu IL-33	444	rHu NRG-1	578	rHu VEGF (165)	855
rHu IL-6	437	rHu Insulin	453	rHu NT-3	578		

Proteins, recombinant Mouse

Description	Page	Description	Page	Description	Page	Description	Page
rM CD40-L	190	rM IL-1b	434	rM IP-10	458	rM RANTES	683
rM EGF	318	rM IL-2	435	rM Leptin	485	rM SCF bioconfident grade	703
rM aFGF	348	rM IL-3	436	rM LIF bioconfident grade	489	rM SCF	704
rM bFGF	349	rM IL-4	436	rM MCP-3	521	rM SDF-1α	705
rM FGF-9	349	rM IL-6	438	rM M-CSF	522	rM SHH	711
rM FLT-3 L	352	rM IL-7	438	rM MIP-1α	545	rM TNF-α	820
rM G-CSF	369	rM IL-9	439	rM MIP-1β	545	rM TPO	824
rM GM-CSF bioconfident grade	389	rM IL-10	439	rM MIP-3α	546	rM VEGF-164 bioconfident grade	854
rM GM-CSF	389	rM IL-15	440	rM NGF-β	564		
rM IFN-γ	433	rM IL-16	441	rM PDGF-AA	600		
rM IGF-1	433	rM IL-27 (p28)	444	rM RANKL	683		

Proteins, recombinant Rat

Description	Page	Description	Page	Description	Page	Description	Page
rR IFN-γ	433	rR IL-17A	441	rR Leptin	486		
rR IGF-1	434	rR IL-17E	442	rR TNF-α	820		

ready-to-use reagents

Description	Page	Description	Page	Description	Page	Description	Page
Acid Mixture Sulfuric acid 96 % : Phosphoric acid 85 % (1 : 1, v/v) p. A.	50	Acrylamide 2K - Solution (40 %)	54	Acrylamide 4K - Solution (50 %) - Mix 16.6 : 1	55	Acrylamide 2K - Solution (40 %) - Mix 19 : 1	55
Acrylamide - Solution (40 %) Molecular biology grade	54	Acrylamide 2K - Solution (30 %)	54	Acrylamide - Solution (40 %) - Mix 19 : 1 Molecular biology grade	55	Acrylamide 2K - Solution (30 %) - Mix 19 : 1	56
Acrylamide - Solution (30 %) Molecular biology grade	54	Acrylamide 4K - Stacking gel solution (5 %) for SDS-PAGE	55	Acrylamide - Solution (30 %) - Mix 19 : 1 Molecular biology grade	55	Acrylamide 4K - Solution (40 %) - Mix 29 : 1	56
Acrylamide 4K - Solution (40 %)	54	Acrylamide 4K - Stacking gel solution (4 %) for SDS-PAGE	55	Acrylamide 4K - Solution (40 %) - Mix 19 : 1	55	Acrylamide 4K - Solution (30 %) - Mix 29 : 1	56
Acrylamide 4K - Solution (30 %)	54	Acrylamide 2K - Stacking gel solution (5 %) for SDS-PAGE	55	Acrylamide 4K - Solution (30 %) - Mix 19 : 1	55	Acrylamide 2K - Solution (40 %) - Mix 29 : 1	56
		Acrylamide 2K - Stacking gel solution (4 %) for SDS-PAGE	55				

ready-to-use reagents

Description	Page	Description	Page	Description	Page	Description	Page
Acrylamide 2K - Solution (30 %) - Mix 29 : 1	56	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (7.5 %)	63	Alkaline Lysis - Solution III	81	Chloroform : Isoamyl alcohol 49 : 1	206
Acrylamide 4K - Solution (40 %) - Mix 32 : 1	56	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (10 %)	63	Allylthiourea - Solution (1 g/L) for BOD determination	82	<i>BioChemica</i>	
Acrylamide 4K - Solution (30 %) - Mix 32 : 1	57	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (12.5 %)	63	Aluminium chloride hexahydrate - Solution (104.61 g/L)	83	Chromium(III) potassium sulfate - Solution for COD-determination	210
Acrylamide 2K - Solution (40 %) - Mix 32 : 1	57	Acrylamide 2K - Ready-to-use solution for SDS-PAGE (15 %)	63	Ammonium - Stock Solution	92	Citrate buffer - Solution (1 M) pH 4.00	213
Acrylamide 2K - Solution (30 %) - Mix 32 : 1	57	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	63	Ammonium acetate - Lösung (7.5 M) Molecular biology grade	93	CTAB - Lysis buffer <i>BioChemica</i>	248
Acrylamide - Solution (30 %) - Mix 37.5 : 1 Molecular biology grade	57	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	63	Ammonium chloride - Solution (1 M)	95	Denaturing - Solution Molecular biology grade	262
Acrylamide 4K - Solution (40 %) - Mix 37.5 : 1	57	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	63	Ammonium chloride - Solution (10 % p. A.)	99	Denhardt's - Solution (50X) <i>Bio-Chemica</i>	263
Acrylamide 2K - Solution (40 %) - Mix 37.5 : 1	57	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (8 %)	64	Ammonium iron(III) sulfate - Solution approx. 40 % p. A.	99	2'-Deoxyadenosine 5'-triphosphoric acid - Solution (100 mM) <i>Bio-Chemica</i>	263
Acrylamide 2K - Solution (30 %) - Mix 37.5 : 1	58	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Ammonium molybdate - Solution 20 % pure	100	2'-Deoxycytidine 5'-triphosphoric acid - Solution (100 mM) <i>Bio-Chemica</i>	265
Acrylamide 2K - Solution (30 %) - Mix 49 : 1	58	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64	Ammonium molybdate - Solution 4 % p. A.	101	2'-Deoxyguanosine 5'-triphosphoric acid - Solution (100 mM) <i>Bio-Chemica</i>	265
Acrylamide 2K - Solution (40 %) - Mix 49 : 1 for SSCP	58	Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64	Ammonium thiocyanate - Solution 12 % p. A.	104	Deoxyribonucleotide - Mix <i>Bio-Chemica</i>	266
Acrylamide 4K - Solution (63.9 %) - Mix 158.75 : 1 for TAU gels	58	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)	64	Ammonium thiocyanate - Solution 6 % pure	104	Deoxyribonucleotide - Set <i>Bio-Chemica</i>	266
Acrylamide 4K : Diacryloylpiperazine - Solution (40 %) - Mix 39 : 1	58	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	64	Antifade	111	2'-Deoxythymidine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	268
Acrylamide 2K : Diacryloylpiperazine - Solution (40 %) - Mix 39 : 1	58	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	64	Aquabator-Clean™	117	2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol	282
Acrylamide 4K - Sequamix 8	59	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Ascorbic acid - Solution (40 g/L)	120	Dimethyldichlorosilane - Solution 5 % <i>BioChemica</i>	284
Acrylamide 4K - Sequamix 6	59	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64	Autoclave-ExitusPlus™	123	DNA - Isolation reagent for genomic DNA	298
Acrylamide 4K - Sequencing solution (40 %) 19 : 1	59	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64	Barium chloride - Solution (61 g/L) p. A.	127	DNA-PrecipitAid	304
Acrylamide 4K - Sequencing solution (25 %) 19 : 1	59	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (25 %)	64	Barium chloride - Solution 30 % pure	127	DTT - Solution (1 M) Molecular biology grade	310
Acrylamide 2K - Sequencing solution (40 %) 19 : 1	59	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)	64	Barium chloride - Solution 25 % pure	128	EDTA disodium salt - Solution (31.5 g/L)	315
Acrylamide 2K - Sequencing solution (25 %) 19 : 1	59	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)	64	Barium chloride - Solution 20 % p. A.	128	EDTA - Solution pH 8.0 (0.5 M) Molecular biology grade	316
Acrylamide - Sequencing buffer	60	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)	64	Barium chloride - Solution 10 % p. A.	128	EDTA - Solution pH 8.0 (0.5 M)	316
Acrylamide - Diluent for sequencing gels	60	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)	64	Benzethonium chloride - Solution (0.004 M)	133	EDTA - Solution pH 8.0 (0.25 M)	317
Acrylamide 4K - Sequencing kit (25 %)	60	Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)	64	Bisacrylamide 4K - Solution (2 %)	144	Ethidium bromide - Solution 1 % <i>BioChemica</i>	338
Acrylamide 2K - Sequencing kit (25 %)	61	Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (4 %)	65	Bisacrylamide 4K - Solution (1 %)	144	Ethidium bromide - Solution 0.07 % "dropper-bottle"	338
Acrylamide - Resolving gel buffer for protein gels (4X)	61	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (5 %)	65	Bisacrylamide 2K - Solution (2 %)	144	Extraction buffer for luciferase and β-galactosidase assay	344
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (6 %)	61	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (6 %)	65	Blocking Reagent CA	149	G418 disulfate - Solution, sterile	367
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (8 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (8 %)	65	Boric acid - Solution (20 g/L) for determination of ammonia	154	GelSave	371
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (10 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (10 %)	65	Bradford - Solution for Protein Determination	156	Glycerol 50 % / Methyl green 0.6 %	386
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (12 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (12 %)	65	Bromocresol green - Solution (aqueous solution)	160	Guanidine hydrochloride - Solution (8 M) <i>BioChemica</i>	392
Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (15 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (15 %)	65	Bromophenol blue - Solution (aqueous solution)	161	Guanidine hydrochloride - Solution (4 M) <i>BioChemica</i>	392
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (5 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (6 %)	65	Buffer solution pH 4.00	164	Guanidine thiocyanate - Solution (6 M in 0.1 M Tris; pH 7.5) Molecular biology grade	393
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (7.5 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (8 %)	65	Buffer solution pH 7.00	165	Guanidine thiocyanate - Solution (4 M in 0.1 M Tris; pH 7.5) Molecular biology grade	393
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (10 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (10 %)	65	Buffer solution pH 9.00	165	Haines reagent	395
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (12.5 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (12 %)	65	Buffer solution pH 10.00	165	HEPES buffer pH 8.0 (1 M) sterile	401
Acrylamide 4K - Ready-to-use solution for SDS-PAGE (15 %)	62	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (15 %)	65	Buffer set I	166	HEPES buffer pH 7.5 (1 M) sterile	402
Acrylamide 2K - Ready-to-use solution for SDS-PAGE (5 %)	63	Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (10 %)	65	Buffer set II (color-coded)	166	Hybridization Solution	410
		Albumin Fraction V - Solution (10 %), sterile	78	Buffer solution pH 4.00 (red)	166	Hydrochloric acid-Alcohol - Mixture (0.75 % HCl)	419
				Buffer solution pH 7.00 (green)	166	Antibody Stabilizer-PBS	446
				Buffer solution pH 10.00 (blue)	167	Antibody Stabilizer-Tris	446
				Butylated hydroxytoluene - Solution 1 % (in Ethanol)	173	Blocking Buffer I	447
				Calcium chloride - Solution (27.5 g/L) for BOD-determination	179	Blocking Buffer II <i>EGrade</i>	447
				Calcium chloride - Solution (1 M) <i>BioChemica</i>	179	Coating Buffer C pH 9.6	448
				Carrez - Solution I for determination of sugar and starch	186		
				Carrez - Solution II for determination of sugar and starch	186		
				Chloroform : Isoamyl alcohol 24 : 1	206		
				<i>BioChemica</i>			

ready-to-use reagents

Description	Page	Description	Page	Description	Page	Description	Page
Coating Buffer PBS pH 7.4	448	Phenol water-saturated, non-stabilized + separate Tris - Solution (A2492)	613	Proteinase K - Solution	674	TBE buffer (10X) Molecular biology grade	797
CrossDown Buffer	448	Phenol water-saturated, stabilized + separate Tris - Solution (A2492)	614	Proteo-Dye Blue-Vis	674	TBE buffer (10X) Fluorescence grade	797
Sample Buffer T-	449	Phenol water-saturated, non-stabilized + separate TLE buffer (A4573)	614	Proteo-Dye Green-Fluo	675	TBE buffer (10X)	797
Sample Buffer T+	449	Phenol equilibrated, non-stabilized	614	Proteo-Dye Red-Fluo	675	TBE buffer (5X) Molecular biology grade	797
Stripping Buffer I	450	Phenol equilibrated, stabilized	615	Random Primer DNA Labeling Mix	682	TBE buffer (5X)	798
Washing Buffer TrisT- (10X)	450	Phenol extracted with 0.1 M citrate buffer	615	RNase-ExitusPlus™	691	TBS (Tris-buffered saline, 10X) with Phenol red	799
Washing Buffer TrisT+ (10X)	450	Phenol equilibrated with TE (1X) + separate Equilibration buffer (A2492)	615	Rose Bengal - Solution	691	TBS (Tris-buffered saline, 1X) with Phenol red	799
Incubator-Clean™	450	Phenol equilibrated, non-stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	615	SDS - Solution 20 % pure	706	TE buffer (100X) pH 7.5	800
Incuwater-Clean™	451	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	SDS - Solution 10 % pure	706	TE buffer (100X) pH 8.0	800
Iron(II) chloride - Solution according to Stoeck-Staehler	459	Phenol stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	SDS-Tris-Glycine buffer (10X) Bio-Chemica	707	TE buffer (10X) pH 8.0	800
Iron(III) nitrate - Solution (10 g/L Fe ³⁺) in Nitric acid 2 M	461	Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	SDS-Tris-Glycine buffer (5X) Bio-Chemica	707	TE buffer (1X) pH 7.0	800
Loading buffer DNA I	493	Phenol stab. : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)	616	SDS-Tris-Glycine buffer (1X) Bio-Chemica	707	TE buffer (1X) pH 7.4	800
Loading buffer DNA II	494	Phenol extracted with citrate buffer : Chloroform : Isoamyl alcohol 25 : 24 : 1	616	Sodium acetate - Solution 3 M (pH 4.6)	721	TE buffer (1X) pH 7.5	800
Loading buffer DNA III (alkaline)	494	Phenol equilibration buffer (Citrat pH 4.3)	616	Sodium acetate - Solution (3 M, pH 5.2) Molecular biology grade	721	TE buffer (1X) pH 8.0	800
Loading buffer DNA IV (for Agarose gels)	494	Phenol equilibration buffer (Citrate/EDTA pH 4.5)	616	Sodium acetate - Solution 3 M (pH 5.2)	721	TE buffer (1X) pH 8.0 low EDTA Molecular biology grade	801
Loading buffer V (for denaturing urea gels)	494	Phenol red - Solution	619	Sodium acetate - Solution 3 M (pH 7.0)	722	TEN buffer	801
Loading buffer VI (for sequencing gels)	495	Ponceau S - Solution	635	Sodium acetate - Solution 20 % p. A.	722	Tetramethylammonium chloride - Solution (approx. 6 M) Molecular biology grade	808
Loading buffer VII (for denaturing PAGE)	495	Potassium chloride - Solution (4 M)	639	Sodium acetate - Solution 15 % p. A.	722	TISAB III - Solution for detection of fluoride	818
Loading buffer VIII (for Glyoxal / DMSO - RNA gels)	495	Potassium chloride - Solution (3.5 M)	639	Sodium chlorate - Solution (50 g/L)	726	TLE buffer	818
Loading buffer IX (for SDS gels)	495	Potassium chloride - Solution (3 M) Molecular biology grade	639	Sodium chloride - Solution (5 M)	727	TPE buffer (10X)	824
LPS buffer Molecular biology grade	496	Potassium chloride - Solution (3 M)	639	Sodium dihydrogen phosphate - Solution (1 M)	732	TPE buffer (1X)	824
Luciferase assay buffer	496	Potassium chloride - Solution (1 M)	639	Sodium dihydrogen phosphate - Solution (1/15 M)	732	Trichloroacetic acid - Solution 20 % Bio-Chemica	829
Lugol's - Solution (concentrated) 5 % Iodine	497	Potassium chloride - Solution (3.5 M) saturated with silver chloride	640	Sodium dihydrogen phosphate - Solution (1/15 M)	735	Trichloroacetic acid - Solution 10 % Bio-Chemica	829
Lympho-Pure	498	Potassium dihydrogen phosphate - Solution (1 M)	643	Sodium hydrogen carbonate - Solution 5 %	735	Triethylammonium acetate buffer pH 7.0 (1 M)	832
Magnesium acetate - Solution (1 M)	503	Potassium dihydrogen phosphate - Solution (1/15 M)	643	di-Sodium hydrogen phosphate - Solution (1/15 M)	736	Triethylammonium formate buffer pH 6.0 (1 M)	832
Magnesium chloride - Solution (1 M)	504	SSC buffer (20X) Molecular biology grade	761	Sodium hydroxide - Standard volumetric Solution (1 M)	743	Triethylammonium phosphate buffer pH 3.0 (1 M)	833
Magnesium chloride - Solution (100 mM) Molecular biology grade	504	SSC buffer (5X) with 1 % SDS Molecular biology grade	761	Sodium hydroxide - Standard volumetric Solution (0.5 M)	743	Trifluoroacetic acid - Solution 25 %	833
Magnesium chloride - Solution (25 mM) Molecular biology grade	504	SSPE buffer (20X) Molecular biology grade	761	Sodium hydroxide - Standard volumetric Solution (0.1 M)	744	Tris buffer pH 6.8 (1 M)	836
Magnesium sulfate - Solution (1 M)	507	STET buffer	773	Sodium perchlorate - Solution (5 M) Molecular biology grade	749	Tris buffer pH 7.0 (1 M) Molecular biology grade	836
Magnesium sulfate - Solution (25 mM) Molecular biology grade	508	TAE buffer (50X) Molecular biology grade	791	Sodium sulfite - Solution 17 % pure	753	Tris buffer pH 7.4 (1 M) Molecular biology grade	836
Manganese(II) acetate - Solution (25 mM) Molecular biology grade	513	TAE buffer (10X) Molecular biology grade	791	Sodium sulfite - Solution 12.5 % p. A.	753	Tris buffer pH 7.4 (1 M)	836
Manganese(II) chloride - Solution for determination of oxygen in water	514	TAE buffer (10X)	791	Sodium tetraborate - Solution (50 g/L)	754	Tris buffer pH 7.5 (1 M) Molecular biology grade	836
Manganese(II) chloride - Solution (25 mM) Molecular biology grade	514	L(+)-Tartaric acid - Solution 20 % p. A.	796	Sodium tetraborate - Solution (5 g/L)	754	Tris buffer pH 7.6 (1 M) Molecular biology grade	836
Manganese(II) sulfate - Solution acc. to Reinhardt-Zimmermann	515					Tris buffer pH 8.0 (1 M) Molecular biology grade	836
Methyl orange - Solution (in water)	540					Tris buffer pH 8.0 (1 M)	836
Methyl red sodium salt - Solution	542					Tris buffer pH 8.4 (1 M) Molecular biology grade	837
Neutralizing - Solution Molecular biology grade	564					Tris buffer pH 8.8 (1 M) Molecular biology grade	837
Oxidation - Solution DNA synthesis grade	589					Tris buffer pH 8.2 (0.5 M)	837
Papanicolaous - Solution 2b	591					Tris buffer pH 8.8 (0.5 M)	837
PBS / Tween® - Solution	595					Tris-Glycine buffer (10X) Bio-Chemica	838
PCR buffer (10X)	599					Tris-Glycine buffer (5X) Bio-Chemica	838
PCR buffer (1X)	599					Tris-Glycine buffer (1X) Bio-Chemica	839
RT-PCR buffer, one-step reaction (5X)	599					Tris-Phosphate buffer pH 7.8 (1 M)	839
Phenol liquid non water-saturated, not stabilized Bio-Chemica	612					Tris-Tricine-SDS buffer (5X) Bio-Chemica	839
Phenol water-saturated, non-stabilized	613						
Phenol water-saturated, stabilized	613						

ready-to-use reagents

Description	Page	Description	Page	Description	Page	Description	Page
Tris-Tricine-SDS buffer (1X) <i>BioChemica</i>	840	<i>Tth</i> PCR buffer (10X)	845	Western blot - Transfer buffer	865	Ziehl-Neelsen - Solution	875
TTBS (Tween® / Tris-buffered salt solution)	845	Tuerk's Reagent	846	Wright's Eosin-Methylene blue - Solution	867		

Safety Caps SafetyFirst

Description	Page	Description	Page	Description	Page	Description	Page
SafetyFirst Cap 1 (GL45)	695	SafetyFirst Cap for waste container (S55) including valve safety funnel	697	SafetyFirst Adapter PP (GL45/S55)	698	SafetyFirst PTFE ferrules 3.2 mm ID	699
SafetyFirst Cap 1 (GL45) with shut-off	695	SafetyFirst Cap for waste container (S60/61)	697	SafetyFirst Adapter PTFE (GL45/GL40)	698	SafetyFirst Fittings (PP) Standard	699
SafetyFirst Cap 2 (GL45)	695	SafetyFirst Cap for waste container (S60/61) including valve safety funnel	698	SafetyFirst Charcoal Filter M medium (48 g)	698	SafetyFirst PTFE fitting with integrated ferrule	699
SafetyFirst Cap 3 (GL45)	696	SafetyFirst Adapter PE (S60/61 to 2")	698	SafetyFirst Air valve	699	SafetyFirst Funnel (S55) with stainless steel sieve	700
SafetyFirst Cap 3 (GL45) each with shut-off	696	SafetyFirst Adapter PP (GL45/GL40)	698	SafetyFirst Screw for closing non used connectors	699	SafetyFirst Funnel (S60/61) with stainless steel sieve	700
SafetyFirst Cap 4 (GL45)	696			SafetyFirst PTFE ferrules 1.6 mm ID	699	SafetyFirst Funnel with valve	700
SafetyFirst Cap for waste container (GL45)	697			SafetyFirst PTFE ferrules 2.3 mm ID	699		
SafetyFirst Cap for waste container (S55)	697						

Salts

Description	Page	Description	Page	Description	Page	Description	Page
Aluminium chloride hexahydrate p. A.	82	Ammonium hydrogen sulfate pure	97	Barium chloride dihydrate pure	127	Calcium nitrate tetrahydrate pure	182
Aluminium chloride hexahydrate pure Ph. Eur., USP BP	83	Ammonium iron(II) sulfate hexahydrate p. A.	97	Barium hydroxide octahydrate p. A.	129	tri-Calcium phosphate pure Ph. Eur.	182
Aluminium sulfate hydrate crystalline, p. A.	83	Ammonium iron(II) sulfate hexahydrate pure	98	Barium sulfate pure Ph. Eur.	129	Calcium saccharate tetrahydrate pure USP	182
Aluminium sulfate hydrate crystalline, pure Ph. Eur.	83	Ammonium iron(III) sulfate dodecahydrate p. A.	99	Calcium acetate hydrate p. A.	176	Calcium sulfate dihydrate p. A.	183
Ammonium acetate Molecular biology grade	93	Ammonium iron(III) sulfate dodecahydrate pure	99	Calcium acetate hydrate for soil testing	176	Calcium sulfate dihydrate pure Ph. Eur.	183
Ammonium acetate <i>BioChemica</i>	93	Ammonium molybdate tetrahydrate <i>BioChemica</i>	100	Calcium acetate hydrate pure	176	Cer(III) chloride hydrate pure	191
Ammonium acetate p. A.	93	Ammonium molybdate tetrahydrate p. A.	100	Calcium carbonate precipitated p. A.	177	Cer(IV) sulfate tetrahydrate p. A.	191
Ammonium acetate pure	93	Ammonium molybdate tetrahydrate pure	100	Calcium carbonate precipitated pure Ph. Eur., USP	177	Cer(IV) sulfate tetrahydrate pure	191
Ammonium bromide p. A.	94	Ammonium nitrate <i>BioChemica</i>	101	Calcium chloride granulated, pure	177	Cesium chloride 99.999 % Molecular biology grade	192
Ammonium bromide pure	94	Ammonium nitrate p. A.	101	Calcium chloride dried, powdered <i>BioChemica</i>	178	Cesium chloride 99.9 % <i>BioChemica</i>	192
Ammonium carbonate pure Food grade	94	Ammonium nitrate pure	101	Calcium chloride dried, powdered pure	178	Cesium chloride p. A.	193
Ammonium chloride Molecular biology grade	94	<i>di</i> -Ammonium oxalate monohydrate p. A.	102	Calcium chloride dihydrate Molecular Biology grade	178	Chromium(III) chloride hexahydrate pure	210
Ammonium chloride <i>BioChemica</i>	94	<i>di</i> -Ammonium oxalate monohydrate pure	102	Calcium chloride dihydrate <i>BioChemica</i>	178	Cobalt(II) acetate tetrahydrate pure	219
Ammonium chloride p. A.	94	Ammonium persulfate Molecular biology grade	102	Calcium chloride dihydrate p. A.	178	Cobalt(II) chloride hexahydrate p. A.	219
Ammonium chloride pure Ph. Eur., USP	95	Ammonium persulfate <i>BioChemica</i>	102	Calcium chloride dihydrate pure Ph. Eur., BP, USP, Food grade	178	Cobalt(II) chloride hexahydrate pure	219
Ammonium chloride Technical grade	95	Ammonium persulfate p. A.	102	Calcium chloride hexahydrate p. A.	179	Cobalt(II) sulfate heptahydrate pure	220
Ammonium dihydrogen phosphate p. A.	95	Ammonium persulfate pure	102	Calcium chloride hexahydrate pure Ph. Eur.	179	Copper(I) chloride pure	242
Ammonium dihydrogen phosphate pure	95	Ammonium sulfate Molecular biology grade	103	tri-Calcium dicitrate tetrahydrate pure	180	Copper(II) chloride dihydrate pure	243
Ammonium hydrogen carbonate <i>BioChemica</i>	96	Ammonium sulfate <i>BioChemica</i>	103	Calcium hydroxide p. A.	180	Copper(II) nitrate trihydrate pure	243
Ammonium hydrogen carbonate p. A.	96	Ammonium sulfate p. A.	103	Calcium hydroxide pure	180	Copper(II) sulfate pentahydrate <i>BioChemica</i>	244
Ammonium hydrogen carbonate pure Ph. Eur., BP, E 503	96	Ammonium sulfate pure	103	Calcium hydroxide pure Ph. Eur., USP, FCC	180	Copper(II) sulfate pentahydrate p. A.	244
<i>di</i> -Ammonium hydrogen citrate p. A.	96	Ammonium thiocyanate <i>BioChemica</i>	103	Calcium lactate pentahydrate <i>BioChemica</i>	181	Copper(II) sulfate pentahydrate pure Ph. Eur., USP	244
<i>di</i> -Ammonium hydrogen citrate pure	96	Ammonium thiocyanate p. A.	104	Calcium lactate pentahydrate p. A.	181	EDTA calcium magnesium salt pure	313
<i>di</i> -Ammonium hydrogen citrate p. A.	96	Ammonium thiocyanate pure	104	Calcium lactate pentahydrate for soil testing	181	EDTA dipotassium salt dihydrate <i>BioChemica</i>	314
<i>di</i> -Ammonium hydrogen phosphate p. A.	97	Ammonium thiosulfate pure	104	Calcium lactate pentahydrate pure Ph. Eur., USP	181	EDTA disodium salt dihydrate Molecular biology grade	314
<i>di</i> -Ammonium hydrogen phosphate pure	97	Barium carbonate p. A.	126	Calcium nitrate tetrahydrate <i>BioChemica</i>	182	EDTA disodium salt dihydrate <i>BioChemica</i>	314
Ammonium hydrogen sulfate p. A.	97	Barium carbonate pure	126	Calcium nitrate tetrahydrate p. A.	182	EDTA disodium salt dihydrate p. A.	314
		Barium chloride dihydrate p. A.	127				

Salts

Description	Page	Description	Page	Description	Page	Description	Page
EDTA disodium salt dihydrate pure Ph. Eur., USP	314	Magnesium sulfate heptahydrate pure Ph. Eur., USP	507	Potassium disulfite pure Ph. Eur., Food grade	644	Silver nitrate pure Ph. Eur., USP	714
EDTA tetrasodium salt dihydrate <i>BioChemica</i>	317	Magnesium sulfate heptahydrate Technical grade	507	Potassium ferricyanide <i>BioChemica</i>	644	Silver sulfate p. A.	717
EDTA tetrasodium salt dihydrate p. A.	317	Manganese(II) acetate tetrahydrate pure	513	Potassium ferricyanide p. A.	644	Silver sulfate pure	717
Hexamminecobalt(III) chloride Molecular biology grade	405	Manganese(II) chloride tetrahydrate <i>BioChemica</i>	514	Potassium ferricyanide pure	644	Sodium acetate anhydrous Molecular biology grade	720
Hydroxylammonium chloride <i>BioChemica</i>	426	Manganese(II) chloride tetrahydrate p. A.	514	Potassium ferrocyanide trihydrate <i>BioChemica</i>	644	Sodium acetate anhydrous p. A.	720
Hydroxylammonium chloride p. A.	426	Manganese(II) sulfate monohydrate <i>BioChemica</i>	514	Potassium ferrocyanide trihydrate p. A.	644	Sodium acetate anhydrous pure USP, Food grade	720
Hydroxylammonium chloride pure	426	Manganese(II) sulfate monohydrate p. A.	514	Potassium ferrocyanide trihydrate pure	645	Sodium acetate trihydrate Molecular biology grade	720
Iodoacetic acid sodium salt <i>BioChemica</i>	456	Manganese(II) sulfate monohydrate pure Ph. Eur., USP	515	Potassium fluoride p. A.	645	Sodium acetate trihydrate <i>BioChemica</i>	721
Iron(II) chloride tetrahydrate p. A.	459	Mercury(II) sulfate p. A.	529	Potassium fluoride pure	645	Sodium acetate trihydrate p. A.	721
Iron(II) chloride tetrahydrate pure	459	Mercury(II) sulfate pure	530	Potassium hydrogen carbonate p. A.	645	Sodium acetate trihydrate pure Ph. Eur., USP	721
Iron(III) chloride hexahydrate p. A.	459	Molybdenum(IV) sulfide pure	548	Potassium hydrogen carbonate pure Ph. Eur., USP	646	Sodium benzoate pure Ph. Eur., NF	723
Iron(III) chloride hexahydrate pure	459	Nickel(II)-chloride hexahydrate <i>BioChemica</i>	565	<i>di</i> -Potassium hydrogen phosphate anhydrous Molecular biology grade	646	Sodium bromide p. A.	724
Iron(III) citrate hydrate Cell culture grade	460	Nickel(II) chloride hexahydrate p. A.	565	<i>di</i> -Potassium hydrogen phosphate anhydrous <i>BioChemica</i>	646	Sodium bromide pure Ph. Eur.	724
Iron(III) citrate hydrate pure	460	Nickel(II) chloride hexahydrate pure	565	<i>di</i> -Potassium hydrogen phosphate anhydrous p. A.	646	Sodium carbonate anhydrous <i>BioChemica</i>	724
Iron(III) nitrate nonahydrate <i>BioChemica</i>	460	Nickel(II) nitrate hexahydrate p. A.	565	<i>di</i> -Potassium hydrogen phosphate anhydrous pure Ph. Eur., USP	646	Sodium carbonate anhydrous p. A.	724
Iron(III) nitrate nonahydrate p. A.	461	Nickel(II) nitrate hexahydrate pure	566	<i>di</i> -Potassium hydrogen phosphate anhydrous Technical grade	646	Sodium carbonate anhydrous pure Ph. Eur., NF	724
Iron(III) nitrate nonahydrate pure	461	Nickel(II) sulfate hexahydrate p. A.	566	<i>di</i> -Potassium hydrogen phosphate trihydrate p. A.	646	Sodium carbonate decahydrate p. A.	725
Iron(II) sulfate heptahydrate <i>BioChemica</i>	461	Nickel(II) sulfate hexahydrate pure	566	Potassium hydrogen phthalate p. A.	647	Sodium carbonate decahydrate pure	726
Iron(II) sulfate heptahydrate p. A.	461	Palladium(II) chloride pure	590	Potassium iodate p. A.	654	Sodium chloride 99.9 %	726
Iron(II) sulfate heptahydrate pure Ph. Eur., USP	461	Potassium acetate Molecular biology grade	635	Potassium iodate pure FCC	654	Sodium chloride Molecular biology grade	726
Lead(II) acetate trihydrate pure	483	Potassium acetate <i>BioChemica</i>	635	Potassium iodide <i>BioChemica</i>	654	Sodium chloride <i>BioChemica</i>	726
Lithium acetate dihydrate p. A.	492	Potassium acetate p. A.	636	Potassium iodide p. A.	655	Sodium chloride p. A.	726
Lithium chloride Molecular biology grade	492	Potassium acetate pure Ph. Eur.	636	Potassium iodide pure Ph. Eur., USP	655	Sodium chloride pure Ph. Eur., USP	727
Lithium chloride <i>BioChemica</i>	492	Potassium aluminium sulfate dodecahydrate p. A.	636	Potassium nitrate <i>BioChemica</i>	656	Sodium chloride pure, free-flowing	727
Lithium chloride pure	493	Potassium aluminium sulfate dodecahydrate pure Ph. Eur., BP, USP	636	Potassium nitrate p. A.	656	<i>mono</i> -Sodium citrate pure	728
Magnesium acetate tetrahydrate ultrapure	502	Potassium bromide <i>BioChemica</i>	636	Potassium nitrate pure Ph. Eur., USP, Food grade	657	<i>tri</i> -Sodium citrate dihydrate Molecular biology grade	728
Magnesium acetate tetrahydrate p. A.	502	Potassium bromide p. A.	637	<i>di</i> -Potassium oxalate monohydrate <i>BioChemica</i>	657	<i>tri</i> -Sodium citrate dihydrate <i>BioChemica</i>	728
Magnesium acetate tetrahydrate pure Ph. Eur.	502	Potassium bromide pure Ph. Eur.	637	<i>di</i> -Potassium oxalate monohydrate p. A.	657	<i>tri</i> -Sodium citrate dihydrate p. A.	729
Magnesium chloride hexahydrate Molecular biology grade	503	Potassium carbonate p. A.	637	<i>di</i> -Potassium oxalate monohydrate pure	657	<i>tri</i> -Sodium citrate dihydrate Buffer grade	729
Magnesium chloride hexahydrate <i>BioChemica</i>	503	Potassium carbonate pure Ph. Eur., USP, Food grade	637	Potassium sodium tartrate tetrahydrate <i>BioChemica</i>	660	<i>tri</i> -Sodium citrate dihydrate pure Ph. Eur., USP	729
Magnesium chloride hexahydrate p. A.	503	Potassium carbonate Technical grade	637	Potassium sodium tartrate tetrahydrate p. A.	660	Sodium dihydrogen phosphate dihydrate Molecular biology grade	730
Magnesium chloride hexahydrate pure Ph. Eur., BP, USP, Food grade	503	Potassium chloride Molecular biology grade	638	Potassium sodium tartrate tetrahydrate pure USP	660	Sodium dihydrogen phosphate dihydrate <i>BioChemica</i>	730
Magnesium citrate pure	505	Potassium chloride Cell culture grade	638	Potassium sorbate powdered, pure Ph. Eur.	660	Sodium dihydrogen phosphate dihydrate p. A.	731
Magnesium hydroxide carbonate light p. A.	505	Potassium chloride <i>BioChemica</i>	638	Potassium sulfate <i>BioChemica</i>	660	Sodium dihydrogen phosphate dihydrate pure Ph. Eur., USP	731
Magnesium hydroxide carbonate light pure Ph. Eur., Food grade	505	Potassium chloride p. A.	638	Potassium sulfate p. A.	660	Sodium dihydrogen phosphate monohydrate Molecular biology grade	731
Magnesium nitrate hexahydrate p. A.	505	Potassium chloride pure Ph. Eur., USP	638	Potassium sulfate pure DAC	661	Sodium dihydrogen phosphate monohydrate Cell culture grade	731
Magnesium nitrate hexahydrate pure	505	Potassium chromate p. A.	640	Potassium thiocyanate <i>BioChemica</i>	661	Sodium dihydrogen phosphate monohydrate <i>BioChemica</i>	731
Magnesium stearate pure Ph. Eur.	506	<i>tri</i> -Potassium citrate monohydrate pure Ph. Eur., BP, USP, Food grade	641	Potassium thiocyanate p. A.	661	Sodium dihydrogen phosphate monohydrate p. A.	731
Magnesium sulfate dried p. A.	506	Potassium dihydrogen phosphate Molecular biology grade	642	Potassium thiocyanate pure	661	Sodium dihydrogen phosphate monohydrate pure USP	731
Magnesium sulfate dried pure BP	506	Potassium dihydrogen phosphate Cell culture grade	642	Rubidium chloride <i>BioChemica</i>	693	Sodium disulfite <i>BioChemica</i>	732
Magnesium sulfate anhydrous pure	506	Potassium dihydrogen phosphate <i>BioChemica</i>	643	Silver carbonate pure	713	Sodium disulfite p. A.	732
Magnesium sulfate heptahydrate Molecular biology grade	507	Potassium dihydrogen phosphate p. A.	643	Silver nitrate Molecular biology grade	713	Sodium disulfite pure Ph. Eur., NF	732
Magnesium sulfate heptahydrate Cell culture grade	507	Potassium dihydrogen phosphate pure Ph. Eur., NF	643	Silver nitrate <i>BioChemica</i>	713	Sodium fluoride <i>BioChemica</i>	733
Magnesium sulfate heptahydrate <i>BioChemica</i>	507	Potassium disulfite p.A.	643	Silver nitrate p. A.	713		
Magnesium sulfate heptahydrate p. A.	507						

Salts

Description	Page	Description	Page	Description	Page	Description	Page
Sodium fluoride p. A.	733	<i>di</i> -Sodium hydrogen phosphate dodecahydrate p. A.	736	Sodium pyrophosphate decahydrate <i>BioChemica</i>	750	Sodium thiosulfate anhydrous pure	756
Sodium fluoride pure Ph. Eur., USP	733	<i>di</i> -Sodium hydrogen phosphate dodecahydrate pure Ph. Eur., BP, USP	736	Sodium pyrophosphate decahydrate p. A.	750	Sodium thiosulfate pentahydrate for silver staining	756
Sodium hydrogen carbonate Cell culture grade	734	Sodium hydrogen tartrate monohydrate pure	737	Sodium selenite anhydrous pure	751	Sodium thiosulfate pentahydrate p. A.	756
Sodium hydrogen carbonate <i>Bio-Chemica</i>	734	Sodium iodate p. A.	745	Sodium sulfate anhydrous powdered Molecular biology grade	751	Sodium thiosulfate pentahydrate pure Ph. Eur., USP	756
Sodium hydrogen carbonate p. A.	734	Sodium iodide p. A.	745	Sodium sulfate anhydrous powdered <i>BioChemica</i>	751	Strontium chloride hexahydrate pure	775
Sodium hydrogen carbonate pure Ph. Eur., USP	734	Sodium iodide pure Ph. Eur., USP	745	Sodium sulfate anhydrous powdered p. A.	752	Tin(II) chloride dihydrate p. A.	817
<i>di</i> -Sodium hydrogen phosphate anhydrous Molecular biology grade	735	Sodium molybdate dihydrate <i>Bio-Chemica</i>	746	Sodium sulfate anhydrous powdered pure Ph. Eur., USP	752	Tin(II) chloride dihydrate pure Ph. Eur.	817
<i>di</i> -Sodium hydrogen phosphate anhydrous Cell culture grade	735	Sodium molybdate dihydrate Technical grade	746	Sodium sulfate decahydrate <i>Bio-Chemica</i>	752	Tin(II) chloride dihydrate Technical grade	817
<i>di</i> -Sodium hydrogen phosphate anhydrous <i>BioChemica</i>	735	Sodium nitrate <i>BioChemica</i>	746	Sodium sulfate decahydrate p. A.	752	Tin(II) sulfate pure	817
<i>di</i> -Sodium hydrogen phosphate anhydrous p. A.	735	Sodium nitrate p. A.	746	Sodium sulfate decahydrate pure Ph. Eur., USP	752	Zinc acetate dihydrate p. A.	875
<i>di</i> -Sodium hydrogen phosphate anhydrous pure Ph. Eur., BP, USP, Food grade	735	Sodium nitrate pure Food grade	747	Sodium sulfite anhydrous p. A.	752	Zinc acetate dihydrate pure Ph. Eur.	875
Sodium hydrogen phosphate dihydrate Molecular biology grade	735	Sodium nitrite pure Ph. Eur., USP	747	Sodium sulfite anhydrous pure Ph. Eur.	753	Zinc chloride Molecular biology grade	875
<i>di</i> -Sodium hydrogen phosphate dihydrate <i>BioChemica</i>	736	Sodium orthovanadate <i>BioChemica</i>	748	<i>di</i> -Sodium tartrate dihydrate p. A.	753	Zinc chloride p. A.	875
<i>di</i> -Sodium hydrogen phosphate dihydrate p. A.	736	Sodium perborate tetrahydrate p. A.	748	<i>di</i> -Sodium tartrate dihydrate pure Food grade	753	Zinc chloride pure Ph. Eur., USP	875
<i>di</i> -Sodium hydrogen phosphate dihydrate pure Ph. Eur., BP, USP	736	Sodium perborate tetrahydrate pure	748	<i>di</i> -Sodium tetraborate anhydrous p. A.	754	Zinc chloride Technical grade	876
<i>di</i> -Sodium hydrogen phosphate dodecahydrate <i>BioChemica</i>	736	Sodium perborate tetrahydrate Technical grade	748	<i>di</i> -Sodium tetraborate anhydrous pure	754	Zinc citrate dihydrate pure	876
		<i>tri</i> -Sodium phosphate dodecahydrate p. A.	749	<i>di</i> -Sodium tetraborate anhydrous pure	754	Zinc nitrate hexahydrate pure	876
		<i>tri</i> -Sodium phosphate dodecahydrate pure Food grade	749	<i>di</i> -Sodium tetraborate decahydrate p. A.	754	Zinc sulfate heptahydrate p. A.	877
				<i>di</i> -Sodium tetraborate decahydrate Technical grade	754	Zinc sulfate heptahydrate pure Ph. Eur., USP	877

Silylation reagents for GC

Description	Page	Description	Page	Description	Page	Description	Page
N,O-Bis-(trimethylsilyl)-acetamide	147	Dimethyldichlorosilane <i>BioChemica</i>	283	N-Methyl-N-(trimethylsilyl)-acetamide	543	Trimethylchlorosilane	834
N-Bis-(trimethylsilyl)-trifluoroacetamide	147	1,1,1,3,3,3-Hexamethyldisilazane GC grade	405	N-Methyl-N-(trimethylsilyl)-2,2,2-trifluoroacetamide	543	Trimethylsilyldiethylamine	834
N-(<i>tert</i> .-Butyldimethylsilyl)-N-methyltrifluoroacetamide	173					1-Trimethylsilylimidazole	834

Size Marker DNA for Gel Electrophoresis

Description	Page	Description	Page	Description	Page	Description	Page
DNA Ladder 100 bp (lyophilised)	319	DNA Ladder 250 bp plus (lyophilised)	321	DNA Marker pBR322 - <i>Hae</i> III (lyophilised)	322	DNA Marker Phage Lambda - <i>Hind</i> III (lyophilised)	324
DNA Ladder 100 bp	320	DNA Ladder 1 kb (lyophilised)	321	DNA Marker pBR322 - <i>Hae</i> III	323	DNA Marker Phage Lambda - <i>Hind</i> III	324
DNA Ladder 100 bp equalized (lyophilised)	320	DNA Ladder 1 kb	321	DNA Marker pBR328 Mix (lyophilised)	323	DNA Marker pUC19 - <i>Msp</i> I (lyophilised)	324
DNA Ladder 100 bp plus	320	DNA Ladder 1 kb concatamer (lyophilised)	322	DNA Marker Phage Lambda - <i>Sty</i> I	323	DNA Marker pUC19 - <i>Msp</i> I	324
DNA Ladder Mix 100 - 5000 (lyophilised)	320	DNA Marker quick-run (lyophilised)	322	DNA Marker Phage Lambda - <i>Bst</i> E II (lyophilised)	323		
DNA Ladder 250 bp (lyophilised)	321	DNA Marker quick-run extended (lyophilised)	322	DNA Marker Phage Lambda - <i>Bst</i> E II	323		

Size Marker Proteins for Gel Electrophoresis

Description	Page	Description	Page	Description	Page	Description	Page
Protein Marker I (14 - 116)	325	Protein Marker III (6.5 - 200)	325	Protein Marker V (10 - 175) pre-stained	325	Protein Marker VI (10 - 245) pre-stained	325
Protein Marker II (6.5 - 200) pre-stained	325	Protein Marker IV (10 - 150)	325				

Solvents

Description	Page	Description	Page	Description	Page	Description	Page
Acetone ultrapure	44	1-Chlorobutane for synthesis	203	N,N-Dimethylformamide dried, p. A.	284	Ethyl acetate pure	340
Acetone Residue analysis grade	44	Chloroform ultrapure	204	N,N-Dimethylformamide p. A.	285	Ethyl acetate for synthesis	340
Acetone HPLC grade	44	Chloroform Residue analysis grade	204	N,N-Dimethylformamide pure	285	Ethyl acetate Technical grade	340
Acetone <i>BioChemica</i>	44	Chloroform HPLC grade	204	N,N-Dimethylformamide for synthesis	285	Ethylene glycol <i>BioChemica</i>	341
Acetone dried p. A.	44	Chloroform GPC grade	204	N,N-Dimethylformamide D ₇	285	Ethylene glycol p. A.	341
Acetone p. A.	44	Chloroform <i>BioChemica</i>	204	Dimethyl sulfoxide Molecular biology grade	286	Ethylene glycol pure	341
Acetone pure Ph. Eur., NF	45	Chloroform dried, p. A.	204	Dimethyl sulfoxide HPLC grade	286	Ethylene glycol Technical grade	341
Acetone for synthesis	45	Chloroform p. A.	205	Dimethyl sulfoxide GPC grade	286	Ethylene glycol : Water - Mixture 1 : 1	342
Acetone Technical grade	45	Chloroform pure DAB 9, BP	205	Dimethyl sulfoxide Cell culture grade	286	Ethylene glycol monobutyl ether p. A.	342
Acetone D ₆	45	Chloroform pure	205	Dimethyl sulfoxide sterile filtered (ampules)	286	Ethylene glycol monobutyl ether for synthesis	342
Acetonitrile ultrapure	45	Chloroform Technical grade	205	Dimethyl sulfoxide <i>BioChemica</i>	287	Formaldehyde - Solution 37 % Molecular biology grade	355
Acetonitrile DNA synthesis and peptide sequencing grade	45	Cyclohexane Residue analysis grade	250	Dimethyl sulfoxide dried p.A.	287	Formaldehyde - Solution 37 % <i>BioChemica</i>	355
Acetonitril LC-MS grade	46	Cyclohexane HPLC grade	250	Dimethyl sulfoxide p. A.	287	Formaldehyde - Solution approx. 37 % Histology grade	356
Acetonitrile Residue analysis grade	46	Cyclohexane p. A.	251	Dimethyl sulfoxide pure Ph. Eur.	287	Formaldehyde - Solution 37 % p. A.	356
Acetonitrile for preparative HPLC	46	Cyclohexane pure	251	Dimethyl sulfoxide for synthesis	287	Formaldehyde - Solution 37 % pure Ph. Eur., BP, USP	356
Acetonitrile HPLC grade (fluorescence grade)	46	Cyclohexane Technical grade	251	1,4-Dioxane HPLC grade	289	Formaldehyde - Solution 37 % pure	356
Acetonitrile HPLC grade (gradient grade)	46	Cyclohexanol for synthesis	251	1,4-Dioxane dried, p. A.	289	Formaldehyde - Solution 37 % Technical grade	357
Acetonitrile HPLC grade	46	Cyclohexanone p. A.	252	1,4-Dioxane p. A.	289	Formaldehyde - Solution 37 % A.	357
Acetonitrile dried p. A.	46	Cyclohexanone pure	252	1,4-Dioxane D ₈	289	Formaldehyde - Solution 4 % pure	357
Acetonitrile p. A.	46	Cyclohexanone for synthesis	252	Ethanol HPLC grade	332	Formaldehyde - Solution 10 % phosphate buffered Histology grade	357
Acetonitrile pure	47	1-Decanol for synthesis	261	Ethanol absolute Molecular biology grade	332	Formaldehyde - Solution 10 % phosphate buffered pure	357
n-Amino-2-propanol pure	89	1,2-Dichloroethane HPLC grade	274	Ethanol absolute <i>BioChemica</i>	332	Formaldehyde - Solution approx. 4.5 % phosphate buffered Histology grade	358
n-Amyl alcohol p. A.	109	1,2-Dichloroethane pure	274	Ethanol absolute p. A.	333	Formaldehyde - Solution 4 % phosphate buffered pure	358
n-Amyl alcohol pure	109	Dichloromethane DNA synthesis and protein sequencing grade	275	Ethanol absolute pure Ph. Eur., USP	333	Formaldehyde - Solution 4 % phosphate buffered pure	358
n-Amyl alcohol for synthesis	109	Dichloromethane Residue analysis grade	275	Ethanol 99 % denaturated with 1 % MEK pure	333	Formaldehyde - Solution 4 % phosphate buffered Histology grade	358
AppliClear (Xylene substitute)	114	Dichloromethane HPLC grade	275	Ethanol 99 % denaturated with 1 % MEK Technical grade	333	Formamide ionized Molecular biology grade	358
Benzene p. A.	132	Dichloromethane dried, p. A.	275	Ethanol 99 % denaturated with 2 % Toluene pure	334	Formamide ultrapure	359
Benzene for synthesis	132	Dichloromethane p. A.	276	Ethanol 96 % <i>BioChemica</i>	334	Formamide <i>BioChemica</i>	359
Benzene D ₆	132	Dichloromethane pure Ph. Eur.	276	Ethanol 96 % p. A.	334	Formamide p. A.	359
Benzyl alcohol p. A.	135	Dichloromethane pure	276	Ethanol 96 % pure Ph. Eur., BP	334	Formamide pure	359
Benzyl alcohol pure Ph. Eur., NF	135	Dichloromethane for synthesis	276	Ethanol 96 % denaturated with 1 % MEK Technical grade	334	Glutaraldehyde - Solution 50 % EM grade	382
1-Bromo-3-chloropropane <i>BioChemica</i>	159	Dichloromethane Technical grade	276	Ethanol 94 % denaturated with Ketones Technical grade	335	Glutaraldehyde - Solution 50 % pure	382
1,3-Butanediol for synthesis	169	Diethylene glycol for synthesis	278	Ethanol 80 % technical grade denaturated with MEK	335	Glutaraldehyde - Solution 25 % EM grade	382
1,4-Butanediol for synthesis	170	Diethyl ether ultrapure	278	Ethanol 70 % <i>BioChemica</i>	335	Glycerol anhydrous Molecular biology grade	383
1-Butanol Molecular biology grade	170	Diethyl ether Residue analysis grade	278	Ethanol 70 % p.A.	335	Glycerol anhydrous Cell culture grade	384
1-Butanol HPLC grade	170	Diethyl ether HPLC grade	279	Ethanol 70 % pure DAB	336	Glycerol anhydrous <i>BioChemica</i>	384
1-Butanol p. A.	170	Diethyl ether dried, p. A.	279	Ethanol 70 % denaturated with Ketones Technical grade	336	Glycerol anhydrous p. A.	384
1-Butanol pure	171	Diethyl ether p. A.	279	Ethanol 68 % for alcohol determination in milk	336	Glycerol anhydrous pure Ph. Eur., USP	384
1-Butanol water-saturated <i>BioChemica</i>	171	Diethyl ether pure Ph. Eur.	279	Ethanol 40 % pure	336	Glycerol 99 % for synthesis	384
2-Butanol Molecular biology grade	171	Diethyl ether for synthesis	279	Ethanol D ₆ absolute	337	Glycerol 87 % Molecular biology grade	385
2-Butanol p. A.	171	Diethyl ether Technical grade	279	Ethyl acetate Peptide sequencing grade	339	Glycerol 87 % <i>BioChemica</i>	385
2-Butanol pure	172	Diethyl ether D ₁₀	280	Ethyl acetate Residue analysis grade	339	Glycerol 87 % p. A.	385
tert.-Butanol p. A.	172	Diisopropyl ether p. A.	281	Ethyl acetate HPLC grade	339	Glycerol 87 % pure Ph. Eur.	385
tert.-Butanol for synthesis	172	Diisopropyl ether Technical grade	282	Ethyl acetate LC-MS grade	339	Glycerol 87 % for synthesis	385
n-Butyl acetate HPLC grade	172	N,N-Dimethylacetamide pure	282	Ethyl acetate <i>BioChemica</i>	339		
n-Butyl acetate p. A.	173	N,N-Dimethylformamide Molecular biology grade	284	Ethyl acetate dried, p. A.	340		
n-Butyl acetate pure	173	N,N-Dimethylformamide HPLC grade	284	Ethyl acetate p. A.	340		
tert.-Butyl methyl ether p. A.	174	N,N-Dimethylformamide GPC grade	284	Ethyl acetate pure Ph. Eur.	340		
tert.-Butyl methyl ether pure	174	N,N-Dimethylformamide <i>BioChemica</i>	284				
tert.-Butyl methyl ether Technical grade	174						
1-Chlorobutane Protein sequencing grade	203						
1-Chlorobutane HPLC grade	203						
1-Chlorobutane p. A.	203						

Solvents

Description	Page	Description	Page	Description	Page	Description	Page
Glyoxal - Solution 40 % Molecular biology grade	388	Methanol HPLC grade (gradient grade)	534	Petroleum ether 60 - 80 dried, p. A.	609	Tetrahydrofuran p. A.	807
<i>n</i> -Heptane Peptide sequencing grade	403	Methanol HPLC grade (electrochemical detection)	534	Petroleum ether 60 - 80 p. A.	609	Tetrahydrofuran pure	807
<i>n</i> -Heptane Residue analysis grade	403	Methanol HPLC grade	534	Petroleum ether 60 - 80 pure	609	Tetrahydrofuran Technical grade	807
<i>n</i> -Heptane HPLC grade	403	Methanol Peptid sequencing grade	534	Petroleum ether 80 - 110 pure	610	Tetrahydrofuran D ₈	807
<i>n</i> -Heptane Fluorescence grade	403	Methanol <i>BioChemica</i>	534	Petroleum ether 100 - 140 pure	610	Toluene ultrapure	821
<i>n</i> -Heptane p. A.	403	Methanol dried p. A.	534	1,2-Propanediol pure Ph. Eur., USP	664	Toluene Residue analysis grade	821
<i>n</i> -Heptane pure	404	Methanol p. A.	534	1,2-Propanediol for synthesis	664	Toluene GPC grade	821
<i>n</i> -Heptane Technical grade	404	Methanol pure Ph. Eur.	535	1-Propanol HPLC grade	665	Toluene HPLC grade	822
<i>iso</i> -Hexane Residue analysis grade	406	Methanol for synthesis	535	1-Propanol dried, p. A.	665	Toluene dried, p. A.	822
<i>iso</i> -Hexane HPLC grade	406	Methanol Technical grade	535	1-Propanol p. A.	665	Toluene p. A.	822
<i>iso</i> -Hexane Fluorescence grade	406	Methanol D ₄	535	1-Propanol pure Ph. Eur.	665	Toluene pure	822
<i>iso</i> -Hexane p. A.	406	2-Methylbutane p. A.	537	1-Propanol pure	665	Toluene Technical grade	822
<i>iso</i> -Hexane pure	406	2-Methylbutane pure	537	2-Propanol Molecular biology grade	666	Toluene D ₈	822
<i>n</i> -Hexane Residue analysis grade (95 % <i>n</i> -Hexane)	406	Methyl ethyl ketone p. A.	538	2-Propanol Residue analysis grade	666	1,2,4-Trichlorobenzene GPC grade	830
<i>n</i> -Hexane HPLC grade (95 % <i>n</i> -Hexane)	407	Methyl ethyl ketone pure	538	2-Propanol HPLC grade (for electrochemical detection)	666	Trichloroethylene p. A.	830
<i>n</i> -Hexane Fluorescence grade (95 % <i>n</i> -Hexane)	407	4-Methyl-2-pentanone p. A.	541	2-Propanol HPLC grade	666	Trichloroethylene pure	830
<i>n</i> -Hexane dried, p. A.	407	4-Methyl-2-pentanone pure	541	2-Propanol <i>BioChemica</i>	667	Trichloroethylene for synthesis	830
<i>n</i> -Hexane p. A.	407	2-Methyltetrahydrofuran pure	543	2-Propanol dried, p. A.	667	Trifluoroacetic acid HPLC grade	833
<i>n</i> -Hexane pure	407	<i>n</i> -Octane <i>BioChemica</i>	580	2-Propanol p. A.	667	Water Cell culture grade	857
Isoamyl alcohol Molecular biology grade	463	1-Octanol for the isolation of plant nuclei	581	2-Propanol pure Ph. Eur., USP	667	Water DNA synthesis and protein sequencing grade	857
Isoamyl alcohol <i>BioChemica</i>	463	1-Octanol pure	581	2-Propanol pure	668	Water HPLC grade (for electrochemical detection)	858
Isoamyl alcohol p. A.	463	<i>n</i> -Pentane Residue analysis grade	602	2-Propanol for synthesis	668	Water Fluorescence grade	858
Isobutanol p. A.	463	<i>n</i> -Pentane HPLC grade	602	2-Propanol Technical grade	668	Water LC-MS grade	858
Isobutanol pure	463	<i>n</i> -Pentane p. A.	602	2-Propanol 70 % p. A.	668	Water HPLC grade	858
Isobutanol for synthesis	463	<i>n</i> -Pentane pure	603	2-Propanol 70 % pure	668	Water p. A.	858
Isooctane Residue analysis grade	464	<i>n</i> -Pentane Technical grade	603	2-Propanol 70 % Technical grade	669	Water bidistilled, sterile	858
Isooctane HPLC grade	465	Petroleum ether 30 - 40 p. A.	608	2-Propanol D ₈ (Isopropanol D ₈)	669	Water demineralized	858
Isooctane p. A.	465	Petroleum ether 30 - 40 pure	608	Pyridine dried, p. A.	677	Water D ₂	859
Isooctane for synthesis	465	Petroleum ether 30 - 50 pure	608	Pyridine p. A.	677	Xylene - Mixture of isomeres Histology grade	871
Isooctane Technical grade	465	Petroleum ether 40 - 60 Residue analysis grade	608	Pyridine D ₅	677	Xylene - Mixture of isomeres p. A.	871
Methanol ultrapure	533	Petroleum ether 40 - 60 dried, p. A.	609	Tetrachloroethylene pure	804	Xylene - Mixture of isomeres pure	871
Methanol Residue analysis grade	533	Petroleum ether 40 - 60 p. A.	609	Tetrahydrofuran GPC grade	806	Xylene - Mixture of isomeres for synthesis	871
Methanol LC-MS grade	533	Petroleum ether 40 - 60 pure DAB	609	Tetrahydrofuran LC-MS grade	806	Xylene - Mixture of isomeres Technical grade	871
Methanol HPLC grade (fluorescence grade)	533	Petroleum ether 60 - 80 Residue analysis grade	609	Tetrahydrofuran HPLC grade	806		
				Tetrahydrofuran dried, p. A.	806		

Standards: Element Standards for ICP and AAS

Description	Page	Description	Page	Description	Page	Description	Page
Aluminum standard solution 1000 mg/L for AAS	762	Iron standard solution 1000 mg/L for AAS	764	Silicon standard solution 1000 mg/L for AAS	766	Aluminium standard solution 1000 mg/L for ICP	767
Antimony standard solution 1000 mg/L for AAS	762	Lead standard solution 1000 mg/L for AAS	764	Silver standard solution 1000 mg/L for AAS	766	Antimony standard solution 1000 mg/L for ICP	768
Arsenic standard solution 1000 mg/L for AAS	763	Lithium standard solution 1000 mg/L for AAS	764	Sodium standard solution 1000 mg/L for AAS	766	Barium standard solution 1000 mg/L for ICP	768
Barium standard solution 1000 mg/L for AAS	763	Magnesium standard solution 1000 mg/L for AAS	764	Strontium standard solution 1000 mg/L for AAS	766	Boron standard solution 1000 mg/L for ICP	768
Boron standard solution 1000 mg/L for AAS	763	Manganese standard solution 1000 mg/L for AAS	765	Tellurium standard solution 1000 mg/L for AAS	766	Cadmium standard solution 1000 mg/L for ICP	768
Cadmium standard solution 1000 mg/L for AAS	763	Mercury standard solution 1000 mg/L for AAS	765	Tin standard solution 1000 mg/L for AAS	766	Calcium standard solution 1000 mg/L for ICP	768
Calcium standard solution 1000 mg/L for AAS	763	Molybdenum standard solution 1000 mg/L for AAS	765	Titanium standard solution 1000 mg/L for AAS	767	Chromium standard solution 1000 mg/L for ICP	768
Chromium standard solution 1000 mg/L for AAS	763	Nickel standard solution 1000 mg/L for AAS	765	Vanadium standard solution 1000 mg/L for AAS	767	Cobalt standard solution 1000 mg/L for ICP	769
Cobalt standard solution 1000 mg/L for AAS	764	Potassium standard solution 1000 mg/L for AAS	765	Zinc standard solution 1000 mg/L for AAS	767	Copper standard solution 1000 mg/L for ICP	769
Copper standard solution 1000 mg/L for AAS	764	Selenium standard solution 1000 mg/ml for AAS	765	Zirconium standard solution 1000 mg/L for AAS	767	Iron standard solution 1000 mg/L for ICP	769

Standards: Element Standards for ICP and AAS

Description	Page	Description	Page	Description	Page	Description	Page
Lead standard solution 1000 mg/L for ICP	769	Mercury standard solution 1000 mg/L for ICP	770	Selenium standard solution 1000 mg/L for ICP	770	Tellurium standard solution 1000 mg/L for ICP	771
Lithium standard solution 1000 mg/L for ICP	769	Molybdenum standard solution 1000 mg/L for ICP	770	Silver standard solution 1000 mg/L for ICP	771	Tin standard solution 1000 mg/L for ICP	771
Magnesium standard solution 1000 mg/L for ICP	769	Nickel standard solution 1000 mg/L for ICP	770	Sodium standard solution 1000 mg/L for ICP	771	Titanium standard solution 1000 mg/L for ICP	771
Manganese standard solution 1000 mg/L for ICP	770	Potassium standard solution 1000 mg/L for ICP	770	Strontium standard solution 1000 mg/L for ICP	771	Zinc standard solution 1000 mg/L for ICP	772

Standard volumetric solutions

Description	Page	Description	Page	Description	Page	Description	Page
Acetic acid - Standard volumetric solution (5 M)	42	Calcium chloride - Standard volumetric solution (0.1 M)	179	Hydrochloric acid - Standard volumetric solution (0.05 M)	419	Nitric acid - Standard volumetric solution (2 M)	571
Acetic acid - Standard volumetric solution (2 M)	42	Cer(IV) sulfate - Standard volumetric solution (0.1 M) Reagent Ph. Eur.	191	Hydrochloric acid - Standard volumetric solution (0.02 M)	419	Nitric acid - Standard volumetric solution (1 M)	571
Acetic acid - Standard volumetric solution (1 M)	42	Cer(IV) sulfate - Standard volumetric solution (0.1 M)	192	Hydrochloric acid - Standard volumetric solution (0.01 M)	419	Nitric acid - Standard volumetric solution (0.5 M)	571
Acetic acid - Standard volumetric solution (0.5 M)	42	Chloramine T - Standard volumetric solution (0.5 M)	201	Hydrochloric acid - Standard volumetric solution (0.005 M)	419	Nitric acid - Standard volumetric solution (0.1 M)	572
Acetic acid - Standard volumetric solution (0.1 M)	42	Chloramin T - Standard volumetric solution (0.05 M)	201	Hydrochloric acid - Standard volumetric solution (0.001 M)	419	Nitric acid - Standard volumetric solution (0.01 M)	572
Acetic acid - Standard volumetric solution (0.05 M)	42	Copper(II) sulfate - Standard volumetric solution (0.1 M)	244	Hydrofluoric acid - Standard volumetric solution (1 M)	421	Nitric acid - Standard volumetric solution (0.001 M)	572
Acetic acid - Standard volumetric solution (0.01 M)	43	Copper(II) sulfate - Standard volumetric solution (0.01 M)	244	Hydrofluoric acid - Standard volumetric solution (0.5 M)	421	Oxalic acid - Standard volumetric solution (0.25 M)	588
Ammonia - Standard volumetric solution (1 M)	92	EDTA disodium salt - Standard volumetric solution (0.2 M)	315	Hydrofluoric acid - Standard volumetric solution (0.1 M)	421	Oxalic acid - Standard volumetric solution (0.1 M)	588
Ammonium chloride - Standard volumetric solution (0.1 M)	95	EDTA disodium salt - Standard volumetric solution (0.1 M) contains 0.1 mol NaOH	315	Hydrofluoric acid - Standard volumetric solution (0.05 M)	421	Oxalic acid - Standard volumetric solution (0.05 M)	588
Ammonium iron(II) sulfate - Standard volumetric solution (0.5 M)	98	EDTA disodium salt - Standard volumetric solution (0.1 M)	315	Hydrofluoric acid - Standard volumetric solution (0.01 M)	421	Oxalic acid - Standard volumetric solution (0.01 M)	588
Ammonium iron(II) sulfate - Standard volumetric solution (0.25 M) for COD - determination	98	EDTA disodium salt - Standard volumetric solution (0.05 M)	315	Hydrogen peroxide - Standard volumetric solution (5 M)	424	Oxalic acid - Standard volumetric solution (0.05 M)	588
Ammonium iron(II) sulfate - Standard volumetric solution (0.2 M) for COD - determination	98	EDTA disodium salt - Standard volumetric solution (0.02 M) for metal titration	315	Hydrogen peroxide - Standard volumetric solution (1 M)	424	Perchloric acid - Standard volumetric solution (1 M)	606
Ammonium iron(II) sulfate - Standard volumetric solution (0.12 M) for COD-determination	98	EDTA disodium salt - Standard volumetric solution (0.01783 M) for metal titration	316	Hydrogen peroxide - Standard volumetric solution (0.1 M)	424	Perchloric acid - Standard volumetric solution (0.6 M)	606
Ammonium iron(II) sulfate - Standard volumetric solution (0.1 M)	98	EDTA disodium salt - Standard volumetric solution (0.01 M)	316	Iodine - Standard volumetric solution (0.5 M)	454	Perchloric acid - Standard volumetric solution (0.1 M) in Acetic acid anhydrous	607
Ammonium iron(II) sulfate - Standard volumetric solution (0.06 M) for COD-determination	98	EDTA disodium salt - Standard volumetric solution (0.005 M) for metal titration	316	Iodine - Standard volumetric solution (0.25 M)	454	Perchloric acid - Standard volumetric solution (0.1 M) in Acetic acid anhydrous	607
Ammonium iron(II) sulfate - Standard volumetric solution (0.05 M) for COD - determination	99	Hydrochloric acid - Standard volumetric solution (10 M)	416	Iodine - Standard volumetric solution (0.05 M)	455	Potassium bromate - Standard volumetric solution (1/60 M)	636
Ammonium iron(II) sulfate - Standard volumetric solution (0.025 M) for COD-determination	99	Hydrochloric acid - Standard volumetric solution (8 M)	416	Iodine - Standard volumetric solution (0.01 M)	455	Potassium chloride - Standard volumetric solution (0.5 M)	640
Ammonium iron(II) sulfate - Standard volumetric solution (0.02 M) for COD - determination	99	Hydrochloric acid - Standard volumetric solution (6 M) - mercury-free	417	Iodine - Standard volumetric solution (0.005 M)	455	Potassium chloride - Standard volumetric solution (0.1 M)	640
Ammonium iron(II) sulfate - Standard volumetric solution (0.015 M) for COD-determination	99	Hydrochloric acid - Standard volumetric solution (6 M)	417	Iron(II) sulfate - Standard volumetric solution (1 M)	462	Potassium chloride - Standard volumetric solution (0.01 M)	640
Ammonium iron(III) sulfate - Standard volumetric solution (0.01 M)	100	Hydrochloric acid - Standard volumetric solution (5 M)	417	Lanthanum nitrate - Standard volumetric solution (0.1 M)	479	Potassium dichromate - Standard volumetric solution (0.2 M) for COD-determination	641
Ammonium thiocyanate - Standard volumetric solution (0.1 M)	104	Hydrochloric acid - Standard volumetric solution (4 M)	417	Lead(II) nitrate - Standard volumetric solution (0.05 M)	483	Potassium dichromate - Standard volumetric solution (0.1 M) for COD-determination	642
Ammonium thiocyanate - Standard volumetric solution (0.01 M)	104	Hydrochloric acid - Standard volumetric solution (3 M)	417	Lead(II) nitrate - Standard volumetric solution (0.01 M)	483	Potassium dichromate - Standard volumetric solution (0.033 M) for COD-determination	642
Barium chloride - Standard volumetric solution (0.1 M)	128	Hydrochloric acid - Standard volumetric solution (2.5 M)	417	Magnesium chloride - Standard volumetric solution (1 M)	504	Potassium dichromate - Standard volumetric solution (0.02 M) for COD-determination	642
Barium chloride - Standard volumetric solution (0.05 M)	128	Hydrochloric acid - Standard volumetric solution (2 M)	418	Magnesium chloride - Standard volumetric solution (0.1 M)	504	Potassium dichromate - Standard volumetric solution (0.005 M) for COD-determination	642
Boric acid - Standard volumetric solution (0.5 M)	155	Hydrochloric acid - Standard volumetric solution (1 M)	418	Magnesium sulfate - Standard volumetric solution (1 M)	508	Potassium dichromate - Standard volumetric solution (0.005 M) for COD-determination	642
Boric acid - Standard volumetric solution (0.2 M)	155	Hydrochloric acid - Standard volumetric solution (0.5 M)	418	Magnesium sulfate - Standard volumetric solution (0.5 M)	508	Potassium hydroxide - Standard volumetric solution (6 M)	650
Boric acid - Standard volumetric solution (0.1 M)	155	Hydrochloric acid - Standard volumetric solution (0.25 M)	418	Magnesium sulfate - Standard volumetric solution (0.01 M)	508	Potassium hydroxide - Standard volumetric solution (3 M)	650
Calcium chloride - Standard volumetric solution (1 M)	179	Hydrochloric acid - Standard volumetric solution (0.2 M)	418	Nitric acid - Standard volumetric solution (10 M)	570	Potassium hydroxide - Standard volumetric solution (1 M)	650
		Hydrochloric acid - Standard volumetric solution (0.1 M)	418	Nitric acid - Standard volumetric solution (6 M)	571		
				Nitric acid - Standard volumetric solution (4 M)	571		

Standard volumetric solutions

Description	Page	Description	Page	Description	Page	Description	Page
Potassium hydroxide - Standard volumetric solution (0.5 M)	650	Potassium iodide - Standard volumetric solution (1 M)	656	Sodium acetate - Standard volumetric solution (0.5 M)	722	Sodium thiosulfate - Standard volumetric solution (0.5 M)	757
Potassium hydroxide - Standard volumetric solution (0.25 M)	651	Potassium iodide - Standard volumetric solution (0.1 M)	656	Sodium acetate - Standard volumetric solution (0.1 M)	722	Sodium thiosulfate - Standard volumetric solution (0.2 M)	757
Potassium hydroxide - Standard volumetric solution (0.1 M)	651	<i>di</i> -Potassium oxalate - Standard volumetric solution (0.25 M)	657	Sodium carbonate - Standard volumetric solution (0.5 M)	725	Sodium thiosulfate - Standard volumetric solution (0.1 M)	757
Potassium hydroxide - Standard volumetric solution (1 M) in non-denaturated ethanol (99.5 %)	651	Potassium permanganate - Standard volumetric solution (0.2 M)	658	Sodium carbonate - Standard volumetric solution (0.05 M)	725	Sodium thiosulfate - Standard volumetric solution (0.05 M)	757
Potassium hydroxide - Standard volumetric solution (0.5 M) in non-denaturated ethanol (99.5 %)	651	Potassium permanganate - Standard volumetric solution (0.1 M)	659	Sodium hydroxide - Standard volumetric solution (10 M)	742	Sodium thiosulfate - Standard volumetric solution (0.01 M)	757
Potassium hydroxide - Standard volumetric solution (0.1 M) in non-denaturated ethanol (99.5 %)	651	Potassium permanganate - Standard volumetric solution (0.02 M)	659	Sodium hydroxide - Standard volumetric solution (8 M)	742	Sulfuric acid - Standard volumetric solution (6 M)	784
Potassium hydroxide - Standard volumetric solution (0.1 M) in non-denaturated ethanol (99.5 %)	651	Potassium permanganate - Standard volumetric solution (0.01 M)	659	Sodium hydroxide - Standard volumetric solution (6 M)	742	Sulfuric acid - Standard volumetric solution (5 M)	784
Potassium hydroxide - Standard volumetric solution (1 M) in denaturated ethanol (99 %)	652	Potassium permanganate - Standard volumetric solution (0.005 M)	659	Sodium hydroxide - Standard volumetric solution (5 M)	742	Sulfuric acid - Standard volumetric solution (4 M)	784
Potassium hydroxide - Standard volumetric solution (0.5 M) in denaturated ethanol (99 %)	652	Potassium permanganate - Standard volumetric solution (0.002 M)	659	Sodium hydroxide - Standard volumetric solution (4 M)	742	Sulfuric acid - Standard volumetric solution (3 M)	784
Potassium hydroxide - Standard volumetric solution (0.5 M) in denaturated ethanol (99 %)	652	Potassium permanganate - Standard volumetric solution (0.001 M)	659	Sodium hydroxide - Standard volumetric solution (2 M)	743	Sulfuric acid - Standard volumetric solution (2.5 M)	784
Potassium hydroxide - Standard volumetric solution (0.5 M) in denaturated ethanol (80 %)	652	Potassium permanganate - Standard volumetric solution (0.0002 M)	659	Sodium hydroxide - Standard volumetric solution (1 M)	743	Sulfuric acid - Standard volumetric solution (2 M)	784
Potassium hydroxide - Standard volumetric solution (0.1 M) in denaturated ethanol (99 %)	652	Potassium thiocyanate - Standard volumetric solution (0.1 M)	662	Sodium hydroxide - Standard volumetric solution (0.5 M)	743	Sulfuric acid - Standard volumetric solution (1 M)	785
Potassium hydroxide - Standard volumetric solution (0.1 M) in denaturated ethanol (99 %)	652	Silver nitrate - Standard volumetric solution (1 M)	715	Sodium hydroxide - Standard volumetric solution (1/2.8 M)	743	Sulfuric acid - Standard volumetric solution (0.5 M)	785
Potassium hydroxide - Standard volumetric solution (0.05 M) in denaturated ethanol (99 %)	652	Silver nitrate - Standard volumetric solution (0.5 M)	715	Sodium hydroxide - Standard volumetric solution (0.33 M)	743	Sulfuric acid - Standard volumetric solution (0.25 M)	785
Potassium hydroxide - Standard volumetric solution (1 M) in methanol	653	Silver nitrate - Standard volumetric solution (0.4 M)	715	Sodium hydroxide - Standard volumetric solution (0.25 M)	744	Sulfuric acid - Standard volumetric solution (0.1 M)	785
Potassium hydroxide - Standard volumetric solution (0.5 M) in methanol	653	Silver nitrate - Standard volumetric solution (0.3 M)	715	Sodium hydroxide - Standard volumetric solution (0.2 M)	744	Sulfuric acid - Standard volumetric solution (0.05 M)	785
Potassium hydroxide - Standard volumetric solution (0.2 M) in methanol	653	Silver nitrate - Standard volumetric solution (0.25 M)	716	Sodium hydroxide - Standard volumetric solution (0.1 M)	744	Sulfuric acid - Standard volumetric solution (0.025 M)	786
Potassium hydroxide - Standard volumetric solution (0.1 M) in methanol	653	Silver nitrate - Standard volumetric solution (0.2 M)	716	Sodium hydroxide - Standard volumetric solution (0.05 M)	744	Sulfuric acid - Standard volumetric solution (0.01 M)	786
Potassium hydroxide - Standard volumetric solution (0.1 M) in 2-propanol	653	Silver nitrate - Standard volumetric solution (0.1 M)	716	Sodium hydroxide - Standard volumetric solution (0.02 M)	744	Sulfuric acid - Standard volumetric solution (0.005 M)	786
Potassium hydroxide - Standard volumetric solution (0.1 M) in 2-propanol	653	Silver nitrate - Standard volumetric solution (0.1 M) in methanol	716	Sodium hydroxide - Standard volumetric solution (0.01 M)	744	Tetrabutylammonium hydroxide - Standard volumetric solution (1 M) in methanol	803
Potassium hydroxide - Standard volumetric solution (0.1 M) in 2-propanol	653	Silver nitrate - Standard volumetric solution (0.05 M)	716	Sodium hydroxide - Standard volumetric solution (0.005 M)	744	Tetrabutylammonium hydroxide - Standard volumetric solution (0.1 M) in methanol	803
Potassium hydroxide - Standard volumetric solution (0.1 M) in 2-propanol	653	Silver nitrate - Standard volumetric solution (0.01 M)	717	Sodium hydroxide - Standard volumetric solution (0.001 M)	745	Zinc sulfate - Standard volumetric solution (0.1 M)	878
Potassium hydroxide - Standard volumetric solution (0.1 M) in 2-propanol	653	Silver nitrate - Standard volumetric solution (0.005 M)	717	Sodium thiosulfate - Standard volumetric solution (0.01 M)	755	Zinc sulfate - Standard volumetric solution (0.05 M)	878
Potassium iodate - Standard volumetric solution (1/60 M)	654	Silver nitrate - Standard volumetric solution (1/35.5 M)	717	Sodium thiosulfate - Standard volumetric solution (1 M)	757		

Technical grade chemicals

Description	Page	Description	Page	Description	Page	Description	Page
Acetone Technical grade	45	Ethyl acetate Technical grade	340	Hydrogen peroxide 30 % Technical grade	423	Sodium hydroxide pearls technical grade	737
Ammonia - Solution 32 % Technical grade	91	Ethylene glycol Technical grade	341	Iron(II) sulfate heptahydrate Technical grade	461	Sodium hydroxide pellets Technical grade	738
Ammonia - Solution 25 % Technical grade	91	Ethylene glycol - Technical grade with corrosion inhibitor	342	Methanol Technical grade	535	Sodium hydroxide - Solution 32 % Technical grade	740
Ammonium chloride Technical grade	95	Formaldehyde - Solution 37 % Technical grade	357	Nitric acid 20 % Technical grade	569	Sodium hydroxide - Solution 25 % technical grade	740
Ammonium nitrate Technical grade	101	Formic acid 98 - 100 % Technical grade	360	Oxalic acid dihydrate technical grade	587	Sodium hydroxide - Solution 4 % Technical grade	741
<i>tert</i> -Butyl methyl ether Technical grade	174	Formic acid 85 % Technical grade	361	<i>n</i> -Pentane Technical grade	603	Sodium hypochlorite - Solution 13 % Technical grade	745
Calcium chloride granulated, Technical grade	177	Glycerol 99 % Technical grade	385	Potassium carbonate Technical grade	637	Sodium perborate tetrahydrate Technical grade	748
Chloroform Technical grade	205	Glycerol 87 % Technical grade	385	Potassium chloride Technical grade	638	<i>di</i> -Sodium tetraborate decahydrate Technical grade	754
Citric acid monohydrate Technical grade	214	Hydrobromic acid approx. 48 % Technical grade	411	Potassium dichromate Technical grade	641	Sulfuric acid 37 % Technical grade (Battery acid)	783
Citric acid - Solution 50 % Technical grade	215	Hydrochloric acid 32 % Technical grade	412	Potassium hydroxide - Pellets Technical grade	648	Tetrahydrofuran Technical grade	807
Cyclohexane Technical grade	251	Hydrochloric acid 25 % Technical grade	413	Potassium sulfate Technical grade	661	Toluene Technical grade	822
Dichloromethane Technical grade	276	Hydrochloric acid 10 % Technical grade	414	2-Propanol Technical grade	668	Tris Technical grade	836
Diethyl ether Technical grade	279	Hydrogen peroxide 35 % Technical grade	422	2-Propanol 70 % Technical grade	669		

Technical grade chemicals

Description	Page	Description	Page	Description	Page	Description	Page
Urea Technical grade	850	Xylene - Mixture of isomers Technical grade	871				

Transfection Reagents

Description	Page	Description	Page	Description	Page	Description	Page
AppliFect	114	AppliFect Insect	115	AppliFect LowTox	115	AppliFect SI	115

Transfer membranes

Description	Page	Description	Page	Description	Page	Description	Page
Reprobe Nitrocellulose supported 0.22 µm Transfer Membrane	825	Pure Nitrocellulose unsupported 0.22 µm Transfer Membrane	825	Pure Nylon Neutral Transfer Membrane 0.22 µm (30 cm x 3 m)	826	Reprobe Nylon Positively Charged Transfer Membrane 0.45 µm (30 cm x 3 m)	827
Reprobe Nitrocellulose supported 0.45 µm Transfer Membrane	825	Pure Nitrocellulose unsupported 0.45 µm Transfer Membrane	826	Pure Nylon Neutral Transfer Membrane 0.45 µm	826	PVDF-Star Transfer Membrane 0.45 µm	827

Vitamins

Description	Page	Description	Page	Description	Page	Description	Page
4-Aminobenzoic acid <i>BioChemica</i>	86	Folic acid crystalline pure Ph. Eur., USP	354	Pyridoxin hydrochloride <i>Bio-Chemica</i>	678	DL-α-Tocopherol <i>BioChemica</i>	821
L(+)-Ascorbic acid powdered <i>Bio-Chemica</i>	120	Menadiione	528	Pyridoxine hydrochloride pure Ph. Eur., USP	678	DL-α-Tocopherol acetate <i>Bio-Chemica</i>	821
D(+)-Biotin <i>BioChemica</i>	140	Nicotinamide pure Ph. Eur., USP	566	Riboflavin <i>BioChemica</i>	687	Vitamin A acetate	856
L-Carnitine <i>BioChemica</i>	186	Nicotinic acid pure Ph. Eur., USP	567	Riboflavin pure Ph. Eur., USP	687	Vitamin B ₁₂	856
Flavin mononucleotide monosodium salt dihydrate <i>BioChemica</i>	352	D-Pantothenic acid calcium salt <i>BioChemica</i>	590	Thiamine hydrochloride <i>Bio-Chemica</i>	811	Vitamin B ₁₂ pure Ph. Eur.	856
Folic acid crystalline <i>BioChemica</i>	354	Pyridoxal hydrochloride <i>Bio-Chemica</i>	678	Thiamine hydrochloride pure Ph. Eur.	811	Vitamin D ₂	856

Water Analysis Test Kits

Description	Page	Description	Page	Description	Page	Description	Page
AppliQUA™ NT Aluminium	859	AppliQUA™ NT Cyanide	860	AppliQUA™ NT Manganese	862	AppliQUA™ NT Phosphate N	863
AppliQUA™ NT Ammonium	859	AppliQUA™ NT Iron H	861	AppliQUA™ NT Nickel	862	AppliQUA™ NT Oxygen	863
AppliQUA™ NT Ammonium H	859	AppliQUA™ NT Iron N	861	AppliQUA™ NT Nitrate H	862	AppliQUA™ NT Silicate H	864
AppliQUA™ NT Arsenic	859	AppliQUA™ NT Fluoride H	861	AppliQUA™ NT Nitrate N	862	AppliQUA™ NT Silicate N	864
AppliQUA™ NT Boron	859	AppliQUA™ NT Fluoride N	861	AppliQUA™ NT Nitrite	862	AppliQUA™ NT Sulfate	864
AppliQUA™ NT Calcium	860	AppliQUA™ NT Formaldehyde	861	AppliQUA™ NT pH in sea water	863	AppliQUA™ NT Sulfite	864
AppliQUA™ NT Chlorine and pH	860	AppliQUA™ NT Hydrazine	861	AppliQUA™ NT pH in fresh water	863	AppliQUA™ NT Tannin and Lignin	864
AppliQUA™ NT Chloride	860	AppliQUA™ NT Hydrogensulfide	861	AppliQUA™ NT Phenols	863	AppliQUA™ NT Zinc	864
AppliQUA™ NT Chromate	860	AppliQUA™ NT Copper	862	AppliQUA™ NT Phosphate H	863		
AppliQUA™ NT COD	860	AppliQUA™ NT Magnesium	862	AppliQUA™ NT Phosphate M	863		

A23187

B

Calcium ionophore A23187, Calcimycin

$C_{29}H_{37}N_3O_6$
 $M = 523.62$ g/mol
 CAS-No.: 52665-69-7
 HS-No.: 29419000
 EC-No.: 258-084-1

Storage: 2-8°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

Warning
 H332-H312-H302
 P330-P301+P310



Melting point 181 - 182°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A2110,0005	5 mg
A2110,0010	10 mg

Literature: (1) Reed, P.W. & Lardy, H.A. (1972) *J. Biol. Chem.* **247**, 6970-6977
 (2) Pressman, B.C. (1976) *Ann. Rev. Biochem.* **45**, 501-530
 (3) Saunders, M.J. & Hepler, P.K. (1982) *Science* **217**, 943-945
 (4) Beaven, M.A. *et al.* (1987) *J. Cell Biol.* **105**, 1129-1136
 (5) Caron-Leslie, L.-U.-M. *et al.* (1994) *FASEB J.* **8**, 639-645

A23187: A divalent cation ionophore.
 Review: Biological applications of ionophores.
 Ca ionophore A23187 stimulates Cytokinin-like mitosis in *Funaria*.
 Synergistic signals in the mechanism of antigen-induced exocytosis in 2H3 cells:
 Evidence for an unidentified signal required for Histamine release.
 Bcl-2 inhibits glucocorticoid-induced apoptosis, but only partially blocks Ca ionophore
 or cycloheximide-regulated apoptosis in S49 cells.

Comment: A23187 is a carboxylic acid antibiotic with ionophore activity, isolated from *Streptomyces chartreusensis*. This ionophore selectively transports divalent cations ($Mn^{2+} > Ca^{2+} > Mg^{2+}$) through biological membranes. Therefore, it is widely used as a tool for studying the activity of calcium (1, 2). The intracellular calcium concentration increases upon treatment with A23187. Many effects can be monitored, depending on the cell type, like apoptosis (5), release of histamine (4) or cell division (3). The Calcium ionophore A23187 is soluble in 100 % DMSO, methanol or chloroform, but almost insoluble in water. It will precipitate, if stored in aqueous solutions. Stock solutions are prepared with a concentration of 15 mM (3) or up to 100 mM (5) and stored at +4°C (5). The working concentration depends on the test system (recommended conc. 2 - 2.5 mM). It should be taken into consideration, that the solvent may influence the test system. In reference 3, methanol was used instead of DMSO. A milky precipitate of the ionophore was observed, when added to the culture medium of *Funaria* protonema, resulting in a reduced 'effective' working concentration (40 µM). Please note, that A23187 interferes with the fluorescence of Ca^{2+} /quintal at concentrations above 200 mM (4). **Stability** The dry substance may be stored up to 4 years. Stock solutions are stable for 2 months at -20°C.

4-Bromo-A23187 see 4-Bromo-A23187 BioChemica Page 159

A23187 calcium magnesium salt BioChemica

B

Calcimycin calcium magnesium salt
 from *Streptomyces chartreusensis*

$(C_{29}H_{36}N_3O_6)_2 \cdot \frac{1}{2}Mg \frac{1}{2}Ca$
 $M = 1077.42$ g/mol
 HS-No.: 29419000

Storage: 2-8°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

Warning
 H332-H312-H302
 P330-P301+P310



Solubility (10 mg/ml Dichloromethane)
 clear, colorless

Specification:

Assay (TLC) approx. 98 %
 λ_{max} (MeOH) 227, 302, 371 nm

Order-No.	Quantity
A7847,0001	1 mg
A7847,0005	5 mg
A7847,0010	10 mg

7AAD see 7-Aminoactinomycin D BioChemica Page 85

AA-dUTP see Deoxyribonucleotides with aminolinkers Page 267

17AAG see 17-(Allylamino)-17-demethoxy-geldanamycin BioChemica Page 81

ABTS® BioChemica

B

2,2'-Azino-bis-(3-ethylbenzthiazoline-
 6-sulfonic acid) diammonium salt

$C_{18}H_{24}N_6O_6S_4$
 $M = 548.69$ g/mol
 CAS-No.: 30931-67-0
 HS-No.: 29339980
 EC-No.: 250-396-6

Storage: 2-8°C
 LGK: 10 - 13

WGK: 3
 Warning
 H335-H315-H319
 P305+P351+P338



Melting point > 300°C (dec.)

Specification:

E 0.001 %/1 cm, 340 nm ... min. 38000
 Solubility (2 %; H₂O) clear, green
 TLC complies
 Loss on drying max. 6 %

Order-No.	Quantity
A1088,0001	1 g
A1088,0005	5 g
A1088,0010	10 g

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Literature: (1) Childs, R.E. & Bardsley, W.G. (1975) *Biochem. J.* **145**, 93-103
 (2) Bruss, M.L. & Black, A.L. (1978) *Anal. Biochem.* **84**, 309-312
 (3) Gallati, H. (1979) *J. Clin. Chem. Clin. Biochem.* **17**, 1-7
 (4) Mäkinen, K.K. & Tenovu, J. (1982) *Anal. Biochem.* **126**, 100-108
 (5) Szutowicz, A. *et al.* (1984) *Anal. Biochem.* **138**, 86-94

The steady-state kinetics of peroxidase with ABTS as chromogen.
 Enzymatic micro determination of glycogen.
 Horseradish peroxidase: determination of the activity with H₂O₂ and ABTS.
 Observations on the use of guaiacol and ABTS as Peroxidase substrates.
 Colorimetric determination of monoaminoxidase with ABTS and Peroxidase.

Comment: At concentrations above 56 mM, ABTS is insoluble. Heating facilitates dissolution of ABTS, e. g. in 0.1 M phosphate buffer. If it crystallizes upon cooling (e. g. at concentrations of 1 mg/ml), the supernatant can be used. This behavior can be used to separate excess of ABTS (2). At concentrations below 0.002 mM, it may happen, that, depending on the peroxidase concentration, the substrate ABTS will be completely used up and measurements of enzyme activity will be carried out in the non-linear range. Absorption maxima of ABTS are found at 340 nm and 414 nm, respectively. Usually, measurements will be performed at 420 nm. Solutions of ABTS in 0.5 M phosphate-citrate buffer (pH 4.0) are stable for at least one month, if stored at +4°C (5).

Aburamycin B see Chromomycin A3 BioChemica Page 211

Acacetin HPLC grade

B

Apigenin-4'-methyl ether, Linarigenin,
5,7-Dihydroxy-4'-methoxyflavone
from *Robinia pseudoacacia*

C₁₆H₁₂O₅
M = 284.26 g/mol
CAS-No.: 480-44-4
HS-No.: 29329900

Storage: 2-8°C

Warning
H335-H302
P301+P312-P330-P261



Specification:

Assay min. 99 %

Order-No.	Quantity
A7817,0020	20 mg
A7817,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Acacetin-7-rutinoside see Linarin HPLC grade Page 489

ACES

N-(2-Acetamido)-2-aminoethanesulfonic
acid

C₄H₁₀N₂O₄S
M = 182.20 g/mol
CAS-No.: 7365-82-4
HS-No.: 29241900
EC-No.: 230-908-4

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point 290°C (dec.)
Useful pH range pH 6.1 - 7.5
pK_a (20°C) 6.88

ACES Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
pH (1 %; H₂O) 3.5 - 4.5 (20°C)
Water (K.F.) max. 0.3 %

A (1 cm/5 % in H₂O)
260 nm max. 0.04
280 nm max. 0.02

Order-No.	Quantity
A3986,0025	25 g
A3986,0100	100 g

ACES Buffer grade

B

Specification:

Assay (titr.) min. 99 %
pH (1 %; H₂O; 20°C) 3.5 - 4.5
Water (K.F.) max. 0.3 %

A (1 cm/5 % in H₂O)
260 nm max. 0.04
280 nm max. 0.02

Order-No.	Quantity
A1060,0025	25 g
A1060,0100	100 g
A1060,0250	250 g
A1060,0500	500 g
A1060,1000	1 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
(2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68

Hydrogen ion buffers for biological research.
Hydrogen ion buffers.

Comment: ACES is a zwitterionic buffer. A saturated solution contains 0.22 M at 0°C. The buffer substance is used e. g. for the uncoupled electron transport in chloroplast lamellae. ACES binds Cu²⁺, but not significantly Mg²⁺, Ca²⁺ or Mn²⁺.

Acetamide Molecular biology grade

B

Acetic acid amide

C₂H₅NO
M = 59.07 g/mol
CAS-No.: 60-35-5
HS-No.: 29241900
EC-No.: 200-473-5

Storage: RT
LGK: 10 - 13
Disposal: 9

WGK: 1
Warning
H351
P281-P308+P313



Boiling point 105°C (13" hPa)
Melting point 78 - 81°C

Specification:

DNases/RNases/Proteases not detectable
Assay min. 99 %
Free acid max. 0.1 %

Heavy metals max. 0.001 %
Solubility (10 %; H₂O) clear, colorless
Water (K.F.) max. 0.1 %

Order-No.	Quantity
A1464,0050	50 g
A1464,0100	100 g

Comment: Molten Acetamide is an excellent solvent for many organic and inorganic substances. One gram of this substance dissolves in 0.5 ml water or 2 ml ethanol. Acetamide is soluble in chloroform or glycerol.

N-(2-Acetamido)-2-aminoethanesulfonic acid see ACES Page 38

2-Acetamido-2-deoxy-D-galactose see N-Acetyl-D-galactosamine Page 49

2-Acetamido-2-deoxy-D-glucose see N-Acetyl-D-glucosamine *BioChemica* Page 49

N-(2-Acetamido)-iminodiacetic acid see ADA Buffer grade Page 67

2-Acetamido-3-mercaptopropionic acid see N-Acetyl-L-cysteine *BioChemica* Page 48

Acetic acid (≥ 90 %)

C₂H₄O₂
M = 60.05 g/mol
CAS-No.: 64-19-7
HS-No.: 29152100
EC-No.: 200-580-7

Storage: RT
LGK: 3 A
Disposal: 4

Class / PG: 8(3)/II
UN2789
WGK: 1
Danger
H314-H226
P307-P301+P330+P331-P280-
P305+P351+P338



Acetic acid 100 % Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.7 %
Heavy metals (as Pb) max. 0.0005 %
Non-volatile matter max. 0.001 %
Anhydride max. 0.05 %

Formic acid max. 0.01 %
Water (K.F.) max. 0.2 %
Chloride max. 0.0002 %
Sulfate max. 0.0005 %

Order-No.	Quantity
A3686,0500	500 ml
A3686,1000	1 L
A3686,10006	6 x 1 L
A3686,2500	2.5 L

Acetic acid 100 % ultrapure

C

Specification:

Assay (titr.) min. 99.8 %
Aldehydes max. 0.0002 %
Anhydrides max. 0.01 %
Loss on drying max. 0.05 %
Chloride max. 0.0001 %
Phosphate max. 0.0001 %

Sulfate max. 0.0001 %
As max. 0.00005 %
Cd max. 0.00005 %
Co max. 0.00005 %
Cr max. 0.00005 %
Fe max. 0.0001 %

K max. 0.0001 %
Mg max. 0.00005 %
Pb max. 0.00005 %
Zn max. 0.00005 %

Order-No.	Quantity
A1692,0250	250 ml
A1692,0500	500 ml
A1692,1000	1 L
A1692,10006	6 x 1 L

Acetic acid 100 % HPLC grade

C

Specification:

Assay (HPLC) min. 99.7 %
Non-volatile matter max. 0.0002 %
Water (K.F.) max. 0.1 %

A (1 cm/water HPLC grade)
260 nm max. 0.10
270 nm max. 0.02
280 nm max. 0.02

Order-No.	Quantity
A2354,0500	500 ml
A2354,1000	1 L
A2354,10006	6 x 1 L
A2354,2500	2.5 L

Acetic acid 100 % BioChemica

B

Specification:

Assay (titr.) min. 99.7 %
Heavy metals (as Pb) max. 0.0005 %
Non-volatile matter max. 0.001 %
Anhydrides max. 0.05 %
Formic acid max. 0.01 %
Water (K.F.) max. 0.2 %
Chloride max. 0.0002 %
Sulfate max. 0.0005 %

Order-No.	Quantity
A3701,0500GL	500 ml
A3701,0500PE	500 ml
A3701,1000GL	1 L
A3701,1000PE	1 L
A3701,2500GL	2.5 L
A3701,2500PE	2.5 L
A3701,5000	5 L

Acetic acid 100 % p. A.

C

Specification:

Assay (titr.) min. 99.7 %
Non-volatile matter max. 0.001 %
Total N max. 0.0001 %
Total Si max. 0.0001 %
Anhydride max. 0.05 %
Formic acid max. 0.01 %
Water (K.F.) max. 0.2 %
Chloride max. 0.0001 %
Phosphate max. 0.0001 %
Sulfate max. 0.0001 %
Cr max. 0.00001 %
Fe max. 0.00001 %
K max. 0.00001 %
Mg max. 0.00001 %
Na max. 0.0002 %
Ni max. 0.00001 %
Pb max. 0.00001 %

Zn max. 0.00001 %

Order-No.	Quantity
A0820,0100	100 ml
A0820,0500GL	500 ml
A0820,0500PE	500 ml
A0820,1000GL	1 L
A0820,10006GL	6 x 1 L
A0820,1000PE	1 L
A0820,10006PE	6 x 1 L
A0820,2500GL	2.5 L
A0820,25004GL	4 x 2.5 L
A0820,2500PE	2.5 L
A0820,25004PE	4 x 2.5 L
A0820,5000	5 L
A0820,9010	10 L
A0820,9025	25 L

Acetic acid 100 % pure Ph. Eur., USP, E 260

C

Specification:

Assay (titr.) 99.5 - 100.5 %
Appearance of substance clear, colorless
Heavy metals (as Pb) max. 0.0005 %
Identity complies
Non-volatile matter max. 0.005 %
Readily oxid. subst. complies
Red. substances complies
Solidification temp. ≥ 15.6°C
Chloride max. 25 mg/L

Sulfate max. 50 mg/L
Al max. 0.00005 %
Fe max. 0.0005 %

Order-No.	Quantity
A0662,1000	1 L
A0662,10006	6 x 1 L
A0662,2500	2.5 L
A0662,25004	4 x 2.5 L
A0662,5000	5 L
A0662,9010	10 L
A0662,9025	25 L

Acetic acid 99 - 100 % for synthesis

C

Specification:

Assay (titr.) min. 99 %
 Formic acid max. 0.1 %

Order-No.	Quantity
A0661,1000	1 L
A0661,10006	6 x 1 L
A0661,2500	2.5 L
A0661,25004	4 x 2,5 L
A0661,5000	5 L
A0661,9010	10 L
A0661,9025	25 L

Acetic acid 98 - 100 % Technical grade

C

Specification:

Assay (titr.) approx. 98 %

Order-No.	Quantity
A2083,2500	2.5 L
A2083,25004	4 x 2,5 L
A2083,5000	5 L
A2083,9010	10 L
A2083,9025	25 L

Acetic acid 96 % p. A.

C

Specification:

Assay (titr.) min. 96 %
 Non-volatile matter max. 0.001 %
 Total N max. 0.0001 %
 Total Si max. 0.0001 %
 Anhydride max. 0.05 %
 Formic acid max. 0.01 %
 Chloride max. 0.0001 %
 Phosphate max. 0.0001 %
 Sulfate max. 0.0001 %
 Cr max. 0.00001 %

Fe max. 0.00001 %
 K max. 0.00001 %
 Mg max. 0.00001 %
 Na max. 0.0002 %
 Ni max. 0.00001 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A2618,0500	500 ml
A2618,1000	1 L
A2618,10006	6 x 1 L
A2618,2500	2.5 L
A2618,25004	4 x 2,5 L
A2618,5000	5 L
A2618,9010	10 L
A2618,9025	25 L

Acetic acid 96 % pure

C

Specification:

Assay (titr.) min. 96 %
 Formic acid max. 0.05 %
 Chloride max. 0.0005 %
 Sulfate max. 0.0005 %
 As max. 0.0003 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Pb max. 0.0005 %
 Zn max. 0.0005 %

Order-No.	Quantity
A0458,1000	1 L
A0458,10006	6 x 1 L
A0458,2500	2.5 L
A0458,25004	4 x 2,5 L
A0458,5000	5 L
A0458,9010	10 L
A0458,9025	25 L

Acetic acid 96 % Technical grade

C

Specification:

Assay (titr.) approx. 96 %

Order-No.	Quantity
A4489,2500	2.5 L
A4489,25004	4 x 2,5 L
A4489,5000	5 L
A4489,9010	10 L
A4489,9025	25 L

Acetic acid 90 % Technical grade

C

Specification:

Assay (titr.) approx. 90 %

Order-No.	Quantity
A4599,1000	1 L
A4599,10006	6 x 1 L
A4599,2500	2.5 L
A4599,25004	4 x 2,5 L
A4599,5000	5 L
A4599,9010	10 L

Acetic acid (>50 % - ≤ 80 %)

C₂H₄O₂
M = 60.05 g/mol
 CAS-No.: 64-19-7
 HS-No.: 29152100

Storage: RT
 LGK: 8 B

Class / PG: 8/II
 UN2790
 WGK: 1
 Danger
 H314
 P305+P351+P338-P303+P361+P353-
 P301+P330+P331-P310-P280-P307

**Acetic acid 80 % Technical grade**

C

Specification:

Assay (titr.) approx. 80 %

Order-No.	Quantity
A4442,2500	2.5 L
A4442,25004	4 x 2,5 L
A4442,5000	5 L
A4442,9010	10 L
A4442,9025	25 L

Acetic acid 60 % p. A.

C

Specification:

Assay (titr.)	min. 60 %
Non-volatile matter	max. 10 ppm
Total N	max. 0.0001 %
Total Si	max. 0.0001 %
Anhydride	max. 0.05 %
Formic acid	max. 0.01 %

Chloride	max. 0.0001 %
Phosphate	max. 0.0001 %
Sulfate	max. 0.0001 %
Cr	max. 0.00001 %
Fe	max. 0.00001 %
K	max. 0.00001 %

Mg	max. 0.00001 %
Na	max. 0.0002 %
Ni	max. 0.00001 %
Pb	max. 0.00001 %
Zn	max. 0.00001 %

Order-No.	Quantity
A3383,0500	500 ml
A3383,1000	1 L
A3383,10006	6 x 1 L
A3383,2500	2.5 L

Acetic acid 60 % pure

C

Specification:

Assay (titr.)	min. 60 %
Formic acid	max. 0.05 %
Chloride	max. 0.0005 %
Sulfate	max. 0.0005 %

Cu	max. 0.0005 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %
Zn	max. 0.0005 %

Order-No.	Quantity
A4595,2500	2.5 L
A4595,25004	4 x 2.5 L
A4595,5000	5 L

Acetic acid 60 % Technical grade

C

Specification:

Assay (titr.)	approx. 60 %

Order-No.	Quantity
A0369,2500	2.5 L
A0369,25004	4 x 2.5 L
A0369,5000	5 L
A0369,9010	10 L
A0369,9025	25 L

Acetic acid (25 %- < 50 %)

C₂H₄O₂
M = 60.05 g/mol
CAS-No.: 64-19-7
HS-No.: 29152100

Storage: RT
LGK: 8 B

Class / PG: 8/III
UN2790
WGK: 1
Danger
H314
P301+P330+P331-P307-
P305+P351+P338-P303+P361+P353-
P280-P310



Acetic acid 30 % p. A.

C

Specification:

Assay (titr.)	min. 30 %
Non-volatile matter	max. 10 ppm
Total N	max. 0.0001 %
Total Si	max. 0.0001 %
Anhydride	max. 0.05 %
Formic acid	max. 0.01 %
Chloride	max. 0.0001 %

Phosphate	max. 0.0001 %
Sulfate	max. 0.0001 %
Cr	max. 0.00001 %
Fe	max. 0.00001 %
K	max. 0.00001 %
Mg	max. 0.00001 %
Na	max. 0.0002 %

Ni	max. 0.00001 %
Pb	max. 0.00001 %
Zn	max. 0.00001 %

Order-No.	Quantity
A0391,0500	500 ml
A0391,1000	1 L
A0391,10006	6 x 1 L
A0391,2500	2.5 L
A0391,5000	5 L
A0391,9010	10 L

Acetic acid 25 % Technical grade

C

Specification:

Assay (titr.)	approx. 25 %

Order-No.	Quantity
A4817,2500	2.5 L
A4817,25004	4 x 2.5 L
A4817,5000	5 L
A4817,9010	10 L
A4817,9025	25 L

Acetic acid 10 % pure

C

C₂H₄O₂
M = 60.05 g/mol
CAS-No.: 64-19-7
HS-No.: 29152100
EC-No.: 200-580-7

Storage: RT
LGK: 8 B
Disposal: 4

WGK: 1
Warning
H315-H319
P332+P331-P333-P302+P352-
P305+P351+P338



Specification:

Assay (titr.)	min. 10 %
Formic acid	max. 0.05 %
Chloride	max. 0.0005 %
Sulfate	max. 0.0005 %
As	max. 0.0003 %

Cu	max. 0.0005 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %
Zn	max. 0.0005 %

Order-No.	Quantity
A4861,2500	2.5 L
A4861,25004	4 x 2.5 L
A4861,5000	5 L
A4861,9010	10 L

Acetic acid - Standard volumetric solutions

CH_3COOH - Standard volumetric solution

HS-No.: 38220000

Storage: RT

Acetic acid - Standard volumetric solution (5 M)

5 mol/L (5 N Solution)

Class / PG: 8/III
UN2790
WGK: 1
Danger
H314
P310-P301+P330+P331-
P303+P361+P353-P307-P280-
P305+P351+P338



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3344,0500	500 ml
A3344,1000	1 L
A3344,2500	2.5 L
A3344,25004	4 x 2,5 L

Acetic acid - Standard volumetric solution (2 M)

2 mol/L (2 N Solution)

Class / PG: 8/III
UN2790
WGK: 1
Warning
H315-H319
P302+P352-P305+P351+P338-
P332+P331-P337+P313



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3360,0500	500 ml
A3360,1000	1 L
A3360,2500	2.5 L
A3360,5000	5 L

Acetic acid - Standard volumetric solution (1 M)

1 mol/L (1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2643,1000	1 L
A2643,10006	6 x 1 L
A2643,5000	5 L
A2643,9010	10 L

Acetic acid - Standard volumetric solution (0.5 M)

0.5 mol/L (0.5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2626,1000	1 L
A2626,5000	5 L
A2626,9010	10 L

Acetic acid - Standard volumetric solution (0.1 M)

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2631,1000	1 L
A2631,10006	6 x 1 L
A2631,5000	5 L
A2631,9010	10 L

Acetic acid - Standard volumetric solution (0.05 M)

0.05 mol/L (0.05 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2650,1000	1 L
A2650,5000	5 L
A2650,9010	10 L

Acetic acid - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2647,1000	1 L
A2647,5000	5 L
A2647,9010	10 L

Acetic acid : Chloroform 3 : 2 - Mixture (v/v) pure

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 2

Class / PG: 8(6.1)/II
UN2922
WGK: 3
Danger
H373-H302-H351-H314
P301+P330+P331-P305+P351+P338-
P260-P313-P303+P361+P353



Composition:

Acetic acid (A0662) 3 parts (v/v)
Chloroform (A2640) 2 parts (v/v)

Order-No.	Quantity
A4302,1000	1 L
A4302,10006	6 x 1 L
A4302,2500	2.5 L
A4302,25004	4 x 2.5 L
A4302,5000	5 L

Acetic acid D₄

C

Boiling point 115°C
Melting point 16°C

C₂D₄O₂
M = 64.08 g/mol
CAS-No.: 1186-52-3
HS-No.: 28459010
EC-No.: 214-693-4

Storage: RT
LGK: 3 A
Disposal: 3

Class / PG: 8(3)/II
UN2789
WGK: 1
Danger
H226-H314
P301+P330+P331-P307-
P305+P351+P338-P303+P361+P353-
P280-P310



Specification:

Deuteration degree min. 99.5 %

Order-No.	Quantity
DS-1,0001	1 ml
DS-1,0005	5 ml

Acetic acid amide see Acetamide Molecular biology grade Page 38
Acetic acid-n-butylester see n-Butyl acetate Page 172
Acetic acid calcium salt hydrate see Calcium acetate hydrate Page 176
Acetic acid chloride see Acetyl chloride BioChemica Page 48
Acetic acid cobalt(II) salt see Cobalt(II) acetate tetrahydrate Page 219
Acetic acid dimethylamide see N,N-Dimethylacetamide pure Page 282
Acetic acid ethylester see Ethyl acetate Page 339
Acetic acid magnesium salt tetrahydrate see Magnesium acetate tetrahydrate Page 502
Acetic acid-4-methylumbelliferyl ester see MUAcetate BioChemica Page 551
Acetic acid 1-naphthyl ester see 1-Naphthyl acetate BioChemica Page 560
Acetic acid 2-naphthyl ester see 2-Naphthyl acetate BioChemica Page 560
Acetic acid potassium salt see Potassium acetate Page 635
Acetic acid sodium salt see Sodium acetate anhydrous Page 720
Acetic acid sodium salt - Solution see Sodium acetate - Solutions 3 M Page 721
Acetic acid sodium salt - Solutions see Sodium acetate - Standard volumetric solutions Page 722
Acetic acid sodium salt trihydrate see Sodium acetate trihydrate Page 720
Acetic ester see Ethyl acetate Page 339

Acetoacetic acid lithium salt BioChemica

B

Lithium acetoacetate

C₄H₅LiO₃
M = 108.02 g/mol
CAS-No.: 3483-11-2
HS-No.: 29183000

Storage: -20°C
LGK: 10 - 13
Disposal: 3

Warning
H319-H335-H315
P305+P351+P338-P261



Specification:

Assay (titr.) min. 96 %
Solubility (5 %; H₂O) clear, colorless
Loss on drying max. 2 %

Order-No.	Quantity
A1941,0250	250 mg
A1941,0001	1 g
A1941,0005	5 g

Acetone

Dimethyl ketone

Boiling point 56°C
 Density (d 20°C/4°C) .. 0.791
 Melting point -95°C
 n 20°C/D 1.3588

C₃H₆O
M = 58.08 g/mol
 CAS-No.: 67-64-1
 HS-No.: 29141100
 EC-No.: 200-662-2

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1090
 WGK: 1
 Danger
 EUH066-H336-H225-H319
 P210-P305+P351+P338-P233



Acetone ultrapure

C

Specification:

Assay (HPLC) min. 99.9 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0002 %
 Total P max. 0.02 ppm
 Total S max. 0.1 ppm
 Aldehydes max. 0.001 %
 Diisopropyl ether max. 0.005 %
 Methanol max. 0.05 %
 Water (K.F.) max. 0.2 %

Al max. 0.02 ppm
 Ba max. 0.005 ppm
 Ca max. 0.05 ppm
 Cd max. 0.005 ppm
 Cr max. 0.005 ppm
 Fe max. 0.05 ppm
 Li max. 0.005 ppm
 Mg max. 0.02 ppm
 Mn max. 0.005 ppm

Na max. 0.2 ppm
 Pb max. 0.005 ppm
 Zn max. 0.01 ppm

Order-No.	Quantity
A2282,0100	100 ml
A2282,0250	250 ml
A2282,0500	500 ml
A2282,1000	1 L
A2282,10006	6 x 1 L
A2282,2500	2.5 L
A2282,25004	4 x 2,5 L

Acetone Residue analysis grade

C

Specification:

Assay (HPLC) min. 99.8 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.3 %
 GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
 GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1565,2500	2.5 L
A1565,25004	4 x 2,5 L

Acetone HPLC grade

C

Specification:

Assay (HPLC) min. 99.8 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.2 %

A (1 cm/water HPLC grade)
 335 nm max. 0.3
 340 nm max. 0.07
 350 nm max. 0.004

Order-No.	Quantity
A1567,1000	1 L
A1567,10006	6 x 1 L
A1567,2500	2.5 L
A1567,25004	4 x 2,5 L

Acetone BioChemica

B

Specification:

Assay (HPLC) min. 99.5 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Heavy metals (as Pb) max. 0.0001 %
 Non-volatile matter max. 0.001 %
 Aldehydes max. 0.002 %
 Ethanol max. 0.01 %

Methanol max. 0.05 %
 Water (K.F.) max. 0.25 %

Order-No.	Quantity
A3855,0500	500 ml
A3855,1000	1 L
A3855,2500	2.5 L
A3855,25004	4 x 2,5 L
A3855,5000	5 L

Acetone dried p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
 Non-volatile matter max. 0.001 %
 Water (K.F.) max. 0.01 %

Order-No.	Quantity
A2283,0500	500 ml
A2283,1000	1 L
A2283,10006	6 x 1 L
A2283,2500	2.5 L
A2283,25004	4 x 2,5 L

◆ This product contains molecular sieve as a drying agent!

Acetone p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.001 %
 Aldehydes max. 0.002 %
 Ethanol max. 0.01 %
 Methanol max. 0.05 %
 Water (K.F.) max. 0.25 %
 Al max. 0.0005 %
 Ba max. 0.0001 %
 Ca max. 0.0005 %
 Cd max. 0.0001 %
 Co max. 0.0001 %
 Cr max. 0.0001 %
 Fe max. 0.0001 %
 Mg max. 0.0001 %
 Mn max. 0.0001 %
 Na max. 0.0002 %
 Ni max. 0.0001 %

Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A1582,0100PE	100 ml
A1582,0500GL	500 ml
A1582,0500PE	500 ml
A1582,1000GL	1 L
A1582,1000PE	1 L
A1582,10006GL	6 x 1 L
A1582,10006PE	6 x 1 L
A1582,2500GL	2.5 L
A1582,2500PE	2.5 L
A1582,25004GL	4 x 2,5 L
A1582,25004PE	4 x 2,5 L
A1582,5000	5 L
A1582,9010	10 L
A1582,9025BK	25 L
A1582,9025PE	25 L

Acetone pure Ph. Eur., NF

C

Specification:

Assay (HPLC)	min. 99 %	Res. after evaporation	max. 0.004 %
Acidic/alkaline react. subst.	complies	Water (K.F.)	max. 0.3 %
Appearance of solution	complies		
Density (d 20°C/20°C)	0.790 - 0.793		
Density (d 25°C/25°C)	max. 0.789		
H ₂ O-insoluble subst.	complies		
Identity	complies		
Readily oxid. subst.	complies		
Red. substances	complies		
Related subst.	complies		

Order-No.	Quantity
A1600,1000	1 L
A1600,10006	6 x 1 L
A1600,2500	2.5 L
A1600,25004	4 x 2,5 L
A1600,5000	5 L
A1600,9010	10 L
A1600,9025BK	25 L
A1600,9025PE	25 L

Acetone for synthesis

C

Specification:

Assay (HPLC)	min. 98.5 %
Non-volatile matter	max. 0.1 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A0993,1000	1 L
A0993,10006	6 x 1 L
A0993,2500	2.5 L
A0993,25004	4 x 2,5 L
A0993,5000	5 L
A0993,9010	10 L
A0993,9025BK	25 L
A0993,9025PE	25 L

Acetone Technical grade

C

Specification:

Assay (HPLC)	min. 98 %
Non-volatile matter	max. 0.3 %
Water (K.F.)	max. 1 %

Order-No.	Quantity
A2300,2500PE	2.5 L
A2300,25004PE	4 x 2,5 L
A2300,5000	5 L
A2300,9010	10 L
A2300,9025BK	25 L
A2300,9025PE	25 L

Acetone D₆

C

Dimethyl ketone

C₃D₆O
M = 64.12 g/mol
 CAS-No.: 666-52-4
 HS-No.: 28459010
 EC-No.: 211-563-9

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1090
 WGK: 1
 Danger
 EUH066-H225-H319-H336
 P233-P210-P305+P351+P338



Boiling point 56°C
 Density (d 20°C/4°C) 0.791
 Melting point -95.4°C

Specification:

Deuteration degree	min. 99.8 %

Order-No.	Quantity
DS-2,0005	5 ml
DS-2,0025	25 ml

Acetonitrile



Boiling point 81°C
 Density (d 20°C/4°C) 0.786
 Melting point -46°C
 n 20°C/D 1.3442

C₂H₃N
M = 41.05 g/mol
 CAS-No.: 75-05-8
 HS-No.: 29269095
 EC-No.: 200-835-2

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1648
 WGK: 2
 Danger
 H225-H319-H302-H312-H332
 P210-P403+P235-P305+P351+P338

Acetonitrile ultrapure

C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity/Alkalinity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0002 %
Total P	max. 0.02 ppm
Total S	max. 0.1 ppm
Allyl alcohol	max. 0.005 %
Methanol	max. 0.005 %
Propionitrile	max. 0.05 %

Water (K.F.)	max. 0.05 %
Al	max. 0.02 ppm
Ba	max. 0.005 ppm
Ca	max. 0.05 ppm
Cd	max. 0.005 ppm
Cr	max. 0.005 ppm
Fe	max. 0.05 ppm
Li	max. 0.005 ppm

Mg	max. 0.02 ppm
Mn	max. 0.005 ppm
Na	max. 0.2 ppm
Ni	max. 0.005 ppm
Pb	max. 0.005 ppm
Zn	max. 0.01 ppm

Order-No.	Quantity
A2305,0100	100 ml
A2305,0250	250 ml
A2305,1000	1 L
A2305,10006	6 x 1 L
A2305,2500	2.5 L
A2305,25004	4 x 2,5 L

Acetonitrile DNA synthesis and peptide sequencing grade

B

Specification:

Assay (HPLC)	min. 99.9 %
Acidity/Alkalinity	max. 0.0001 meq/g
Non-volatile matter	max. 0.0002 %
Water (K.F.)	max. 0.005 %

Order-No.	Quantity
A0934,0500	500 ml
A0934,1000	1 L
A0934,2500	2.5 L

Acetonitril LC-MS grade

C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0005 %
Qualifying test for LC-MS	complies
Loss on drying	max. 0.02 %
Ca	max. 0.1 ppm
K	max. 0.1 ppm
Mg	max. 0.1 ppm
Na	max. 0.1 ppm
GC/ECD individual signals (lindane standard)	max. 5 ng/L
GC/NPD individual signals (ethylparathion standard)	max. 10 ng/L

Order-No.	Quantity
A9024,1000	1 L
A9024,10006	6 x 1 L
A9024,2500	2.5 L
A9024,25004	4 x 2,5 L

Acetonitrile Residue analysis grade

C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity/Alkalinity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.1 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard)	max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard)	max. 10 ng/L

Order-No.	Quantity
A1603,2500	2.5 L
A1603,25004	4 x 2,5 L

Acetonitrile for preparative HPLC

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	260 nm max. 0.15
Non-volatile matter	max. 0.0005 %	280 nm max. 0.05
Water (K.F.)	max. 0.02 %	

Order-No.	Quantity
A2315,2500	2.5 L
A2315,25004	4 x 2,5 L

Acetonitrile HPLC grade (fluorescence grade)

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)	Fluorescence (Quinine)
Acidity/Alkalinity	max. 0.0005 meq/g	240 nm max. 0.01	254 nm max. 1 ppb
Non-volatile matter	max. 0.0005 %	250 nm max. 0.005	365 nm max. 1 ppb
Water (K.F.)	max. 0.02 %		

Order-No.	Quantity
A1604,1000	1 L
A1604,10006	6 x 1 L

Acetonitrile HPLC grade (gradient grade)

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)	Gradient grade
Acidity/Alkalinity	max. 0.0005 meq/g	190 nm max. 0.5	210 nm max. 0.005 AU
Non-volatile matter	max. 0.0005 %	200 nm max. 0.1	
Water (K.F.)	max. 0.02 %	210 nm max. 0.05	
		220 nm max. 0.01	
		230 nm max. 0.005	

Order-No.	Quantity
A3189,1000	1 L
A3189,10006	6 x 1 L
A3189,2500	2.5 L
A3189,25004	4 x 2,5 L

Acetonitrile HPLC grade

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	240 nm max. 0.01
Non-volatile matter	max. 0.0005 %	250 nm max. 0.005
Water (K.F.)	max. 0.02 %	

Order-No.	Quantity
A1605,1000	1 L
A1605,10006	6 x 1 L
A1605,2500	2.5 L
A1605,25004	4 x 2,5 L

Acetonitrile dried p. A.

C

Specification:

Assay (HPLC)	min. 99.5 %
Non-volatile matter	max. 10 ppm
Water (K.F.)	max. 0.01 %

Order-No.	Quantity
A2294,0500	500 ml
A2294,1000	1 L
A2294,10006	6 x 1 L
A2294,2500	2.5 L
A2294,25004	4 x 2,5 L

◆ This product contains molecular sieve as a drying agent!

Acetonitrile p. A.

C

Specification:

Assay (HPLC)	min. 99.5 %	Al	max. 0.00005 %	Mg	max. 0.00001 %
Acidity/Alkalinity	max. 0.0008 meq/g	Ba	max. 0.00001 %	Mn	max. 0.00001 %
Non-volatile matter	max. 10 ppm	Ca	max. 0.00005 %	Na	max. 0.00005 %
Allyl alcohol	max. 0.05 %	Cd	max. 0.00001 %	Ni	max. 0.00001 %
Methanol	max. 0.05 %	Co	max. 0.00001 %	Pb	max. 0.00001 %
Propionitrile	max. 0.1 %	Cr	max. 0.00001 %	Zn	max. 0.00001 %
Water (K.F.)	max. 0.1 %	Fe	max. 0.00001 %		

Order-No.	Quantity
A1606,0500	500 ml
A1606,1000	1 L
A1606,10006	6 x 1 L
A1606,2500	2.5 L
A1606,25004	4 x 2,5 L
A1606,5000	5 L

Acetonitrile pure

C

*Methyl cyanide***Specification:**

Assay (HPLC) min. 99 %
 Acidity/Alkalinity max. 0.001 meq/g
 Non-volatile matter max. 0.005 %
 Water (K.F.) max. 0.5 %

Order-No.	Quantity
A0744,1000	1 L
A0744,10006	6 x 1 L
A0744,2500	2.5 L
A0744,25004	4 x 2,5 L
A0744,5000	5 L
A0744,9010	10 L
A0744,9025PE	25 L

Acetonitrile D₃

C

*Methyl cyanide*C₂D₃N

M = 44.05 g/mol

CAS-No.: 2206-26-0

HS-No.: 28459010

EC-No.: 218-616-5

Storage: RT

LGK: 3 A

Disposal: 1

Class / PG: 3/II

UN1648

WGK: 2

Danger

H225-H332-H312-H302-H319

P210-P305+P351+P338-P403+P235



Boiling point 79°C

Density (d 20°C/4°C) ... 0.84

Melting point -46°C

Specification:

Deuteration degree min. 99.6 %

Order-No.	Quantity
DS-3,0005	5 ml
DS-3,0025	25 ml

Acetopyrrothin see Thiolutin *BioChemica* Page 8133β-Acetoxy-5-cholestene see Cholesteryl acetate *BioChemica* Page 208

(3α,4β)-3-Acetoxy-olean-12-en-23-oic acid see 3-Acetyl-α-boswellic acid Page 47

3α-Acetoxy-urs-12-en-11-keto-23-oic acid see 3-Acetyl-11-keto-β-boswellic acid Page 48

(3α,4β)-3-Acetoxy-urs-12-en-23-oic acid see 3-Acetyl-β-boswellic acid Page 48

Acetoxy valerenic acid HPLC grade

B

*from Valeriana officinalis*C₁₇H₂₄O₄

M = 292.37 g/mol

CAS-No.: 81397-67-3

HS-No.: 29420000

Storage: 2-8°C

LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A2051,0025	25 mg
A2051,0025DOC	25 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

6-O-Acetylacteoside HPLC grade

B

*from Harpagophytum procumbens*C₃₁H₃₈O₁₇

M = 666.64 g/mol

CAS-No.: 441769-43-3

HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5269,0020	20 mg
A5269,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**3-Acetyl-α-boswellic acid HPLC grade**

B

*(3α,4β)-3-Acetoxy-olean-12-en-23-oic acid**from Boswellia serrata*C₃₂H₅₀O₄

M = 498.73 g/mol

HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5321,0010	10 mg
A5321,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum

3-Acetyl-β-boswellic acid HPLC grade

B

(3α,4β)-3α-Acetoxy-urs-12-en-23-oic
acid
from *Boswellia serrata*

C₃₂H₅₀O₄
M = 498.73 g/mol
CAS-No.: 5968-70-7
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.

A5280,0010

A5280,0020

Quantity

10 mg

20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**3-Acetyl-11-keto-β-boswellic acid HPLC grade**

B

3α-Acetoxy-urs-12-en-11-keto-23-oic
acid
from *Boswellia serrata*

C₃₂H₄₈O₅
M = 512.73 g/mol
CAS-No.: 67416-61-9
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.

A5262,0010

A5262,0020

Quantity

10 mg

20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**Acetyl chloride BioChemica**

B

Acetic acid chloride

C₂H₃Cl
M = 78.50 g/mol
CAS-No.: 75-36-5
HS-No.: 29159000
EC-No.: 200-865-6

Storage: 2-8°C

LGK: 3 A

Disposal: 11

Class / PG: 3(8)/II

UN1717

WGK: 1

Danger

EUH014-H225-H314

P301+P330+P331-P210-P280-

P305+P351+P338



Boiling point 50 - 52°C

Density (d 20°C/4°C) .. 1.105

n 20°C/D 1.389

Specification:

Assay min. 99 %

Ca max. 0.00005 %

Cr max. 0.000002 %

Cu max. 0.000002 %

Fe max. 0.00005 %

Mn max. 0.000002 %

Pb max. 0.00001 %

Zn max. 0.00001 %

Order-No.

A3752,0025

A3752,0100

A3752,0250

Quantity

25 ml

100 ml

250 ml

Comment: **Caution:** Acetyl chloride decomposes violently by water or alcohol! Protect from water.

N-Acetylchondrosamine see N-Acetyl-D-galactosamine Page 49

Acetyl-S-CoA see Acetyl-Coenzyme A trilithium salt *BioChemica* Page 48**Acetyl-Coenzyme A trilithium salt BioChemica**

B

Acetyl-S-CoA

C₂₃H₃₅Li₃N₇O₁₇P₃S
M = 827.37 g/mol
CAS-No.: 75520-41-1
HS-No.: 29349990
EC-No.: 278-233-4

Storage: 2-8°C

LGK: 10 - 13

Warning

H319-H315-H335

P305+P351+P338

**Specification:**

Assay approx. 95 %

Assay (enzym.) min. 83 %

Loss on drying max. 5 %

Solubility (1 %; H₂O) clear, colorless**Order-No.**

A3753,0010

A3753,0050

A3753,0100

Quantity

10 mg

50 mg

100 mg

N-Acetyl-L-cysteine BioChemica

B

2-Acetamido-3-mercaptopropionic acid

C₅H₉NO₂S
M = 163.19 g/mol
CAS-No.: 616-91-1
HS-No.: 29309016
EC-No.: 210-498-3

Storage: RT

LGK: 10 - 13

WGK: 1

Specification:

Assay min. 99 %

Heavy metals (as Pb) max. 0.001 %

Loss on drying max. 1 %

Solubility (5 %; H₂O) clear, colorless

Sulfated ash max. 0.2 %

Order-No.

A4207,0025

A4207,0100

A4207,0500

Quantity

25 g

100 g

500 g

3-Acetyldeoxynivalenol



B

NSC 26703, Dehydronivalenol
monoacetate, 3 α -Acetylvomitoxin, 3-
Acetyl don, Deoxynivalenol monoacetate
from *Fusarium graminearum*

C₁₇H₂₂O₇
M = 338.4 g/mol
CAS-No.: 50722-38-8
HS-No.: 29419000

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
Danger
H310-H300-H330
P310-P280-P260-P302+P350-P264



Melting point 185 - 187°C

Specification:

Assay (TLC) approx. 98 %
Appearance white crystalline so-
lid

Solubility (20 mg/ml EtOH)

..... clear, colorless

Order-No.

A8502,0001

A8502,0005

Quantity

1 mg

5 mg

Comment: 3-Acetyldeoxynivalenol is a mycotoxin belonging to the group of trichothecenes, produced by several *Fusarium* strains. This substance inhibits the protein biosynthesis in eukaryotic cells. 3-Acetyldeoxynivalenol is soluble in acetonitrile, methanol and ethyl acetate, but only slightly soluble in water.

3^β-O-(4-O-Acetyl-2,6-dideoxy-3-C-methyl- α -L-arabino-hexopyranosyl)-7-methylolivomycin D see Chromomycin A3 *BioChemica* Page 211

3-Acetyl don see 3-Acetyldeoxynivalenol Page 49

N-Acetyl-D-galactosamine

B

2-Acetamido-2-deoxy-D-galactose, D-
GalNAc, N-Acetylchondrosamine

C₈H₁₅NO₆
M = 221.21 g/mol
CAS-No.: 1811-31-0
HS-No.: 29329900
EC-No.: 217-321-9

Storage: 2-8°C

WGK: 3

Melting point 140 - 165°C

Specification:

Assay min. 98 %
Appearance of solution (10 %; H₂O)
..... clear, colorless
Carbon 42.6 - 44.3 %

Nitrogen 6.1 - 6.5 %
Spec. Rotation (1 %; H₂O; 5 h)
..... +80° - +90°
Water (K.F.) max. 5 %

Order-No.

A7451,0250

A7451,0001

A7451,0005

Quantity

250 mg

1 g

5 g

N-Acetyl-D-glucosamine *BioChemica*

B

D-GlcNAc, 2-Acetamido-2-deoxy-D-
glucose

C₈H₁₅NO₆
M = 221.21 g/mol
CAS-No.: 7512-17-6
HS-No.: 29329900
EC-No.: 231-368-2

Storage: 2-8°C

WGK: 3

Specification:

Assay min. 99 %
 α 20°C/D; 2 %, H₂O +39° - +45°
Heavy metals (as Pb) max. 0.0005 %
Loss on drying max. 0.5 %

Sulfated ash max. 0.1 %

Order-No.

A2554,0025

A2554,0100

A2554,0250

Quantity

25 g

100 g

250 g

N-Acetyl-L-leucyl-L-leucyl-L-methioninal see Calpain Inhibitor II Page 183

N-Acetyl-L-leucyl-L-leucyl-L-norleucinal see Calpain Inhibitor I Page 183

N-Acetylneuraminic acid see Sialic acid *BioChemica* Page 711

Acetylthiocholine iodide *BioChemica*

B

S-Acetylthiocholine iodide

C₇H₁₄INOS
M = 289.18 g/mol
CAS-No.: 1866-15-5
HS-No.: 29309099
EC-No.: 217-474-1

Storage: 2-8°C
LGK: 6.1 A

Class / PG: 6.1/III
UN2811
WGK: 3
Danger
H301-H319-H311-H315
P312-P280-P301+P310



Melting point 205 - 210°C

Specification:

Assay (titr.) min 99.5 %
IR-Spectrum complies
Solubility (10 %; H₂O) clear, colorless

Order-No.

A3754,0001

A3754,0005

A3754,0025

Quantity

1 g

5 g

25 g

Literature: (1) John, R.A. (1993) Photometric assays in *Enzyme Assays: A Practical Approach* p. 81 (Eisenthal, R. & Danson, M.F. eds.) Oxford University Press; Oxford, New York, Tokyo.

Comment: Acetylthiocholine iodide is used as a synthetic substrate for the assay of acetylcholine esterase (E.C. 3.1.1.7), replacing the natural substrate acetylcholine. This enzyme hydrolyses the substrate to yield acetate and thiocholine. The free thiol group of thiocholine reacts with 5,5'-dithiobis-2-nitrobenzoic acid (DTNB, Ellman's reagent; see product no. A3378) included in the assay mixture, producing the yellow 4-nitrothiolate anion. The release of this yellow anion is followed at 412 nm. The assay may be performed at 30°C in 0.1 M sodium phosphate buffer with 10 mM DTNB and 12.5 mM acetylthiocholine iodide (1). **Stability:** Solutions of acetylthiocholine iodide are unstable. You may keep them at 2-8°C for 3-4 days. When they turn turbid, don't use them. It is recommended to prepare them fresh each time.

N-Acetyl-L-tyrosine ethyl ester monohydrate (ATEE) BioChemica

B

ATEE	$C_{13}H_{17}NO_4 \cdot H_2O$ $M = 269.3 \text{ g/mol}$ CAS-No.: 36546-50-6 HS-No.: 29242998 EC-No.: 212-663-5	Storage: RT protected from light LGK: 10 - 13
Melting point	 77 - 81°C	

Specification:

Assay	 min. 99 %
$\alpha 24^\circ\text{C/D}$; 1 %, abs. EtOH	.. +22° - +24°
IR-Spectrum	 complies
Water (K.F.)	 6.0 - 7.0 %
Suitability as enzyme substrate (for α -Chymotrypsin)	 complies

Order-No.	Quantity
A3755,0005	5 g

Literature: (1) Schwert G.W. & Takenaka Y. (1955) *Biochim. Biophys. Acta* **16**, 570.

Comment: ATEE is substrate of α -chymotrypsin or proteinase K. The original method of assay for the activity of α -chymotrypsin is that suggested by Schwert and Takenaka in which N-Acetyl-L-Tyrosine Ethyl Ester (ATEE) is hydrolyzed at the ester linkage causing a decrease of absorbance measured at 237 nm and 25°C. Chymotrypsin hydrolyses ATEE, forming N-Acetyl-L-Tyrosine and ethanol. Dissolve 23.5 mg N-Acetyl-L-Tyrosine Ethyl Ester (ATEE) at 70°C in 100 ml buffer (0.067 M Potassium Phosphate Buffer pH 7.0: Dissolve 3.53 g KH_2PO_4 and 7.07 g K_2HPO_4 in 800 ml distilled water, check pH 7.0 and dilute to 1 litre. Store buffer at 5°C). Cool rapidly. Store at 25°C for duration of assay.

3 α -Acetylvomitinol see 3-Acetyldeoxymivalenol Page 49

Achromycine hydrochloride see Tetracycline hydrochloride Page 805

Acid blue 9 disodium salt see Erioglaucine (C.I. 42090) Page 330

Acid blue 93 (C.I. 42780)

C

Methyl blue, Aniline blue water-soluble	$C_{37}H_{27}N_3Na_2O_9S_3$ $M = 799.82 \text{ g/mol}$ CAS-No.: 28983-56-4 HS-No.: 32041900 EC-No.: 249-352-9	Storage: RT LGK: 10 - 13	P260-P262

Specification:

Spectrum	 complies

Order-No.	Quantity
A1545,0010	10 g
A1545,0025	25 g
A1545,0100	100 g

Acid Fuchsin see Fuchsin acidic disodium salt (C.I. 42685) Page 364

α_1 -Acid Glycoprotein, human

B

AGP lyophilized from 20 mM NH_4CO_3 from human serum	HS-No.: 38220000	Storage: 2-8°C

Specification:

Assay	 min. 96 %
Appearance	 white to off-white powder

Order-No.	Quantity
A6934,0100	100 μ g
A6934,0001	1 mg

Comment:Protein: > 3 mg/ml (dispensing solution) reconstitute it as a dispensing solution consisting of a 50 mM phosphate buffer pH > 7.0 containing 150 mM NaCl.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

recombinant Mouse acidic Fibroblast Growth Factor see rM aFGF Page 348

recombinant Human basic acidic Fibroblast Growth Factor see rHu aFGF bioconfident grade Page 347

Acid Mixture Sulfuric acid 96 % : Phosphoric acid 85 % (1 : 1, v/v) p. A.

C

HS-No.: 38220000	Storage: RT	Class / PG: 8/II UN3264 hygroscopic Danger H290-H314 P301+P330+P331-P305+P351+P338- P310-P309-P280



Composition:

Phosphoric acid 85 %	 500 ml/L
Sulfuric acid 96 %	 500 ml/L

Specification:

Chloride	 max. 0.0002 %	Na	 max. 0.02 %
Nitrate	 max. 0.0005 %	Ni	 max. 0.0001 %
Ca	 max. 0.005 %	Pb	 max. 0.0001 %
Fe	 max. 0.001 %	Zn	 max. 0.0002 %
K	 max. 0.0005 %		

Order-No.	Quantity
A2682,1000	1 L
A2682,5000	5 L
A2682,9010	10 L

Acidol see Betaine hydrochloride pure Page 137

Acid Orange 10 see Orange G (C.I. 16230) Page 585

Acid Red 18 see Cochenille Red (C.I. 16255) Page 220

Acid Red 51 see Erythrosin B (C.I. 45430) Page 331

Acid Red 94 see Rose Bengal (C.I. 45440) Page 691

Acid violet 19 see Fuchsin acidic disodium salt (C.I. 42685) Page 364

Ac-Leu-Leu-Met-al see Calpain Inhibitor II Page 183
Ac-Leu-Leu-Nle-al see Calpain Inhibitor I Page 183

Acridine orange (C.I. 46005)

B

Acridine orange zinc chloride double salt, Basic Orange 14

C₁₇H₁₉N₃ · HCl · 0.5ZnCl₂
M = 369.96 g/mol
CAS-No.: 10127-02-3
HS-No.: 32041300
EC-No.: 233-353-6

Storage: RT
LGK: 10 - 13

WGK: 3*
Warning
H341
P308+P313-P281



Solubility (20°C) 28 g/L (H₂O)

Specification:

λ_{max} (H₂O) 490 - 495 nm
E 3 %/1 cm, λ_{max} > 1200 (H₂O)
Loss on drying max. 10 %

Order-No.	Quantity
A1398,0010	10 g
A1398,0025	25 g
A1398,0100	100 g

Literature: (1) Wolfe, A.D. *et al.* (1972) *Biochemistry* **11**, 1569-1572
(2) Darzynkiewicz, Z. (1990) *Methods Cell Biol.* **33**, 265-298

Labelizing action of intercalating drugs and dyes on bacterial ribosomes.
Differential staining of DNA and RNA in intact cells and isolated cell nuclei with Acridine orange.

Comment: Acridine orange differentially stains double- versus single-stranded nucleic acids. Intercalation into double-stranded DNA (dsDNA) results in green fluorescence (max. emission at 530 nm) upon excitation with blue light. Single-stranded nucleic acids condense and precipitate after interaction with the dye. They show a red luminescence (max. emission at 640 nm; ref. 2). If differentially staining of RNA and DNA is performed, it has to be taken into account, that high acridine orange concentrations will denature dsRNA completely (2). Cells with a high RNA content need high acridine orange concentrations. Therefore, a defined working concentration cannot be given.
A stock solution of acridine orange (1 mg/ml water bidistilled) can be stored several months at +4°C. A starting (working) concentration of 13 µM (4 µg/ml) is recommended.

Acridine orange zinc chloride double salt see Acridine orange (C.I. 46005) Page 51

Acriflavine hydrochloride BioChemica

B

Eufllavine, 3,6-Diamino-10-methyl-acridiniumchloride hydrochloride

CAS-No.: 8063-24-9
HS-No.: 32041300

Storage: RT

Danger
H318-H302
P305+P351+P338-P280



Specification:

Assay (titr.) min. 97 %
Melting point approx. 260°C (dec.)

Order-No.	Quantity
A2952,0010	10 g
A2952,0050	50 g
A2952,0100	100 g
A2952,0250	250 g

Acrylamide crystalline

Acrylic acid amide

C₃H₅NO
M = 71.08 g/mol
CAS-No.: 79-06-1
HS-No.: 29241900
EC-No.: 201-173-7

Storage: 2-8°C
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/II
UN2074
WGK: 3
Danger
H350-H319-H317-H361F-H301-H332-
H312-H340-H315-H372
P305+P351+P338-P201-P302+P352-
P280



Melting point 82 - 85°C

On the following pages you will find all liquid and crystalline acrylamide products from AppliChem. Besides the alphabetical product list, they are listed in tables (summaries for the liquid and the crystalline products). Currently, AppliChem offers three different grades of Acrylamide: **Acrylamide Molecular biology grade**, **Acrylamide 4K ultrapure** and **Acrylamide 2K extrapure**. Acrylamide 2K is a two times crystallised standard grade, suitable for most electrophoresis applications. Acrylamide 4K is a four times crystallised, very high purity grade material with a very low conductivity, suitable for all electrophoresis applications (e. g. DNA electrophoresis, sequencing, gel retardation analysis, protein gels, blotting etc.). Acrylamide Molecular biology grade is tested for the absence of DNases / RNases. As a special customer service **AppliChem offers the production of acrylamide solutions according to customers recipe** for very attractive prices.

(1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87 (2) Sambrook, J. & Russel, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York. (3) Hames, B.D. (1990) Chapter 3 in *Gel Electrophoresis of Proteins: A Practical Approach* 2nd ed. (Hames, B.D. & Rickwood, D. eds.) IRL Press. (4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Polyacrylamide gels are formed by the polymerization of acrylamide and cross-linking by a bifunctional agent, usually N,N-methylene bisacrylamide. The pore size of the gel depends on the concentration of acrylamide and the ratio acrylamide : cross-linker. A high acrylamide concentration and a low ratio acrylamide : cross-linker results in a small pore size.

Caution: The acrylamide monomer is a strong, cumulating neurotoxin. If you handle acrylamide, wear gloves and face protection. Do not breathe dust. We recommend to use our *ready-to-use* acrylamide solutions, or, when possible agarose as a substitute. Crystalline acrylamide may be stored at -20°C, +4°C or ambient temperature. We recommend storage at +4°C. All acrylamide solutions should be filtered.

Acrylamide Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.9 %
Conductivity (40 %) max. 10.0 µS/cm
Loss on drying max. 0.5 %
pH (10 %; 0.1 M NaCl) 5.0 - 7.0 (20°C)
Acrylic acid (titr.) max. 0.001 %

Fe	 max. 0.0001 %	A (1 cm/10 % in H ₂ O)
Pb	 max. 0.0001 %	300 nm max. 0.15
		320 nm max. 0.05
		430 nm max. 0.005

Order-No.	Quantity
A3812,0100	100 g
A3812,0250	250 g
A3812,0500	500 g
A3812,1000	1 kg

Acrylamide 4K ultrapure

B

Specification:

Assay (titr.) min. 99.9 %
Conductivity (40 %) max. 10.0 µS/cm
Loss on drying max. 0.5 %
pH (10 %; 0.1 M NaCl; 20°C) 5.0 - 7.0
Acrylic acid (titr.) max. 0.001 %
Fe max. 0.0001 %

Pb	 max. 0.0001 %	A (1 cm/10 % in H ₂ O)
		300 nm max. 0.15
		320 nm max. 0.05
		430 nm max. 0.005

Order-No.	Quantity
A1090,0100	100 g
A1090,0250	250 g
A1090,0500	500 g
A1090,1000	1 kg
A1090,10006	6 x 1 kg

Acrylamide 2K Standard grade, extrapure

B

Specification:

Assay (titr.)	min. 99 %	A (1 cm/10 % in H ₂ O)
Conductivity (40 %)	max. 100 µS/cm	300 nm
Loss on drying	max. 0.5 %	320 nm
pH (10 %; 0.1 M NaCl; 20°C)	5.0 - 7.0	430 nm
Acrylic acid (titr.)	max. 0.05 %	
Cu	max. 0.001 %	

Order-No.

A1089,0250	250 g
A1089,0500	500 g
A1089,1000	1 kg
A1089,10006	6 x 1 kg
A1089,5000	5 kg

Quantity

Acrylamide - Powder mixtures

HS-No.: 29241900

Storage: 2-8°C

LGK: 6.1 B

Disposal: 9

Class / PG: 6.1/III

UN2074

WGK: 3

Danger

H315-H372-H361F-H350-H319-H312-

H332-H317-H340-H301

P280-P201-P302+P352-

P305+P351+P338



Acrylamide 4K - Mix 19 : 1 (Powder)

B

Composition:

Acrylamide 4K	95.0 %
Bisacrylamide 4K	5.0 %

Specification:

pH (H ₂ O; 20°C)	5.0 - 7.0
Acrylic acid (titr.)	max. 0.001 %

A (1 cm/10 % in H ₂ O)	
300 nm	max. 0.15
320 nm	max. 0.05
430 nm	max. 0.005

Order-No.

A1155,0100	100 g
A1155,0500	500 g

Quantity

Literature: (1) Peacock, A.C. & Dingman, C.W. (1967) *Biochemistry* 7, 668-674

(2) Ambrose, B.J.B. & Pless, R.C. (1987) *Methods Enzymol.* 152, 522-538

(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Greene Publishing & Wiley-Interscience, New York.

Molecular weight estimation and separation of ribonucleic acid by electrophoresis in agarose-acrylamide composite gels.
DNA sequencing: Chemical methods.

Comment:For the separation of oligonucleotides with a small number of bases, acrylamide gels with a small pore size are used. The pore size is determined by the total concentration of acrylamide and the ratio of acrylamide : bisacrylamide. For the sequencing of nucleic acids a ratio of acrylamide : bisacrylamide of 19 : 1 is used. Prepare a 40 % aqueous stock solution of the premixed powder.

Caution: Acrylamide is a potent neurotoxin and absorbed through the skin. The effects of acrylamide are cumulative. Wear gloves and a mask when weighing acrylamide under a chemical hood. Although polyacrylamide is suspected to be nontoxic, it should be handled with great care because of the possibility that it might contain small quantities of unpolymerized acrylamide.

Acrylamide 2K - Mix 19 : 1 (Powder)

B

Composition:

Acrylamide 2K	95.0 %
Bisacrylamide 2K	5.0 %

Specification:

pH (H ₂ O; 20°C)	5.0 - 7.0
Acrylic acid (titr.)	max. 0.05 %

A (1 cm/10 % in H ₂ O)	
300 nm	max. 0.3
320 nm	max. 0.1
430 nm	max. 0.01

Order-No.

A0840,0100	100 g
A0840,0500	500 g

Quantity

Literature: and **comment** see Acrylamide 4K - Mix 19 : 1 (A1155).

Acrylamide 4K - Mix 29 : 1 (Powder)

B

Composition:

Acrylamide 4K	96.67 %
Bisacrylamide 4K	3.33 %

Specification:

pH (H ₂ O; 20°C)	5.0 - 7.0
Acrylic acid (titr.)	max. 0.001 %

A (1 cm/10 % in H ₂ O)	
300 nm	max. 0.15
320 nm	max. 0.05
430 nm	max. 0.005

Order-No.

A0956,0100	100 g
A0956,0500	500 g

Quantity

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* 152, 61-87

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(3) Hames, B.D. (1990) Chapter 3 in *Gel Electrophoresis of Proteins: A Practical Approach* 2nd ed. (Hames, B.D. & Rickwood, D. eds.) IRL Press.

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Greene Publishing & Wiley-Interscience, New York.

Electrophoresis in agarose and acrylamide gels.

Comment:For most applications in the electrophoresis of nucleic acids or proteins, polyacrylamide gels are prepared from 30 % stock solutions with a ratio acrylamide : bisacrylamide of 29 : 1 or 37.5 : 1.

Acrylamide 2K - Mix 29 : 1 (Powder)

B

Composition:

Acrylamide 2K	96.67 %
Bisacrylamide 2K	3.33 %

Specification:

pH (H ₂ O; 20°C)	5.0 - 7.0
Acrylic acid (titr.)	max. 0.05 %

A (1 cm/10 % in H ₂ O)	
300 nm	max. 0.3
320 nm	max. 0.1
430 nm	max. 0.01

Order-No.

A0841,0100	100 g
A0841,0500	500 g

Quantity

Literature: and **comment** see Acrylamide 4K - Mix 29 : 1 (A0956).

Acrylamide 4K - Mix 32 : 1 (Powder)

B

Composition:

Acrylamide 4K	96.97 %
Bisacrylamide 4K	3.03 %

Specification:

pH (H ₂ O; 20°C)	5.0 - 7.0
Acrylic acid (titr.)	max. 0.001 %

A (1 cm/10 % in H ₂ O)	
300 nm	max. 0.15
320 nm	max. 0.05
430 nm	max. 0.005

Order-No.

A1156,0100	100 g
A1156,0500	500 g

Quantity

Acrylamide 2K - Mix 32 : 1 (Powder)

B

Composition:		Specification:			Order-No.	Quantity
Acrylamide 2K	96.97 %	pH (H ₂ O; 20°C)	5.0 - 7.0	A (1 cm/10 % in H ₂ O)	A0842,0100	100 g
Bisacrylamide 2K	3.03 %	Acrylic acid (titr.)	max. 0.05 %	300 nm		
				320 nm		
				430 nm	A0842,0500	500 g

Acrylamide 4K - Mix 37.5 : 1 (Powder)

B

Composition:		Specification:			Order-No.	Quantity
Acrylamide 4K	97.4 %	pH (H ₂ O; 20°C)	5.0 - 7.0	A (1 cm/10 % in H ₂ O)	A1157,0100	100 g
Bisacrylamide 4K	2.6 %	Acrylic acid (titr.)	max. 0.001 %	300 nm		
				320 nm		
				430 nm	A1157,0500	500 g

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87
 (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
 (3) Hames, B.D. (1990) Chapter 3 in *Gel Electrophoresis of Proteins: A Practical Approach* 2nd ed. (Hames, B.D. & Rickwood, D. eds.) IRL Press.
 (4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Greene Publishing & Wiley-Interscience, New York.

Comment: For most applications in the electrophoresis of nucleic acids or proteins, polyacrylamide gels are prepared from 30 % stock solutions with a ratio acrylamide : bisacrylamide of 29 : 1 or 37.5 : 1.

Acrylamide 2K - Mix 37.5 : 1 (Powder)

B

Composition:		Specification:			Order-No.	Quantity
Acrylamide 2K	97.4 %	pH (H ₂ O; 20°C)	5.0 - 7.0	A (1 cm/10 % in H ₂ O)	A0843,0100	100 g
Bisacrylamide 2K	2.6 %	Acrylic acid (titr.)	max. 0.05 %	300 nm		
				320 nm		
				430 nm	A0843,0500	500 g

Literature: and **comment** see Acrylamide 4K - Mix 37.5 : 1 (A1157) .

Acrylamide - AquaPlus - Mixes

HS-No.: 38220000

Storage: 2-8°C
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/III
 UN2074
 WGK: 3
 Danger
 H332-H372-H301-H350-H340-H317-
 H319-H361f-H315-H312
 P280-P302+P352-P201-
 P305+P351+P338



Acrylamide - AquaPlus - Mixes are powder mixtures of Acrylamide 4K and Bisacrylamide 4K. They are available with the ratios Acrylamide : Bisacrylamide 19 : 1, 29 : 1, 32 : 1 and 37.5 : 1 (30 : 0.8). By adding the required volume of water (see product description), you will obtain a 30 % or 40 % Acrylamide / Bisacrylamide - Solution, respectively. Acrylamide - AquaPlus - Mixes will help you to protect yourself from inhaling the toxic dust of acrylamide powder. At room temperature the solutions are stable for months.

AquaPlus - Mix 19 : 1 (40 %)

B

Composition:		Specification:			Order-No.	Quantity
Acrylamide 4K	380.0 g/L	pH (10 %; H ₂ O)	5.0 - 7.0 (20°C)	A (1 cm/10 % in H ₂ O)	A2131,0250	250 ml
Bisacrylamide 4K	20.0 g/L	Acrylic acid (titr.)	max. 0.001 %	300 nm		
				320 nm	A2131,0500	500 ml
				430 nm	A2131,1000	1 L

Comment: The addition of 158.75 ml deionized or bidistilled water results in 250 ml Acrylamide 4K / Bis 4K - Solution (40 %) = A2131,0250.
 The addition of 317.5 ml deionized or bidistilled water results in 500 ml Acrylamide 4K / Bis 4K - Solution (40 %) = A2131,0500.
 The addition of 635 ml deionized or bidistilled water results in 1 L Acrylamide 4K / Bis 4K - Solution (40 %) = A2131,1000.

AquaPlus - Mix 29 : 1 (30 %)

B

Composition:		Specification:			Order-No.	Quantity
Acrylamide 4K	290.0 g/L	pH (10 %; H ₂ O; 20°C)	5.0 - 7.0	A (1 cm/10 % in H ₂ O)	A1856,0250	250 ml
Bisacrylamide 4K	10.0 g/L	Acrylic acid (titr.)	max. 0.001 %	300 nm		
				320 nm	A1856,0500	500 ml
				430 nm	A1856,1000	1 L

Comment: The addition of 182.5 ml deionized or bidistilled water results in 250 ml Acrylamide 4K / Bis 4K - Solution (30 %) = A1856,0250.
 The addition of 365 ml deionized or bidistilled water results in 500 ml Acrylamide 4K / Bis 4K - Solution (30 %) = A1856,0500.
 The addition of 730 ml deionized or bidistilled water results in 1 L Acrylamide 4K / Bis 4K - Solution (30 %) = A1856,1000.

AquaPlus - Mix 32 : 1 (30 %) for IEF

B

Composition:		Specification:			Order-No.	Quantity
Acrylamide 4K	290.9 g/L	pH (10 %; H ₂ O; 20°C)	5.0 - 7.0	A (1 cm/10 % in H ₂ O)	A1851,0250	250 ml
Bisacrylamide 4K	9.1 g/L	Acrylic acid (titr.)	max. 0.001 %	300 nm		
				320 nm	A1851,0500	500 ml
				430 nm	A1851,1000	1 L

Comment: The addition of 182.5 ml deionized or bidistilled water results in 250 ml Acrylamide 4K / Bis 4K - Solution (30 %) = A1851,0250.
 The addition of 365 ml deionized or bidistilled water results in 500 ml Acrylamide 4K / Bis 4K - Solution (30 %) = A1851,0500.
 The addition of 730 ml deionized or bidistilled water results in 1 L Acrylamide 4K / Bis 4K - Solution (30 %) = A1851,1000.

AquaPlus - Mix 37.5 : 1 (30 %)

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide 4K 292.2 g/L	pH (10 %; H ₂ O; 20°C) . . . 5.0 - 7.0	A (1 cm/10 % in H ₂ O)	A1857,0250	250 ml
Bisacrylamide 4K 7.8 g/L	Acrylic acid (titr.) max. 0.001 %	300 nm max. 0.15	A1857,0500	500 ml
		320 nm max. 0.05	A1857,1000	1 L
		430 nm max. 0.005		

Comment: The addition of 182.5 ml deionized or bidistilled water results in 250 ml Acrylamide 4K / Bis 4K - Solution (30 %) = A1857,0250.

The addition of 365 ml deionized or bidistilled water results in 500 ml Acrylamide 4K / Bis 4K - Solution (30 %) = A1857,0500.

The addition of 730 ml deionized or bidistilled water results in 1 L Acrylamide 4K / Bis 4K - Solution (30 %) = A1857,1000.

Acrylamide - Solutions

Aqueous solutions

HS-No.: 38220000

Storage: RT

LGK: 6.1 B

Disposal: 9

Class / PG: 6.1/III

UN3426

WGK: 3

Danger

H372-H315-H361f-H340-H312-H350-

H301-H332-H317-H319

P280-P305+P351+P338-P201-

P302+P352



On the following pages you will find all standard Acrylamide - Solutions available from AppliChem. They should be stored at room temperature in tightly closed bottles. Please note that AppliChem offers the preparation of all kind of mixtures with the highly toxic material acrylamide as a special customer service for competitive prices.

If you use our 30 % or 40 % acrylamide stock solutions for SDS-PAGE (for proteins), non-denaturing PAGE (for DNA) or denaturing PAGE (for DNA), you may dilute the stock solutions according to the following formula: Divide the total volume of gel solution wanted (e. g. 100 ml) by the percentage of the stock solution (e.g. 30 %). Multiply the resulting number by the required concentration of monomer (e. g. 6 %) and you receive the volume of stock solution required (20 ml).

Example: To obtain 100 ml of a 6 % gel solution, made from a 30 % acrylamide stock solution 29 : 1, mix 20 ml of the 30 % stock solution with 10 ml of 10X TBE-Buffer (A0972) and 70 ml of water, according to the calculation: 100 ml / 30 % x 6 % = 20 ml of the 30 % stock solution.

Acrylamide - Solution (40 %) Molecular biology grade

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide (A3812) 400 g/L	DNases/RNases/Proteases		A3632,0250	250 ml
	 not detectable		A3632,0500	500 ml
	Acrylic acid (titr.) max. 0.001 %		A3632,1000	1 L

Acrylamide - Solution (30 %) Molecular biology grade

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide (A3812) 300 g/L	DNases/RNases/Proteases		A3651,0250	250 ml
	 not detectable		A3651,1000	1 L
	Acrylic acid (titr.) max. 0.001 %			

Acrylamide 4K - Solution (40 %)

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide 4K 400 g/L	Acrylic acid (titr.) max. 0.001 %		A0962,0250	250 ml
			A0962,0500	500 ml
			A0962,1000	1 L

Acrylamide 4K - Solution (30 %)

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide 4K 300 g/L	Acrylic acid (titr.) max. 0.001 %		A1154,0250	250 ml
			A1154,0500	500 ml
			A1154,1000	1 L

Acrylamide 2K - Solution (40 %)

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide 2K 400 g/L	Acrylic acid (titr.) max. 0.05 %		A0844,0250	250 ml
			A0844,0500	500 ml
			A0844,1000	1 L

Acrylamide 2K - Solution (30 %)

B

Composition:	Specification:		Order-No.	Quantity
Acrylamide 2K 300 g/L	Acrylic acid (titr.) max. 0.05 %		A1409,0250	250 ml
			A1409,0500	500 ml
			A1409,1000	1 L

Acrylamide 4K - Stacking gel solution (5 %) for SDS-PAGE

B

Composition:		Order-No.	Quantity
Acrylamide 4K - Mix 29 : 1 . 5 %		A3759,0250	250 ml
SDS ultrapure 0.1 %			
Tris (1 M; pH 6.8) 125 ml/L			

Acrylamide 4K - Stacking gel solution (4 %) for SDS-PAGE

B

Composition:

Acrylamide 4K - Mix 29 : 1 . 4 %
SDS ultrapure 0.1 %
Tris (1 M; pH 6.8) 125 ml/L

Order-No.
A2529,0250

Quantity
250 ml

Acrylamide 2K - Stacking gel solution (5 %) for SDS-PAGE

B

Composition:

Acrylamide 2K - Mix 29 : 1 . 5 %
SDS ultrapure 0.1 %
Tris (1 M; pH 6.8) 125 ml/L

Order-No.
A3402,0250

Quantity
250 ml

Acrylamide 2K - Stacking gel solution (4 %) for SDS-PAGE

B

Composition:

Acrylamide 2K - Mix 29 : 1 . 4 %
SDS ultrapure 0.1 %
Tris (1 M; pH 6.8) 125 ml/L

Order-No.
A3426,0250

Quantity
250 ml

Acrylamide 4K - Solution (50 %) - Mix 16.6 : 1

B

Composition:

Acrylamide 4K 471.6 g/L
Bisacrylamide 4K 28.4 g/L

Specification:

Acrylic acid (titr.) max. 0.001 %

Order-No.
A2556,0250
A2556,0500
A2556,1000

Quantity
250 ml
500 ml
1 L

Acrylamide - Solution (40 %) - Mix 19 : 1 Molecular biology grade

B

Composition:

Acrylamide (A3812) 380.0 g/L
Bisacrylamide (A3636) 20.0 g/L

Specification:

DNases/RNases/Proteases
. not detectable
Acrylic acid (titr.) max. 0.001 %

Order-No.
A3658,0250
A3658,0500
A3658,1000

Quantity
250 ml
500 ml
1 L

Literature: (1) Peacock, A.C. & Dingman, C.W. (1967) *Biochemistry* 7, 668-674

Molecular weight estimation and separation of ribonucleic acid by electrophoresis in agarose-acrylamide composite gels.

(2) Ambrose, B.J.B. & Pless, R.C. (1987) *Methods Enzymol.* 152, 522-538

DNA sequencing: Chemical methods.

(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: For the separation of oligonucleotides with a small number of bases, acrylamide gels with a small pore size are used. The pore size is determined by the total concentration of acrylamide and the ratio of acrylamide : bisacrylamide. For the sequencing of nucleic acids a ratio of acrylamide : bisacrylamide of 19 : 1 is used.

Caution: Acrylamide is a potent neurotoxin and absorbed through the skin. The effects of acrylamide are cumulative. Although polyacrylamide is suspected to be nontoxic, it should be handled with great care because of the possibility that it might contain small quantities of unpolymerized acrylamide.

Acrylamide - Solution (30 %) - Mix 19 : 1 Molecular biology grade

B

Composition:

Acrylamide (A3812) 285.0 g/L
Bisacrylamide (A3636) 15.0 g/L

Specification:

DNases/RNases/Proteases
. not detectable
Acrylic acid (titr.) max. 0.001 %

Order-No.
A3857,0250
A3857,0500
A3857,1000

Quantity
250 ml
500 ml
1 L

Acrylamide 4K - Solution (40 %) - Mix 19 : 1

B

Composition:

Acrylamide 4K 380.0 g/L
Bisacrylamide 4K 20.0 g/L

Specification:

Acrylic acid (titr.) max. 0.001 %

Order-No.
A1640,0250
A1640,0500
A1640,1000

Quantity
250 ml
500 ml
1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 19 : 1 (A3658).

Acrylamide 4K - Solution (30 %) - Mix 19 : 1

B

Composition:

Acrylamide 4K 285.0 g/L
Bisacrylamide 4K 15.0 g/L

Specification:

Acrylic acid (titr.) max. 0.001 %

Order-No.
A0967,0500
A0967,1000

Quantity
500 ml
1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 19 : 1 (A3658).

Acrylamide 2K - Solution (40 %) - Mix 19 : 1

B

Composition:

Acrylamide 2K 380.0 g/L
Bisacrylamide 2K 20.0 g/L

Specification:

Acrylic acid (titr.) max. 0.05 %

Order-No.
A0870,0250
A0870,0500
A0870,1000

Quantity
250 ml
500 ml
1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 19 : 1 (A3658).

Acrylamide 2K - Solution (30 %) - Mix 19 : 1

B

Composition:	Specification:
Acrylamide 2K 285.0 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 15.0 g/L	

Order-No.	Quantity
A0851,0250	250 ml
A0851,0500	500 ml
A0851,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 19 : 1 (A3658).

Acrylamide - Solution (40 %) - Mix 29 : 1 Molecular biology grade

B

Composition:	Specification:
Acrylamide (A3812) 38.67 %	DNases/RNases/Proteases
Bisacrylamide (A3636) 1.33 %	 not detectable
	Acrylic acid (titr.) max. 0.001 %

Order-No.	Quantity
A0385,0250	250 ml
A0385,0500	500 ml
A0385,1000	1 L

Acrylamide - Solution (30 %) - Mix 29 : 1 Molecular biology grade

B

Composition:	Specification:
Acrylamide (A3812) 290.0 g/L	DNases/RNases/Proteases
Bisacrylamide (A3636) 10.0 g/L	 not detectable
	Acrylic acid (titr.) max. 0.001 %

Order-No.	Quantity
A4983,0250	250 ml
A4983,0500	500 ml
A4983,1000	1 L

Acrylamide 4K - Solution (40 %) - Mix 29 : 1

B

Composition:	Specification:
Acrylamide 4K 386.7 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 13.3 g/L	

Order-No.	Quantity
A0950,0250	250 ml
A0950,0500	500 ml
A0950,1000	1 L

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87 Electrophoresis in agarose and acrylamide gels.
 (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
 (3) Hames, B.D. (1990) Chapter 3 in *Gel Electrophoresis of Proteins: A Practical Approach* 2nd ed. (Hames, B.D. & Rickwood, D. eds.) IRL Press.
 (4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: For most applications in the electrophoresis of nucleic acids or proteins, polyacrylamide gels are prepared from 30 % or 40 % stock solutions with a ratio Acrylamide : Bisacrylamide of 29 : 1 or 37.5 : 1.

Acrylamide 4K - Solution (30 %) - Mix 29 : 1

B

Composition:	Specification:
Acrylamide 4K 290.0 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 10.0 g/L	

Order-No.	Quantity
A0951,0250	250 ml
A0951,0500	500 ml
A0951,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 29 : 1 (A0950).

Acrylamide 2K - Solution (40 %) - Mix 29 : 1

B

Composition:	Specification:
Acrylamide 2K 386.7 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 13.3 g/L	

Order-No.	Quantity
A0853,0250	250 ml
A0853,0500	500 ml
A0853,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 29 : 1 (A0950).

Acrylamide 2K - Solution (30 %) - Mix 29 : 1

B

Composition:	Specification:
Acrylamide 2K 290.0 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 10.0 g/L	

Order-No.	Quantity
A0852,0250	250 ml
A0852,0500	500 ml
A0852,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (40 %) - Mix 29 : 1 (A0950).

Acrylamide 4K - Solution (40 %) - Mix 32 : 1

B

Composition:	Specification:
Acrylamide 4K 387.9 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 12.1 g/L	

Order-No.	Quantity
A0946,0250	250 ml
A0946,0500	500 ml
A0946,1000	1 L

Acrylamide 4K - Solution (30 %) - Mix 32 : 1

B

Composition:	Specification:
Acrylamide 4K 290.9 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 9.1 g/L	

Order-No.	Quantity
A0947,0250	250 ml
A0947,0500	500 ml
A0947,1000	1 L

Acrylamide 2K - Solution (40 %) - Mix 32 : 1

B

Composition:	Specification:
Acrylamide 2K 387.9 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 12.1 g/L	

Order-No.	Quantity
A0855,0250	250 ml
A0855,0500	500 ml
A0855,1000	1 L

Acrylamide 2K - Solution (30 %) - Mix 32 : 1

B

Composition:	Specification:
Acrylamide 2K 290.9 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 9.1 g/L	

Order-No.	Quantity
A0854,0250	250 ml
A0854,0500	500 ml
A0854,1000	1 L

Acrylamide - Solution (40 %) - Mix 37.5 : 1 Molecular biology grade

B

Composition:	Specification:
Acrylamide (A3812) 389.6 g/L	DNases/RNases/Proteases
Bisacrylamide (A3636) 10.4 g/L	 not detectable
	Acrylic acid (titr.) max. 0.001 %

Order-No.	Quantity
A4989,0100	100 ml
A4989,0250	250 ml
A4989,0500	500 ml
A4989,1000	1 L

Acrylamide - Solution (30 %) - Mix 37.5 : 1 Molecular biology grade

B

Composition:	Specification:
Acrylamide (A3812) 292.2 g/L	DNases/RNases/Proteases
Bisacrylamide (A3636) 7.8 g/L	 not detectable
	Acrylic acid (titr.) max. 0.001 %

Order-No.	Quantity
A3626,0250	250 ml
A3626,0500	500 ml
A3626,1000	1 L

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87 Electrophoresis in agarose and acrylamide gels.
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(3) Hames, B.D. (1990) Chapter 3 in *Gel Electrophoresis of Proteins: A Practical Approach* 2nd ed. (Hames, B.D. & Rickwood, D. eds.) IRL Press.
(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Greene Publishing & Wiley-Interscience, New York.

Comment: For most applications in the electrophoresis of nucleic acids or proteins, polyacrylamide gels are prepared from 30 % or 40 % stock solutions with a ratio Acrylamide : Bisacrylamide of 29 : 1 or 37.5 : 1.

Acrylamide 4K - Solution (40 %) - Mix 37.5 : 1

B

Composition:	Specification:
Acrylamide 4K 389.6 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 10.4 g/L	

Order-No.	Quantity
A1577,0250	250 ml
A1577,0500	500 ml
A1577,1000	1 L

Acrylamide 4K - Solution (30 %) - Mix 37.5 : 1

B

Composition:	Specification:
Acrylamide 4K 292.2 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 7.8 g/L	

Order-No.	Quantity
A1672,0250	250 ml
A1672,0500	500 ml
A1672,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (30 %) - Mix 37.5 : 1 (A3626).

Acrylamide 2K - Solution (40 %) - Mix 37.5 : 1

B

Composition:	Specification:
Acrylamide 2K 389.6 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 10.4 g/L	

Order-No.	Quantity
A0857,0250	250 ml
A0857,0500	500 ml
A0857,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (30 %) - Mix 37.5 : 1 (A3626).

Acrylamide 2K - Solution (30 %) - Mix 37.5 : 1

B

Composition:	Specification:
Acrylamide 2K 292.2 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 7.8 g/L	

Order-No.	Quantity
A0856,0250	250 ml
A0856,0500	500 ml
A0856,1000	1 L

Literature: and **comment** see Acrylamide 4K - Solution (30 %) - Mix 37.5 : 1 (A3626).

Acrylamide 4K - Solution (30 %) - Mix 49 : 1

B

Composition:	Specification:
Acrylamide 4K 294.0 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 6.0 g/L	

Order-No.	Quantity
A3381,0250	250 ml
A3381,0500	500 ml
A3381,1000	1 L

Acrylamide 2K - Solution (30 %) - Mix 49 : 1

B

Composition:	Specification:
Acrylamide 2K 294.0 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 6.0 g/L	

Order-No.	Quantity
A2964,0250	250 ml
A2964,0500	500 ml
A2964,1000	1 L

Acrylamide 2K - Solution (40 %) - Mix 49 : 1 for SSCP

B

Composition:	Specification:
Acrylamide 2K 392.0 g/L	Acrylic acid (titr.) max. 0.05 %
Bisacrylamide 2K 8.0 g/L	

Order-No.	Quantity
A3757,0250	250 ml
A3757,0500	500 ml
A3757,1000	1 L

Literature: (1) Orita, M. *et al.* (1989) *Proc. Natl. Acad. Sci. USA* **86**, 2766-2770

(2) Ren, J. *et al.* (1997) *Anal. Biochem.* **245**, 79-84

(3) Xie, J. *et al.* (2002) *J. Amer. Soc. Hort. Sci.* **127**, 925-930

Detection of polymorphisms of human DNA by gel electrophoresis as single-strand conformation polymorphisms.

Analysis of SSCP by Capillary Electrophoresis with Laser-Induced Fluorescence

Detection Using Short-Chain Polyacrylamide as Sieving Medium.

PCR-based SSCP Analysis to Clone Nine Aquaporin Genes in Cucumber.

Acrylamide 4K - Solution (63.9 %) - Mix 158.75 : 1 for TAU gels

B

Composition:	Specification:
Acrylamide 4K 635.0 g/L	Acrylic acid (titr.) max. 0.001 %
Bisacrylamide 4K 4.0 g/L	

Order-No.	Quantity
A3756,0500	500 ml
A3756,1000	1 L

Acrylamide : Diacryloylpiperazine - Solution (40 %) - Mix 39 : 1

HS-No.: 38220000

Storage: RT
Disposal: 9

Class / PG: 6.1/III

UN3426

Danger

H361f-H372-H317-H350-H340-H315-

H301-H319-H332-H312

P280-P201-P305+P351+P338-

P302+P352



Acrylamide 4K : Diacryloylpiperazine - Solution (40 %) - Mix 39 : 1

B

Composition:
Acrylamide 4K 390.0 g/L
Diacryloylpiperazine 10.0 g/L

Order-No.	Quantity
A7258,0500	500 ml
A7258,1000	1 L

Acrylamide 2K : Diacryloylpiperazine - Solution (40 %) - Mix 39 : 1

B

Composition:
Acrylamide 2K 390.0 g/L
Diacryloylpiperazine 10.0 g/L

Order-No.	Quantity
A4187,0250	250 ml
A4187,0500	500 ml
A4187,1000	1 L

Acrylamide - Sequencing solutions

Aqueous solutions

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN3426
WGK: 3
Danger
H332-H340-H319-H301-H350-H361f-
H372-H312-H317-H315
P305+P351+P338-P302+P352-P280-
P201



Acrylamide 4K - Sequamix 8

B

Composition:	Specification:	Order-No.	Quantity
Acrylamide 4K - Mix 19 : 1 . 8 %	Stability max. 6 months	A2109,0250	250 ml
TBE - Buffer 1X		A2109,0500	500 ml
TEMED 0.5 ml/L			
Urea ultrapure 420.42 g/L (7 M)			

Acrylamide 4K - Sequamix 6

B

Composition:	Specification:	Order-No.	Quantity
Acrylamide 4K - Mix 19 : 1 . 6 %	Stability max. 6 months	A2108,0250	250 ml
TBE - Buffer 1X		A2108,0500	500 ml
TEMED 0.5 ml/L			
Urea ultrapure 420.42 g/L (7 M)			

Acrylamide 4K - Sequamix 4

B

Composition:	Specification:	Order-No.	Quantity
Acrylamide 4K - Mix 19 : 1 . 4 %	Stability max. 6 months	A4850,0250	250 ml
TBE - Buffer 1X		A4850,0500	500 ml
TEMED 0.5 ml/L			
Urea ultrapure 420.42 g/L (7 M)			

Acrylamide 4K - Sequencing solution (40 %) 19 : 1

B

Composition:	Order-No.	Quantity
Acrylamide 4K 380.0 g/L	A1673,0500	500 ml
Bisacrylamide 4K 20.0 g/L	A1673,1000	1 L
Urea ultrapure 500.0 g/L		

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: Denaturing gels with a ratio 19 : 1 of Acrylamide/Bis are usually used for the sequencing of nucleic acids. With this solution, sequencing gels with an Acrylamide concentration up to 20 % can be prepared. We recommend to use these solutions in combination with the diluent A0941 (50 % solution of urea) and the sequencing gel buffer A0933 (50 % solution of urea with 10X TBE). Crystallized urea in these solutions can be redissolved by warming the mixture to 37°C.
1 Liter of the Acrylamide sequencing solutions allows you to prepare 66 gels with a concentration of 6 % Acrylamide and a volume of 100 ml.

Acrylamide 4K - Sequencing solution (25 %) 19 : 1

B

Composition:	Order-No.	Quantity
Acrylamide 4K 237.5 g/L	A1891,0500	500 ml
Bisacrylamide 4K 12.5 g/L	A1891,1000	1 L
Urea ultrapure 500.0 g/L		

Acrylamide 2K - Sequencing solution (40 %) 19 : 1

B

Composition:	Order-No.	Quantity
Acrylamide 2K 380.0 g/L	A0832,0250	250 ml
Bisacrylamide 2K 20.0 g/L	A0832,0500	500 ml
Urea ultrapure 500.0 g/L	A0832,1000	1 L

Acrylamide 2K - Sequencing solution (25 %) 19 : 1

B

Composition:	Order-No.	Quantity
Acrylamide 2K 237.5 g/L	A1557,0250	250 ml
Bisacrylamide 2K 12.5 g/L	A1557,0500	500 ml
Urea ultrapure 500.0 g/L	A1557,1000	1 L

Acrylamide - Sequencing solutions (DGGE)

Aqueous solutions

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9Class / PG: 6.1/III
UN3426

WGK: 3

Danger

H312-H350-H372-H317-H340-H315-
H332-H301-H319-H361f
P201-P305+P351+P338-P302+P352-
P280**Acrylamide - Solution 1 for DGGE**

B

Composition:Acrylamide 4K - Mix 37.5 : 1 9 %
TAE - Buffer 0.5X**Order-No.**
A7095,0500
A7095,1000**Quantity**
500 ml
1 L**Acrylamide - Solution 2 for DGGE**

B

Composition:Acrylamide 4K - Mix 37.5 : 1 9 %
Formamide 320 ml/L (32 % v/v)
TAE - Buffer 0.5X
Urea ultrapure 336 g/L**Order-No.**
A7100,0500
A7100,1000**Quantity**
500 ml
1 L**Acrylamide - Sequencing buffer**

B

HS-No.: 38220000

Storage: RT

Composition:TBE - Buffer 10X
Urea ultrapure 500 g/L**Order-No.**
A0933,0250
A0933,0500
A0933,1000**Quantity**
250 ml
500 ml
1 L

Comment:For the sequencing of nucleic acids, denaturing polyacrylamide gels with a ratio Acrylamide : Bisacrylamide of 19 : 1 are applied. In combination with the Acrylamide 2K or 4K - Sequencing solutions (A0832 or A1673) and the Acrylamide - Diluent for sequencing gels (A0941), this sequencing buffer can be used to prepare sequencing gels with a concentration up to 20 %. At low temperatures, urea may precipitate. Redissolve by warming to 37°C in a water bath. For each sequencing gel with a 100 ml volume, 10 ml of this buffer have to be included. 1 liter is sufficient for 100 gels à 100 ml.

Acrylamide - Diluent for sequencing gels

B

Urea - Solution 50 %

HS-No.: 38220000

Storage: RT

Composition:

Urea ultrapure 500 g/L

Order-No.
A0941,0500
A0941,1000**Quantity**
500 ml
1 L

Comment:For the sequencing of nucleic acids, denaturing polyacrylamide gels with a ratio Acrylamide : Bisacrylamide of 19 : 1 are applied. In combination with the Acrylamide 2K or 4K - Sequencing solutions (A0832 or A1673) and the Acrylamide - Sequencing buffer (A0933), this diluent for sequencing gels can be used to prepare sequencing gels with a concentration up to 20 %. At low temperatures, urea may precipitate. Redissolve by warming to 37°C in a water bath. For each sequencing gel with a monomer concentration of 6 % and 100 ml volume, 75 ml of this diluent have to be included. 1 Liter is sufficient for 13 gels à 100 ml.

Acrylamide - Sequencing kits

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9Class / PG: 6.1/III
UN3426

WGK: 3

Danger

H332-H361f-H340-H315-H372-H350-
H312-H301-H317-H319
P302+P352-P305+P351+P338-P201-
P280**Acrylamide 4K - Sequencing kit (25 %)**

B

Composition Kit 7250 ml Acrylamide - Sequencing buffer (A0933)
500 ml Acrylamide - Sequencing gel solution (A1891)
2 x 1 L Acrylamide - Diluent for sequencing gels (A0941)**Composition Kit 8**4 x 1 L Acrylamide - Diluent for sequencing gels (A0941)
500 ml Acrylamide - Sequencing buffer (A0933)
1 L Acrylamide - Sequencing gel solution (A1891)**Order-No.**
A0442,Kit7
A0442,Kit8**Quantity**
1 Kit
1 Kit

Comment:A description for the production of sequencing gels will be supplied with these kits. At a monomer concentration of 6 % and a total volume of 100 ml, 20 gels can be poured with Kit 7 and 40 gels with Kit 8, respectively.

Acrylamide 2K - Sequencing kit (25 %)

B

Composition Kit 5

2 x 1 L Acrylamide - Diluent for sequencing gels (A0941)
500 ml Acrylamide - Sequencing gel solution (A1557)
250 ml Acrylamide - Sequencing buffer (A0933)

Composition Kit 6

4 x 1 L Acrylamide - Diluent for sequencing gels (A0941)
500 ml Acrylamide - Sequencing buffer (A0933)
1 L Acrylamide - Sequencing gel solution (A1557)

Order-No.	Quantity
A2497,Kit5	1 Kit
A2497,Kit6	1 Kit

Comment: A description for the production of sequencing gels will be supplied with these kits. At a monomer concentration of 6 % and a total volume of 100 ml, 20 gels can be poured with Kit 5 and 40 gels with Kit 6, respectively.

Acrylamide - Stacking gel buffer for protein gels (8X)

B

8fold concentrated solution for electrophoresis

HS-No.: 38220000

Storage: RT

P262

Composition:

Tris 121.14 g/L (1 M)

Specification:

pH (H₂O) 6.8 ± 0.1 (20°C)
(adjusted with HCl)

Order-No.	Quantity
A1410,0250	250 ml
A1410,0500	500 ml

Literature: (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685

SDS polyacrylamide gel electrophoresis for separations of proteins from Bacteriophage T4.

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Acrylamide - Resolving gel buffer for protein gels (4X)

B

4fold concentrated solution for electrophoresis

HS-No.: 38220000

Storage: RT

P262

Composition:

Tris 181.71 g/L (1.5 M)

Specification:

pH (H₂O) 8.8 ± 0.1 (20°C)
(adjusted with HCl)

Order-No.	Quantity
A1411,0250	250 ml
A1411,0500	500 ml
A1411,1000	1 L

Literature: (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685

SDS polyacrylamide gel electrophoresis for separations of proteins from Bacteriophage T4.

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Acrylamide 4K - Ready-to-use solutions acc. to Ahn "single gels"

aqueous solution

HS-No.: 38220000

Storage: 2-8°C

LGK: 6.1 B

Disposal: 9

Class / PG: 6.1/III

UN3426

WGK: 3

Danger

H372-H332-H340-H315-H350-H301-

H317-H361f-H312-H319

P201-P302+P352-P280-

P305+P351+P338



Ahn *et al.* (1) introduced a simple and convenient-to-use modification of the sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE). In contrast to Laemmli's discontinuous buffer system (2), Ahn's "single gels" don't need a stacking and a resolving gel with different concentrations of buffers and polymer. The advantage of Ahn's "single gel" is the extended separation length while using the same gel cassette.

Composition: The ready-to-use solutions contain Acrylamide 4K : Bisacrylamide 4K 29 : 1 in a final concentration between 6 % and 15 %. The buffer composition of the acrylamide solution is: 100 mM glycine, 100 mM serine, 100 mM asparagine, and 76 mM Tris · HCl (pH 7.4). For the polymerization of 20 ml gel solution add 12 µl TEMED (Cat.No. A1148) and 200 - 500 µl APS (Cat.No. A1142) from a 10 % stock solution.

Running buffer and loading buffer: For denaturing conditions use SDS-Tris-Glycine electrophoresis buffer according to Laemmli (2): 192 mM Glycine, 0.1 % SDS, 25 mM Tris. A typical sample loading buffer is 2X Loading buffer for SDS-PAGE (Cat.No A3848 according to ref. 3): 0.2 % Bromophenol blue, 20 % Glycerol, 4 % SDS, 100 mM Tris · HCl (pH 6.8), and 200 mM DTT (add fresh).

As the acrylamide solution does not contain SDS the gels can be used for native PAGE. For this application, detergent (SDS) and reducing agents are omitted from electrophoresis buffers and sample buffers.

Transfer of proteins from the gel to blotting membranes is achieved by the same protocols used for discontinuous gels.

References: (1) Ahn, T. *et al.* (2001) *Anal. Biochem.* **291**, 300-301; (2) Laemmli, U.K. (1970) *Nature* **227**, 680-685; (3) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition, Page A1.20. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (6 %)

B

Acrylamide 4K : Bisacrylamide 4K
6 %

Separation range (kD)
approx. 55 - 200

Order-No.	Quantity
A7725,0500	500 ml
A7725,1000	1 L

Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (8 %)

B

Acrylamide 4K : Bisacrylamide 4K
8 %

Separation range (kD)
approx. 35 - 90

Order-No.
A7731,0500
A7731,1000

Quantity
500 ml
1 L

Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (10 %)

B

Acrylamide 4K : Bisacrylamide 4K
10 %

Separation range (kD)
approx. 18 - 85

Order-No.
A7740,0500
A7740,1000

Quantity
500 ml
1 L

Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (12 %)

B

Acrylamide 4K : Bisacrylamide 4K
12 %

Separation range (kD)
approx. 15 - 80

Order-No.
A7752,0500
A7752,1000

Quantity
500 ml
1 L

Acrylamide 4K - Ready-to-use solution acc. to Ahn "single gels" (15 %)

B

Acrylamide 4K : Bisacrylamide 4K
15 %

Separation range (kD)
approx. 12 - 45

Order-No.
A7781,0500
A7781,1000

Quantity
500 ml
1 L

Acrylamide 4K - Ready-to-use solutions for SDS-PAGE

Aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN3426
WGK: 3
Danger
H301-H350-H312-H315-H332-H319-
H340-H317-H372-H361f
P280-P201-P302+P352-
P305+P351+P338


The following Acrylamide 4K ultrapure solutions are based on the work of Laemmli. They have different concentrations of Acrylamide / Bisacrylamide in the ratio of 29 : 1, 0.1 % SDS and 380 mM Tris (pH 8.8).

Each pack of resolving gel solution (250 ml, 500 ml and 1 L) will be delivered with the corresponding stacking gel solution (100 ml, 125 ml and 250 ml, respectively). The concentration of the stacking gel solution (125 mM Tris, pH 6.8) is 5 % (A3759).

For the polymerisation of 100 ml gel solution you have to add 1 ml APS (A1142) from a 10 % stock solution (not supplied) and 50 µl TEMED (A1148; not supplied). Use the SDS-Tris-Glycine buffer (A1415; not supplied) as electrophoresis buffer.

Acrylamide 4K - Ready-to-use solution for SDS-PAGE (5 %)

B

Resolving gel (% Acrylamide 4K)
5

Separation range (kD)
approx. 60 - 210

Order-No.
A0709,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for SDS-PAGE (7.5 %)

B

Resolving gel (% Acrylamide 4K)
7.5

Separation range (kD)
approx. 35 - 95

Order-No.
A0710,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for SDS-PAGE (10 %)

B

Resolving gel (% Acrylamide 4K)
10

Separation range (kD)
approx. 15 - 70

Order-No.
A0711,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for SDS-PAGE (12.5 %)

B

Resolving gel (% Acrylamide 4K)
12.5

Separation range (kD)
approx. 14 - 57

Order-No.
A0712,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for SDS-PAGE (15 %)

B

Resolving gel (% Acrylamide 4K)
15

Separation range (kD)
approx. 12 - 45

Order-No.
A0713,0500

Quantity
500 ml

Literature: (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685

SDS polyacrylamide gel electrophoresis for separations of proteins from Bacteriophage T4.

Comment: The length of the stacking gel should be 1.5 times the length of the comb. If a shorter length is chosen, it may happen, that the stacking gel is damaged, when the comb is removed.

Acrylamide 2K - Ready-to-use solutions for SDS-PAGE

Aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN3426
WGK: 3
Danger
H340-H361f-H317-H301-H319-H315-
H350-H312-H372-H332
P305+P351+P338-P302+P352-P280-
P201


The following Acrylamide 2K ultrapure solutions are based on the work of Laemmli. They have different concentrations of Acrylamide / Bisacrylamide in the ratio of 29 : 1, 0.1 % SDS and 380 mM Tris (pH 8.8).

Each pack of resolving gel solution (250 ml, 500 ml and 1 L) will be delivered with the corresponding stacking gel solution (100 ml, 125 ml and 250 ml, respectively). The concentration of the stacking gel solution (125 mM Tris, pH 6.8) is 5 % (A3402).

For the polymerisation of 100 ml gel solution you may add 1 ml APS (A1142) from a 10 % stock solution (not supplied) and 50 µl TEMED (A1148; not supplied). Use the SDS-Tris-Glycine buffer (A1415; not supplied) as electrophoresis buffer.

Acrylamide 2K - Ready-to-use solution for SDS-PAGE (5 %)

B

Resolving gel (% Acrylamide 2K)
5

Separation range (kD)
approx. 60 - 210

Order-No.
A0704,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for SDS-PAGE (7.5 %)

B

Resolving gel (% Acrylamide 2K)
7.5

Separation range (kD)
approx. 35 - 95

Order-No.
A0705,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for SDS-PAGE (10 %)

B

Resolving gel (% Acrylamide 2K)
10

Separation range (kD)
approx. 15 - 70

Order-No.
A0706,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for SDS-PAGE (12.5 %)

B

Resolving gel (% Acrylamide 2K)
12.5

Separation range (kD)
approx. 14 - 57

Order-No.
A0707,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for SDS-PAGE (15 %)

B

Resolving gel (% Acrylamide 2K)
15

Separation range (kD)
approx. 12 - 45

Order-No.
A0708,0500

Quantity
500 ml

Literature: (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685

SDS polyacrylamide gel electrophoresis for separations of proteins from Bacteriophage T4.

Comment: The length of the stacking gel should be 1.5 times the length of the comb. If a shorter length is chosen, it may happen, that the stacking gel is damaged, when the comb is removed.

Acrylamide 4K - Ready-to-use solutions for non-denaturing DNA-PAGE

Aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN3426
WGK: 3
Danger
H372-H315-H340-H317-H350-H361f-
H301-H319-H312-H332
P305+P351+P338-P302+P352-P280-
P201


The following Acrylamide - ready-to-use solutions are prepared from 30 % stock solutions of Acrylamide 4K ultrapure. They contain Acrylamide / Bisacrylamide in a ratio of 29 : 1 in different concentrations and 1X TBE buffer (pH 8.3).

For the polymerisation of 100 ml gel solution you may add 1 ml APS (A1142) from a 10 % stock solution (not supplied) and 50 µl TEMED (A1148; not supplied). Use TBE - buffer (A0972 or A1417; not supplied) as electrophoresis buffer.

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)

B

% Acrylamide 4K
3.5

Separation range (bp)
approx. 1000 - 2000

Order-No.
A0721,0500
A0721,1000

Quantity
500 ml
1 L

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)

B

% Acrylamide 4K
5

Separation range (bp)
approx. 80 - 500

Order-No.
A0722,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)

B

% Acrylamide 4K
6

Separation range (bp)
approx. 70 - 450

Order-No.
A0723,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (8 %)

% Acrylamide 4K	Separation range (bp)	Order-No.	Quantity
8	approx. 60 - 400	A0724,0500	500 ml

B

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)

% Acrylamide 4K	Separation range (bp)	Order-No.	Quantity
12	approx. 40 - 200	A0725,0500	500 ml

B

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)

% Acrylamide 4K	Separation range (bp)	Order-No.	Quantity
15	approx. 25 - 150	A0726,0500	500 ml

B

Acrylamide 4K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)

% Acrylamide 4K	Separation range (bp)	Order-No.	Quantity
20	approx. 6 - 100	A0727,0500	500 ml

B

Acrylamide 2K - Ready-to-use solutions for non-denaturing DNA-PAGE

Aqueous solution

HS-No.: 38220000

Storage: RT

LGK: 6.1 B

Disposal: 9

Class / PG: 6.1/III

UN3426

WGK: 3

Danger

H319-H361f-H317-H340-H372-H301-

H350-H312-H315-H332

P201-P302+P352-P280-

P305+P351+P338



The following Acrylamide - ready-to-use solutions are prepared from 30 % stock solutions of Acrylamide 2K extrapure. They contain Acrylamide / Bisacrylamide in a ratio of 29 : 1 in different concentrations and 1X TBE buffer (pH 8.3).
For the polymerisation of 100 ml gel solution you may add 1 ml APS (A1142) from a 10 % stock solution (not supplied) and 50 µl TEMED (A1148; not supplied). Use TBE - buffer (A0972 or A1417; not supplied) as electrophoresis buffer.

Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (3.5 %)

% Acrylamide 2K	Separation range (bp)	Order-No.	Quantity
3.5	approx. 1000 - 2000	A0714,0500	500 ml

B

Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (5 %)

% Acrylamide 2K	Separation range (bp)	Order-No.	Quantity
5	approx. 80 - 500	A0715,0500	500 ml

B

Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (6 %)

% Acrylamide 2K	Separation range (bp)	Order-No.	Quantity
6	approx. 70 - 450	A0716,0500 A0716,1000	500 ml 1 L

B

Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (12 %)

% Acrylamide 2K	Separation range (bp)	Order-No.	Quantity
12	approx. 40 - 200	A0718,0500	500 ml

B

Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (15 %)

% Acrylamide 2K	Separation range (bp)	Order-No.	Quantity
15	approx. 25 - 150	A0719,0500	500 ml

B

Acrylamide 2K - Ready-to-use solution for non-denaturing DNA-PAGE (20 %)

% Acrylamide 2K	Separation range (bp)	Order-No.	Quantity
20	approx. 6 - 100	A0720,0500	500 ml

B

Acrylamide 4K - Ready-to-use solutions for denaturing DNA-PAGE

Aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN3426
WGK: 3
Danger
H317-H350-H315-H361f-H372-H319-
H312-H332-H340-H301
P305+P351+P338-P201-P302+P352-
P280


The following Acrylamide - ready-to-use solutions are prepared from 40 % stock solutions of the 4K ultrapure qualities of acrylamide and bisacrylamide. They contain Acrylamide / Bisacrylamide in a ratio of 19 : 1 in different concentrations, 50 % Urea ultrapure and 1X TBE buffer (pH 8.3).
For the polymerisation of 100 ml gel solution you may add 1 ml APS (A1142) from a 10 % stock solution (not supplied) and 50 µl TEMED (A1148; not supplied). Use TBE - buffer (A0972 or A1417; not supplied) as electrophoresis buffer.

Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (4 %)

B

% Acrylamide 4K
4

BPB / XC (= bp)

Order-No.
A0733,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (5 %)

B

% Acrylamide 4K
5

BPB / XC (= bp)
35 / 130

Order-No.
A0734,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (6 %)

B

% Acrylamide 4K
6

BPB / XC (= bp)
26 / 106

Order-No.
A0735,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (8 %)

B

% Acrylamide 4K
8

BPB / XC (= bp)
19 / 76

Order-No.
A0736,0500

Quantity
500 ml

Acrylamide 4K - Ready-to-use solution for denaturing DNA-PAGE (10 %)

B

% Acrylamide 4K
10

BPB / XC (= bp)
12 / 55

Order-No.
A0738,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solutions for denaturing DNA-PAGE

Aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN3426
WGK: 3
Danger
H332-H301-H317-H312-H361f-H372-
H319-H340-H350-H315
P280-P305+P351+P338-P201-
P302+P352


The following Acrylamide - ready-to-use solutions are prepared from 40 % stock solutions of the 2K ultrapure qualities of acrylamide and bisacrylamide. They contain Acrylamide / Bisacrylamide in a ratio of 19 : 1 in different concentrations, 50 % Urea ultrapure and 1X TBE - buffer (pH 8.3).
For the polymerisation of 100 ml gel solution you may add 1 ml APS (A1142) from a 10 % stock solution (not supplied) and 50 µl TEMED (A1148; not supplied). Use TBE - buffer (A0972 or A1417; not supplied) as electrophoresis buffer.

Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (4 %)

B

% Acrylamide 2K
4

BPB / XC (= bp)

Order-No.
A0728,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (5 %)

B

% Acrylamide 2K
5

BPB / XC (= bp)
35 / 130

Order-No.
A0729,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (6 %)

B

% Acrylamide 2K
6

BPB / XC (= bp)
26 / 106

Order-No.
A0730,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (8 %)

B

% Acrylamide 2K
8

BPB / XC (= bp)
19 / 76

Order-No.
A0731,0500

Quantity
500 ml

Acrylamide 2K - Ready-to-use solution for denaturing DNA-PAGE (10 %)

B

% Acrylamide 2K
10

BPB / XC (= bp)
12 / 55

Order-No.
A0732,0500

Quantity
500 ml

Acrylic acid amide see Acrylamide crystalline Page 51
 α_1 -ACT see α_1 -Antichymotrypsin, human Page 111

Actein HPLC grade

B

from *Cimicifuga racemosa*

$C_{37}H_{56}O_{11}$
 $M = 676.84$ g/mol
CAS-No.: 18642-44-9
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5263,0010	10 mg
A5263,0010DOC	10 mg
A5263,0020	20 mg
A5263,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), IR, MS, hr-MS, Melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Acteoside HPLC grade

B

Vibascoside

from *Paulownia tormentosa*

$C_{29}H_{36}O_{15}$
 $M = 624.59$ g/mol
CAS-No.: 61276-17-3
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5265,0020	20 mg
A5265,0020DOC	20 mg
A5265,0050	50 mg
A5265,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Actidion see Cycloheximide *BioChemica* Page 252

Actinomycin C₁ see Actinomycin D *BioChemica* Page 66

Actinomycin D *BioChemica*

B

Actinomycin C₁, Dactinomycin

$C_{62}H_{80}N_{12}O_{16}$
 $M = 1255.45$ g/mol
CAS-No.: 50-76-0
HS-No.: 29419000
EC-No.: 200-063-6

Storage: RT
protected from light
LGK: 6.1 B
Disposal: 3

Class / PG: 6.1/1
UN2811
WGK: 3
Danger
H300
P301+P310-P264



Melting point 241 - 243°C (dec.)

Specification:

Assay min. 92 %
 λ_{max} 440 - 445 nm

Order-No.	Quantity
A1489,0005	5 mg
A1489,0025	25 mg

- Literature:** (1) Meienhofer, J. & Atherton, E. (1977) *Adv. Appl. Microbiol.* **16**, 201-299
(2) Hashimoto, Y. et al. (1986) *Methods Enzymol.* **121**, 817-828
(3) Martin, S.J. et al. (1990) *J. Immunol.* **145**, 1859-1867
(4) Wadkins, R.M. & Jovin, T.M. (1991) *Biochemistry* **30**, 9469-9478
(5) Betzel, C. et al. (1993) *Biochim. Biophys. Acta* **1161**, 47-51
(6) Rill, R.L. & Hecker, K.H. (1996) *Biochemistry* **35**, 3525-3533

Review article: Actinomycin.

Coating of liposomes with subunits of monoclonal IgM antibody and targeting of the liposomes.

Induction of apoptosis (programmed cell death) in human leukemic HL-60 cells by inhibition of RNA or protein synthesis.

Actinomycin D and 7-Aminoactinomycin D binding to single stranded DNA.

Actinomycin as proteinase inhibitors.

Sequence specific Actinomycin D binding to single-stranded DNA inhibits HIV reverse transcriptase and other polymerases.

Comment: Actinomycin D intercalates into DNA and thereby inhibits the transcription. It binds preferentially to guanine and blocks the RNA polymerase during the elongation step. A high dose (2 μ g/ml $\approx$ 1.59 μ M) inhibits the transcription of all RNA species, lower concentrations (40 ng/ml $\approx$ 32 nM) inhibit the synthesis of rRNA. At very high concentrations (30 μ M) the activity of the HIV-1 reverse transcriptase, Klenow fragment or Vent polymerase are inhibited (6). In case of single-stranded DNA, Actinomycin D binds to guanine nucleotides and the GpC motive, respectively (4,6). A concentration of 5 μ g/ml (3.97 μ M) is sufficient to induce the apoptosis in a human leukemia cell line (3). The activity of actinomycin D is not restricted to the binding to double- or single-stranded DNA. A competitive inhibition of the bacterial serine protease subtilisin DY, proteinase K and thermolysin has been shown (5).
Solubility, Stability: There are different information available: Actinomycin D is soluble in methanol. Alternatively, propylene glycol may be used. According to "Maniatis", solutions in deionized water may be prepared as well. Store solutions of actinomycin D **protected from light**. Usually, freezing or refrigeration at 2-8°C of the stock solution (100 mM) is recommended. The U.S. Pharmacopoeia indicates a stability of a refrigerated solution in methanol with up to 90 days. Other sources mention a stability of 30 days if kept frozen.

Actinospectacin see Spectinomycin dihydrochloride pentahydrate *BioChemica* Page 759

recombinant Human Activin A see rHu Activin A Page 67

rHu Activin A

B

recombinant Human Activin A
lyophilized without additives
from *E. coli*

$M = 26.0$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin (LAL test) max. 1.0 EU/μg
Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8534,0002	2 μg
A8534,0010	10 μg

Comment: Avoid repeated freeze/thaw cycles.

ADA Buffer grade

B

N-(2-Acetamido)-iminodiacetic acid

$C_6H_{10}N_2O_5$
 $M = 190.16$ g/mol
CAS-No.: 26239-55-4
HS-No.: 29241900
EC-No.: 247-530-0

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point 210 - 215°C (dec.)
Useful pH range pH 6.0 - 7.2 (20°C)
 pK_a (20°C) 6.62

Specification:

Assay (titr., anhydr. subst.) . min. 99 %
Chloride max. 0.05 %
Sulfate max. 0.05 %
Fe max. 0.001 %

Pb max. 0.0005 %
A (1 cm/10 % in 1 M NaOH)
290 nm max. 0.1

Order-No.	Quantity
A1061,0050	50 g
A1061,0100	100 g
A1061,0250	250 g

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* 5, 467-477

Hydrogen ion buffers for biological research.

Comment: The free acid of ADA is of low solubility. The mono- or disodium salt is readily soluble at pH 6.4 - 7.4. Dissolve the free acid in equimolar sodium hydroxide.

Adenine BioChemica

B

6-Aminopurine

$C_5H_5N_5$
 $M = 135.13$ g/mol
CAS-No.: 73-24-5
HS-No.: 29335995
EC-No.: 200-796-1

Storage: RT
LGK: 10 - 13

WGK: 3*
Danger
H301
P301+P310



Melting point approx. 350°C
 pK_1 (20°C) < 1.0
 pK_2 (20°C) 4.1
 pK_3 (20°C) 9.8

Specification:

Assay min. 99 %
 λ_{max} 259 - 265 nm
E 1 %/1 cm, λ_{max} : 0.1 M HCl
..... 950 - 1050

Heavy metals (as Pb) .. max. 0.001 %
As max. 0.0001 %

Order-No.	Quantity
A0939,0010	10 g
A0939,0025	25 g
A0939,0100	100 g

Adenine deoxyriboside see 2'-Deoxyadenosine monohydrate *BioChemica* Page 263

Adenine-9-β-D-ribofuranoside see Adenosine *BioChemica* Page 67

Adenine sulfate BioChemica

B

Melting point 205 - 215°C

$(C_5H_5N_5)_2 \cdot H_2SO_4$
 $M = 368.34$ g/mol
CAS-No.: 321-30-2
HS-No.: 29335995
EC-No.: 206-286-5

Storage: RT
LGK: 10 - 13
Disposal: 3

P321-P330-P301+P310

Specification:

Assay (TLC) min. 99 %
Appearance white - light yellow
powder
Pb max. 0.001 %

Order-No.	Quantity
A1596,0010	10 g
A1596,0025	25 g
A1596,0100	100 g

Adenosine BioChemica

B

Adenine-9-β-D-ribofuranoside

$C_{10}H_{13}N_5O_4$
 $M = 267.25$ g/mol
CAS-No.: 58-61-7
HS-No.: 29349990
EC-No.: 200-389-9

Storage: RT
LGK: 10 - 13

WGK: 1

Melting point 234 - 236°C
 pK_1 (20°C) 3.5
 pK_2 (20°C) 12.5

Specification:

Assay min. 99 %
E 1 %/1 cm, λ_{max} 560 - 580 phos-
phate buffered at pH
7.0)

Heavy metals (as Pb) .. max. 0.001 %

Order-No.	Quantity
A0833,0010	10 g
A0833,0025	25 g
A0833,0100	100 g

Adenosine 5'-diphosphoric acid disodium salt dihydrate *BioChemica*

B

<i>ADP-Na₂</i> , <i>ADP disodium salt dihydrate</i>	$C_{10}H_{13}N_5Na_2O_{10}P_2 \cdot 2H_2O$ <i>M</i> = 507.20 g/mol CAS-No.: 16178-48-6 HS-No.: 29349990 EC-No.: 240-314-7	Storage: -20°C LGK: 10 - 13

Specification:

Assay	min. 95 %
AMP	max. 2 %
ATP	max. 1 %
Loss on drying (105°C; 2 h)	max. 10 %

Order-No.	Quantity
A0948,0001	1 g
A0948,0005	5 g
A0948,0010	10 g

Adenosine 5'-monophosphoric acid disodium salt *BioChemica*

B

<i>AMP-Na₂</i> , <i>AMP disodium salt dihydrate</i>	$C_{10}H_{12}N_5Na_2O_7P \cdot 2H_2O$ <i>M</i> = 427.22 g/mol CAS-No.: 4578-31-8 HS-No.: 29349990 EC-No.: 224-961-2	Storage: 2-8°C LGK: 10 - 13 Disposal: 3

Specification:

Assay	min. 99 %
α20°C/D; 1 % H ₂ O	-44° - -47°
Heavy metals (as Pb)	max. 0.001 %
Water (K.F.)	max. 26 %

Order-No.	Quantity
A1622,0010	10 g
A1622,0025	25 g
A1622,0100	100 g

Adenosine 5'-triphosphoric acid disodium salt *BioChemica*

B

<i>ATP-Na₂</i> , <i>ATP disodium salt</i>	$C_{10}H_{14}N_5Na_2O_{13}P_3$ <i>M</i> = 551.10 g/mol CAS-No.: 987-65-5 HS-No.: 29349990 EC-No.: 213-579-1	Storage: -20°C Shipment: wet ice LGK: 10 - 13	WGK: 1

Specification:

Assay	min. 98 %
Heavy metals (as Pb)	max. 0.001 %
ADP	max. 1 %
AMP	max. 0.5 %
Water (K.F.)	approx. 10 %

Order-No.	Quantity
A1348,0005	5 g
A1348,0010	10 g
A1348,0025	25 g
A1348,0100	100 g

Literature: (1) Kanfer, J.N. & Spielvogel, C.H. (1973) *Biochim. Biophys. Acta* **327**, 405-411
(2) Janknecht, R. et al. (1995) *Oncogene* **10**, 1209-1216

Inhibition of β-N-acetylhexosaminidase by lactones.
Investigation of the transcription factor SAP1a with luciferase reporter gen constructs.

Comment: Stock solutions of ATP are prepared at a concentration of 100 mM in aqueous solutions and stored at -20°C. These solutions have an acidic pH. If ATP is applied at higher concentrations, the pH of the solution has to be increased. The measurement of luciferase activity in extracts from transiently transfected cells requires a final concentration of 5 mM ATP. If the pH value is not adjusted, determination of enzyme activity is impossible. Therefore, a stock solution is prepared by dissolving ATP in water (9/10 of the final volume) and the addition of 2 M Tris base (1/10 of the final volume).

S-(5'-Adenosyl)-L-methionine iodide *BioChemica*

B

<i>SAM</i>	$C_{15}H_{23}IN_6O_5S$ <i>M</i> = 526.35 g/mol CAS-No.: 3593-13-8 HS-No.: 29349990 EC-No.: 222-486-5	Storage: -20°C LGK: 10 - 13

Specification:

Assay	approx. 80 %

Order-No.	Quantity
A3761,0001	1 mg
A3761,0005	5 mg

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. p. 11.48. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: S-Adenosylmethionine (SAM) is a naturally occurring substance (amino acid). It is the most active methyl-donor in the body and is known to be essential in many biochemical processes. In molecular biology, the iodide salt serves as methyl-donor for DNA-Methylases. It is applied at concentrations of 80 μM. Stock solutions (20 mM) are prepared in 5 mM H₂SO₄, 10 % ethanol. Store in aliquots at -20°C (1).

ADH, bacterial Technical grade see Alcohol dehydrogenase, bacterial Technical grade Page 78

Adipic acid for synthesis

C

<i>Hexanedioic acid</i>	$C_6H_{10}O_4$ <i>M</i> = 146.14 g/mol CAS-No.: 124-04-9 HS-No.: 29171200 EC-No.: 204-673-3	Storage: RT LGK: 10 - 13 Disposal: 4	WGK: 1 Warning H319 P305+P351+P338


Specification:

Assay (titr.)	min. 99 %
Identity (IR)	complies
Melting range	150 - 154°C

Order-No.	Quantity
A2581,0500	500 g
A2581,1000	1 kg

Adonite see Adonitol *BioChemica* Page 69

Adonitol BioChemica

B

Ribitol, Adonite

$C_5H_{12}O_5$
 $M = 152.15$ g/mol
CAS-No.: 488-81-3
HS-No.: 29054900
EC-No.: 207-685-7

Storage: RT
LGK: 10 - 13

WGK: 1

Specification:

Assay min. 99 %
 α 20°C/D; 4 %, H_2O $0.0' \pm 0.2'$
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 0.1 % (65°C)

Sulfated ash max. 0.1 %
As max. 0.00005 %
Fe max. 0.0005 %

Order-No.	Quantity
A4337,0010	10 g
A4337,0025	25 g
A4337,0100	100 g

ADP disodium salt dihydrate see Adenosine 5'-diphosphoric acid disodium salt dihydrate BioChemica Page 68

ADP- Na_2 see Adenosine 5'-diphosphoric acid disodium salt dihydrate BioChemica Page 68

Adriamycin hydrochloride see Doxorubicin hydrochloride BioChemica Page 308

Adsorbent for chromatography see Florisil® for chromatography 60-100 mesh Page 352

AEBSF hydrochloride BioChemica

B

4-[(2-Aminoethyl)-benzenesulfonyl] fluoride hydrochloride

$C_8H_{10}FNO_2S \cdot HCl$
 $M = 239.69$ g/mol
CAS-No.: 30827-99-7
HS-No.: 29214900

Storage: 2-8°C
LGK: 10 - 13

WGK: 1
Danger
H314
P305+P351+P338-P310-P280



Melting point 181 - 185°C
Solubility (20°C) 10 g/L (H_2O)

Specification:

Assay min. 98 %
Assay (titr., calc. on dried substance) min. 98 %
Loss on drying max. 1.0 %

Order-No.	Quantity
A1421,0025	25 mg
A1421,0100	100 mg
A1421,0250	250 mg
A1421,0500	500 mg
A1421,0001	1 g

Literature: (1) Walsmann, P. et al. (1972) *Acta biol. med. germ.* **28**, 577-585

(2) Markwardt, F. et al. (1973) *Thrombosis Res.* **2**, 343-348

(3) Murphy, B.J. et al. (1993) *J. Biol. Chem.* **268**, 27355-27362

(4) Nathan, D.F. & Lindquist, S. (1995) *Mol. Cell. Biol.* **15**, 3917-3925

(5) Taylor, J.A. et al. (1995) *Mol. Cell. Biol.* **15**, 4149-4157

(6) Taylor, J.A. et al. (1995) *Immunology* **86**, 629-635

Inactivation of Trypsin and Thrombin through 4-Amidinobenzene sulfonyl fluoride and 4-[(2-Aminoethyl)-benzene sulfonyl] fluoride.

Synthetic low molecular weight inhibitors of serum kallikrein.

Identification of the sites of selective phosphorylation and dephosphorylation of the rat brain Na^+ channel a subunit by cAMP-dependent protein kinase and phosphoprotein phosphatases.

Mutational analysis of HSP90 function: Interactions with a steroid receptor and a protein kinase.

Activation of the high-affinity immunoglobulin E receptor FcεRI in RBL-2H3 cells is inhibited by syk SH2 domains.

Serine protease inhibitors block the priming of monocytes for enhanced superoxide release.

Comment: AEBSF irreversibly inactivates thrombin and other serine proteases (e. g. chymotrypsin, kallikrein, plasmin, proteinase K, trypsin) by sulfonylation of a functional group in the active center of the enzyme (1, 2). AEBSF (LD_{50} oral, mouse 2.8 g/kg) is a substantially less toxic substitute for PMSF and DFP. It is highly water-soluble and its solutions have an acidic pH. At this pH, stability is high. AEBSF is inactivated at 37°C by 50 % after 5 hours. We recommend storage of the stock solution (e. g. 20 mM or 100 mM in water or buffer) at -20°C (stable for up to 2 months; at +4°C approx. 1 week; ref. 6). It should be added to the assay buffers just before use at a final concentration of 0.1 - 2 mM (e. g. ref. 3-5).

AEDP

B

3-[(2-Aminoethyl)dithio]propionic acid

$C_5H_{11}NO_2S_2$
 $M = 181.27$ g/mol
HS-No.: 29309099

Storage: 2-8°C

Melting point 160 - 162°C

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.	Quantity
A7811,0050	50 mg
A7811,0100	100 mg

Comment: AEDP is a cleavable heterobifunctional amino acid reagent. It reacts toward NHS and sulfo-NHS esters and toward amines and hydrazines via carbodiimide activation. The disulfide bond in the spacer arm is cleavable by e.g. TCEP (Tris-(2-carboxyethyl)-phosphine hydrochloride) and DTT (1,4-Dithiothreitol).

Aerosil see Silica powdered, pure DAB Page 712

Aerosporin see Polymyxin B sulfate BioChemica Page 633

AES see Taurine Page 796

Aescin see Escin BioChemica Page 331

rM aFGF see rM aFGF Page 348

rHu aFGF see rHu aFGF Page 347

Ag₂SO₄ see Silver sulfate Page 717

Agar

Agar-Agar

CAS-No.: 9002-18-0
HS-No.: 13023100
EC-No.: 232-658-1

Storage: RT
LGK: 10 - 13

Agar Kobe I

B

Specification:

Ash max. 1.5 % Loss on drying max. 15 %
Gel point (1.5 %) 37 - 41°C pH (1.5 %; H₂O) 6.0 - 8.0
Gel strength (1.5 %) 800 - 1000 g/cm²
Heavy metals (as Pb) max. 0.002 %

Order-No.	Quantity
A2113,0250	250 g
A2113,0500	500 g
A2113,1000	1 kg

Agar Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable pH (1.5 %; H₂O) 6.0 - 8.0 (60°C)
Ash max. 4 % Gelatin not detectable
Gel point 30 - 36°C Starch not detectable
Gel strength (1.5 %) 750 - 1000 g/cm² Loss on drying max. 7 %

Order-No.	Quantity
A3477,0100	100 g
A3477,0250	250 g
A3477,0500	500 g

Agar Plant tissue culture grade

B

Specification:

Contamination with spores negative Melting point 85° ± 5°C
Gel point (1.5 %) 35 ± 5°C pH after autoclaving 6.5 ± 0.5
Gel strength (1.5 %) 800 - 1000 g/cm² pH before autoclaving 7.0 ± 0.5
Insoluble particles negative

Order-No.	Quantity
A2111,0250	250 g
A2111,0500	500 g
A2111,1000	1 kg

Comment: This agar is processed and manufactured from selected seaweeds (Rodophyceae). This agar has a very high gel strength (≥ 1000 g/cm²) and can be used at low concentrations in tissue culture (0.5 - 0.6 %). It is recommended for the techniques of micropropagation of ornamental, horticultural and woody species, *invitro* selection, genetic manipulation and other methods of amelioration of plants.

Agar purified Bacteriology grade

B

Specification:

Electroendoosmosis ≤ 0.450 (EEO)
Gel point (1.5 %) 32 - 37.5°C
Gel strength (1.5 %) 700 - 1200 g/cm²
Melting point 80 - 95°C
pH (1.5 %) 5.8 - 7.0

Order-No.	Quantity
A2112,0100	100 g
A2112,0250	250 g
A2112,0500	500 g
A2112,1000	1 kg

Agar Bacteriology grade

B

*suitable for the preparation of LB agar plates;
very low mineral content*

Specification:

Ash max. 4.0 % Ca max. 0.2 %
Gel point 30 - 36°C Mg max. 0.1 %
Gel strength (1.5 %) 750 - 1000 g/cm²
pH (1.5 %; H₂O; 60°C) 6.0 - 8.0
Gelatin not detectable
Starch not detectable
Water (K.F.) max. 7.0 %

Order-No.	Quantity
A0949,0100	100 g
A0949,0250	250 g
A0949,0500	500 g
A0949,1000	1 kg
A0949,10006	6 x 1 kg
A0949,5000	5 kg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience. New York.

Comment: For the preparation of 1 Liter medium for LB agar plates weigh 10 g tryptone, 5 g yeast extract, 5 g NaCl and 15 g agar. Add 1 ml 1 N NaOH to the dissolved powder. The medium will be autoclaved for 25 minutes. At a temperature of -50°C, it is still liquid and additives (e. g. antibiotics) can be added. If 32 to 40 ml LB agar per plate are used, one liter will result in approx. 25 to 30 plates. Freshly poured plates cool down with a slightly opened lid and turn them upside down when stored at +4°C.

Agar powdered pure, Food grade

C

Specification:

Ash approx. 1.5 % pH (1 %; H₂O) approx. 8.0
Contamination with spores negative
Gel point < 50°C
Gel strength (1.5 %) ≥ 750 g/cm²
Loss on drying (105°C) max. 15 %

Order-No.	Quantity
A0917,0500	500 g
A0917,1000	1 kg
A0917,10006	6 x 1 kg
A0917,5000	5 kg

Agar-Agar see Agar Page 70

β-Agarase BioChemica

B

[EC 3.2.1.81]

Solution in 50 mM Tris · HCl (pH 7.5); 0.1

M NaCl; 0.1 % Triton® X-100; 50 %

Glycerol

from *Pseudomonas atlantica*

Specification:

DNases/RNases/Proteases not detectable

Activity 0.2 - 1 U/μl

Phosphatases not detectable

M = approx. 32700 g/mol

CAS-No.: 37288-57-6

HS-No.: 35079090

Storage: -20°C

Order-No.
A4712,0100

Quantity
100 U

Literature: (1) Morrice, L.M. *et al.* (1983) *Eur. J. Biochem.* **135**, 553-558

β-Agarase I and II from *Pseudomonas atlantica*. Purifications and some properties.

(2) Sambrook, J. & Russel, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page 5.33-5.35. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Suppl. 59. Page 2.6.6-2.6.7.

Greene Publishing & Wiley-Interscience, New York.

Comment: β-Agarase has been purified from an *E. coli* strain carrying the cloned gene encoding β-Agarase I from *Pseudomonas atlantica*. The enzyme specifically digests the agarose polysaccharide core made up of repeating 1,3-linked β-D-galactopyranose and 1,4-linked 3,6-anhydro-α-L-galactopyranose into neoagarose-oligosaccharides. β-Agarase from *Pseudomonas atlantica* is used for the purification of DNA and RNA from 'low melt' agaroses. This technique allows the isolation of large DNA fragments (> 10kb), because there is almost no shearing of the DNA, which occurs with all other isolation techniques.

Unit definition: One β-agarase unit completely degrades 100 μl (approx. 100 mg) of molten 1 % low melting point agarose in 30 minutes at 42°C. The DNA and RNA, respectively, is isolated by ethanol precipitation. β-Agarase is active in the pH-range from 5.0 - 8.5 with an optimum at 6.0. The optimal temperature is 40 - 42°C. Raising the temperature to 45°C accelerates the reaction, but reduces stability. Above 50°C the enzyme is rapidly inactivated. The recovered nucleic acids can be subjected to many further manipulations such as restriction endonuclease digestion, ligation, labeling, sequencing, amplification, etc. To prevent a co-precipitation of agarose-oligosaccharides, perform the precipitation at room temperature with ammonium acetate (instead of sodium acetate). Please note, that ammonium-ions will inhibit polynucleotide kinase at concentrations above 7 mM. In case, that the isolated DNA has to be phosphorylated, use sodium acetate.

The following agaroses from AppliChem are suited for digestion by β-Agarase: A2121 Agarose IMG, A2119 Agarose Low Melt 3, A3762 Agarose Low Melt Large DNA grade. A protocol for the recovery of DNA from low melting point agarose gels will be supplied.

Agaroses for Gel electrophoresis

CAS-No.: 9012-36-6

HS-No.: 39139000

EC-No.: 232-731-8

Storage: RT

LGK: 10 - 13

Agarose Basic



B

Specification:

DNases/RNases/Proteases not detectable

Ash ≤ 0.45 %

Clarity max. 4 NTU

Electroendosmosis 0.14 - 0.16 (EEO)

Gel point 36 ± 1.5°C

Gel strength (1 %) ≥ 1000 g/cm²

Gel strength (1.5 %) ≥ 2200 g/cm²

Melting point 88 ± 1.5°C

Sulfate ≤ 0.1 %

Order-No.

A8963,0100

A8963,0250

A8963,0500

A8963,1000

Quantity

100 g

250 g

500 g

1 kg

Agarose low EEO (Agarose Standard)

B

Specification:

DNases/RNases/Proteases not detectable

Ash ≤ 0.5 %

Electroendosmosis 0.09 - 0.13 (EEO)

Gel point (1.5 %) 36 ± 1.5°C

Gel strength (1 %) ≥ 1200 g/cm²

Gel strength (1.5 %) ≥ 2300 g/cm²

Melting point 88 ± 1.5°C

Moisture ≤ 7 %

Sulfate ≤ 0.2 %

Order-No.

A2114,0050

A2114,0100

A2114,0250

A2114,0500

A2114,1000

Quantity

50 g

100 g

250 g

500 g

1 kg

Comment: The agaroses low EEO, high EEO, medium EEO and special EEO differ mainly in their electroendosmosis (EEO) values. These values are very important in the separation especially of proteins. All four agaroses can be mixed to meet the desired EEO value. This Agarose low EEO Standard has a very low EEO value and is recommended for the preparation of **analytical and preparative gels** with a very good resolution of nucleic acid fragments with sizes larger than 1000 bp (at higher concentrations even less than 1000 bp). It may be used at concentrations between 0.8 and 2 %. Agarose Low EEO has a very low DNA binding capacity and is suited for blotting experiments (Northern, Southern, ...), control of restriction digests etc. and can be used in all buffer systems.

Agarose medium EEO

B

Specification:

DNases/RNases/Proteases not detectable

Ash ≤ 0.5 %

Electroendosmosis 0.16 - 0.19 (EEO)

Gel point (1.5 %) 36 ± 1.5°C

Gel strength (1 %) ≥ 750 g/cm²

Gel strength (1.5 %) ≥ 2000 g/cm²

Melting point 88 ± 1.5°C

Moisture ≤ 7 %

Sulfate ≤ 0.25 %

Order-No.

A2116,0050

A2116,0100

A2116,0250

A2116,0500

Quantity

50 g

100 g

250 g

500 g

Comment: The agaroses low EEO, high EEO, medium EEO and special EEO mainly differ in electroendosmosis (EEO) values. These values are very important in the separation especially of proteins. All four agaroses can be mixed to meet the desired EEO value. The Agarose medium EEO is recommended for the **electrophoresis of serum proteins and immunoelectrophoresis**. It may also be used in nucleic acid electrophoresis, since it has a very low DNA binding activity. It is not suited for blotting experiments.

Agarose high EEO

B

Specification:

DNases/RNases/Proteases not detectable

Ash ≤ 1.1 %

Electroendosmosis 0.23 - 0.26 (EEO)

Gel point (1.5 %) 36 ± 1.5°C

Gel strength (1 %) ≥ 750 g/cm²

Gel strength (1.5 %) ≥ 1000 g/cm²

Melting point 88 ± 1.5°C

Moisture ≤ 7 %

Sulfate ≤ 0.25 %

Order-No.

A2115,0050

A2115,0100

A2115,0250

A2115,0500

Quantity

50 g

100 g

250 g

500 g

Comment: The agaroses low EEO, high EEO, medium EEO and special EEO mainly differ in electroendosmosis (EEO) values. These values are very important in the separation especially of proteins. All four agaroses can be mixed to meet the desired EEO value. Agarose high EEO is recommended for the **electrophoresis of serum proteins, immuno electrophoresis and counter immuno electrophoresis**.

Agarose special EEO

B

Specification:

DNases/RNases/Proteases	not detectable	Gel point (1.5 %)	36 ± 1.5°C	Melting point	88 ± 1.5°C	Order-No.	Quantity
Ash	≤ 1.5 %	Gel strength (1 %)	≥ 700 g/cm ²	Moisture	≤ 7 %	A2117,0100	100 g
Electroendosmosis	≥ 0.3 (EEO)	Gel strength (1.5 %)	≥ 1100 g/cm ²	Sulfate	≤ 0.3 %		

Comment: The agaroses low EEO, high EEO, medium EEO and special EEO differ mainly in electroendosmosis (EEO) values. These values are very important in the separation especially of proteins. All four agaroses can be mixed to meet the desired EEO value. The Agarose special EEO is **especially** recommended for **counter immuno electrophoresis** and **immuno electrophoresis** (especially serum globulins like IgG and IgM).

Agarose Low Melt S

B

Specification:

DNases/RNases/Proteases	not detectable	Gel strength (1 %)	≥ 100 g/cm ²	Sulfate	≤ 0.14 %	Order-No.	Quantity
Ash	≤ 0.3 %	Gel strength (1.5 %)	≥ 350 g/cm ²			A2118,0010	10 g
Electroendosmosis	≤ 0.12 (EEO)	Melting point (1.5 %)	≥ 62°C			A2118,0025	25 g
Gel point (1.5 %)	≤ 20°C	Moisture	≤ 7 %			A2118,0100	100 g

Comment: The Agarose Low Melt S is recommended for **capillary electrophoresis, hybridoma and tissue cell cloning, preparation of plant protoplasts and viral or anchorage independent growth assays**. This agarose has the same applications as Agarose Low Melt 3, but at the same gel concentration, it has more sieving capacity than Agarose Low Melt 3. It may be used in all buffer systems and has a low DNA binding capacity. The low melting temperature (≤ 60°C) allows the recovery of nucleic acids below their denaturing temperatures without damage. Many manipulations of nucleic acids can be performed 'in-gel' without prior purification of the nucleic acid, because the low gelling temperature of the agarose (≤ 17°C) assures, that the agarose is in a liquid state at the temperature where manipulations are performed (e.g. enzyme digestion, ligation, DNA labelling, nick translation, random priming, PCR, etc.).

This agarose should be used at concentrations higher than 1.2 %, because at lower concentrations the gels are very fragile and cannot be handled properly. As the gelling temperature of this agarose is lower than room temperature, it is necessary that gelling is carried out at +4°C overnight.

Agarose Low Melt 3

B

Specification:

DNases/RNases/Proteases	not detectable	Gel strength (1 %)	≥ 300 g/cm ²	Sulfate	≤ 0.12 %	Order-No.	Quantity
Ash	≤ 0.3 %	Gel strength (1.5 %)	≥ 550 g/cm ²			A2119,0010	10 g
Electroendosmosis	≤ 0.12 (EEO)	Melting point (1.5 %)	≤ 65.5°C			A2119,0025	25 g
Gel point (1.5 %)	24 - 28°C	Moisture	≤ 7 %			A2119,0100	100 g

Comment: The Agarose Low Melt 3 is recommended for the separation of **DNA and RNA fragments larger than 1000 bp** as well as **proteins in preparative electrophoresis** and **tissue culture and viral plaque applications**. It may be used in all buffer systems and has a low DNA binding capacity. The low melting temperature (≤ 65.5°C) allows the recovery of nucleic acids below their denaturing temperatures without damage. Many manipulations of nucleic acids can be performed 'in-gel' without prior purification of the nucleic acid, because the low gelling temperature of the agarose (24 - 28°C) assures, that the agarose is in a liquid state at the temperature where manipulations are performed (e.g. enzyme digestion, ligation, DNA labelling, nick translation, random priming, PCR, etc.).

Please note that autoclaving at pH-values below 5.5 will lead to the hydrolysis of the agarose (no gelling anymore!). Dissolve in buffered solutions only - not in pure water! Due to its low gelling point it is recommended to place the gel for one hour at +4°C before use to assure maximum resolution.

Agarose Low Melt 4

B

Specification:

DNases/RNases/Proteases	not detectable	Gel strength (3 %)	≥ 500 g/cm ²	Sulfate	≤ 0.11 %	Order-No.	Quantity
Ash	≤ 0.3 %	Gel strength (5 %)	≥ 1000 g/cm ²			A2120,0010	10 g
Electroendosmosis	≤ 0.12 (EEO)	Melting point (1.5 %)	≤ 75°C			A2120,0025	25 g
Gel point (3 %)	24 - 31°C	Moisture	≤ 7 %			A2120,0100	100 g

Comment: The Agarose Low Melt 4 is recommended **especially for analytical gels of DNA with less than 500 bp** and for **capillary electrophoresis**. It is **not recommended for blotting** assays. It has a low DNA binding capacity, can be used in all buffer systems and is very transparent at high gel concentrations (5 %). The high gel strength allows an efficient mechanical handling at all concentration, which is unique for 'Low Melting Point' agaroses and minimizes damage of the gel. At 3 % concentration, this agarose has a resolution of DNA fragments similar to gels made with polyacrylamide at concentrations of 8 %. An important property is the separation of DNA fragments smaller than 50 bp with differences of 3 bp between them. Note that agarose gels are easier prepared and absolutely free of neurotoxic dangers.

Due to its high viscosity at concentrations **higher than 3 %**, its dissolution is recommended by boiling water bath or autoclave (121°C; 15 minutes). This will not alter the mechanical properties of the gel nor its sieving capacity. It is recommended to keep the gel at +4°C overnight for proper gelling process and resolution properties.

Agarose Low Melt Large DNA grade

B

Specification:

DNases/RNases/Proteases	not detectable	Gel point (1.5 %)	24 - 28°C	Sulfate	≤ 0.1 %	Order-No.	Quantity
Ash	≤ 0.4 %	Gel strength (1 %)	≥ 250 g/cm ²			A3762,0010	10 g
Digestion by agarase	complies	Melting point (1.5 %)	≤ 65.5°C			A3762,0025	25 g
Electroendosmosis	≤ 0.12 (EEO)	Moisture	≤ 7 %			A3762,0100	100 g

Comment: This agarose is a "low melting point" agarose with a very high resolving capacity for large DNA fragments (≥ 1000 bp). In the molten gel, enzymatic manipulations can be performed (e. g. digestion, ligation, PCR, etc.). Therefore, an extraction of the DNA for these purposes is unnecessary. Agarose Low Melt *Large DNA grade* is ideal for the digestion with β-agarase. This allows the isolation of large fragments. It is suited for **analytical and preparative** gels.

Agarose IMG

B

Specification:

DNases/RNases/Proteases	not detectable	Gel strength (1.5 %)	≥ 500 g/cm ²	Sulfate	≤ 0.11 %	Order-No.	Quantity
Ash	≤ 0.35 %	Gel strength (3 %)	≥ 1500 g/cm ²			A2121,0050	50 g
Electroendosmosis	≤ 0.12 (EEO)	Melting point (3 %)	≥ 80°C			A2121,0100	100 g
Gel point (3 %)	≤ 35.5°C	Moisture	≤ 7 %				

* Intermediate Melting and Gelling Point

Comment: The Agarose IMG has an intermediate melting and gelling point and is recommended for **analytical gels of DNA and RNA with less than 1000 bp, especially PCR products**. It can be used in **blotting** assays with fragments less than 600 bp. Working at concentrations of 1.8 - 3 %, fragments from 150 - 1000 bp may be separated. Increasing the concentration to 4.5 % allows the separation of fragments up to 50 bp in size. It has a low DNA binding capacity, low background fluorescence, can be used in all buffer systems and is very transparent at high gel concentrations. The high gel strength allows an efficient mechanical handling at all concentrations and minimizes damage of the gel. At concentrations **higher than 3 %**, its dissolution is recommended by boiling water bath or autoclave (121°C; 15 minutes). This will not alter the mechanical properties of the gel nor its sieving capacity. It is recommended to leave the gel at +4°C for one hour before use to assure a total gelling process.

Agarose SMG

B

Specification:

DNases/RNases/Proteases	not detectable	Gel strength (1.5 %) ...	≥ 2000 g/cm ²	Sulfate	≤ 0.11 %
Ash	≤ 0.35 %	Gel strength (4 %) ...	≥ 4250 g/cm ²		
Electroendosmosis	≤ 0.12 (EEO)	Melting point (1.5 %) ...	≤ 89 °C		
Gel point (1.5 %)	≤ 36.5 °C	Moisture	≤ 7 %		

Order-No.	Quantity
A2122,0050	50 g
A2122,0100	100 g
A2122,0250	250 g

Comment: The Agarose SMG has a 'standard melting and gelling temperature and is recommended for analytical gels of DNA and RNA with 100 to 1500 bp (at concentrations of 2 - 5 %), including PCR products. It can be also employed when DNA is recovered for subsequent use in enzymatic procedures. It may be used for blotting assays. At a concentration of 4 %, DNA fragments with an approximate size of 150 - 2200 bp can be transferred in a southern blot. Agarose SMG has a low DNA binding capacity, has a high transparency, even at high concentrations, can be used in all buffer systems and has a low background fluorescence. The high gel strength and a high flexibility allows an efficient mechanical handling, minimizing damage of the gel.

Agarose MP

B

Specification:

DNases/RNases/Proteases	not detectable	Gel strength (1.5 %) ...	≥ 3200 g/cm ²
Ash	≤ 0.25 %	Melting point	88 ± 1.5 °C
Electroendosmosis	≤ 0.12 (EEO)	Moisture	≤ 7 %
Gel point	36 ± 1.5 °C	Sulfate	≤ 0.12 %
Gel strength (1 %)	≥ 1800 g/cm ²		

Order-No.	Quantity
A1091,0025	25 g
A1091,0100	100 g
A1091,0250	250 g
A1091,0500	500 g

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 1995 *Current Protocols in Molecular Biology*, Greene Publishing & Wiley-Interscience, New York.

Comment: Agarose MP is suited for the electrophoresis of proteins and nucleic acids and can be used for a broad range of fragment sizes, just by altering the gel concentration. It is a high gel strength agarose, designed for conventional constant field to 'pulse field gel electrophoresis' (PFGE). It dissolves easily in a microwave and can be used in all buffer systems at working concentrations from 0.4 - 2 %. For the separation of linear DNA fragments with a size of ≤ 50 kb to 100 bp Agarose MP is the agarose of choice. It has a very low DNA binding capacity and is suited for blotting experiments, analytical and preparative gels.

Agar substitute gelling agent see Gellan gum Page 371

AgNO₃ - Solutions see Silver nitrate - Solutions Page 714

AgNO₃ - Standard volumetric solutions see Silver nitrate - Standard volumetric solutions Page 715

Agnusid HPLC grade

B

10-p-Hydroxybenzoylaucubin
from *Vitex agnus castus*

C₂₂H₂₆O₁₁
M = 466.38 g/mol
CAS-No.: 11027-65-7
HS-No.: 29420000

Storage: 2-8 °C

Specification:

Assay min. 98 %

Order-No.	Quantity
A6904,0010	10 mg
A6904,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

AGP see α₁-Acid Glycoprotein, human Page 50

ALA see 5-Aminolevulinic acid hydrochloride BioChemica Page 88

Alamethicin BioChemica

B

Antibiotic U-22324
from *Trichoderma viride*

C₉₂H₁₅₀N₂₂O₂₅
M = 1964.3 g/mol
CAS-No.: 27061-78-5
HS-No.: 29419000

Storage: -20 °C

Class / PG: 6.1/III
UN3462
Danger
H301
P301+P310



Melting point 255 - 270 °C

Specification:

Assay (TLC) approx. 98 %

Order-No.	Quantity
A7635,0005	5 mg
A7635,0010	10 mg

Literature: (1) Archer, S.J. & Cafiso, D.S. (1991) *Biophys. J.* **60**, 380-388
(2) Archer, S.J. et al. (1991) *Biophys. J.* **60**, 389-398
(3) Mak, D.-O.D. & Webb, W.W. (1995) *Biophys. J.* **69**, 2323-2336
(4) Mak, D.-O.D. & Webb, W.W. (1995) *Biophys. J.* **69**, 2337-2349
(5) Jones, L.R. et al. (1980) *J. Biol. Chem.* **255**, 9971-9980

Voltage-dependent conductance of alamethicin in phospholipid vesicles. Dynamics and aggregation of the peptide ion channel alamethicin. Two Classes of Alamethicin Transmembrane Channels: Molecular Models from Single-Channel Properties. Molecular Dynamics of Alamethicin Transmembrane Channels from Open-Channel Current Noise Analysis. Unmasking effect of Alamethicin on Enzyme Activities of Cardiac Sarcolemmal Vesicles.

Comment: Alamethicin is a 20 amino acid peptide from the fungus *Trichoderma viride*. This peptide antibiotic can act as a monovalent cation ionophore. In lipid bilayers, the peptide appears to be primarily α-helical. The conduction is thought to result from an aggregate of alamethicin monomers aligned in an antiparallel fashion, forming transmembrane channels.
Solubility: Alamethicin is soluble in DMSO, methanol, and ethanol. A stock solution may be made to 30 to 50 mg/ml in absolute ethanol.

Alaninamide see Thiostrepton BioChemica Page 813

Alanin-Aminotransferase see Glutamate Pyruvate Transaminase (GPT), human Page 380

β-Alanine

3-Aminopropionic acid

C₃H₇NO₂

Storage: RT

WGK: nwg

Density (d 20°C) 1.44 g/cm³

M = 89.09 g/mol

LGK: 10 - 13

Melting point 200°C (dec.)

CAS-No.: 107-95-9

HS-No.: 29224920

Solubility (20°C) 545 g/L (H₂O)

EC-No.: 203-536-5

β-Alanine Cell culture grade

B

Specification:

Pyrogen test complies

As max. 0.0001 %

Assay (titr.) min. 99 %

Fe max. 0.001 %

Solubility (1 M; H₂O; 20°C) ... clear, colorless

Pb max. 0.001 %

pH (1 M; H₂O) 6.0 - 7.5 (20°C)**Order-No.****Quantity****A3483,0250**

250 g

A3483,0500

500 g

A3483,1000

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

β-Alanine BioChemica

B

Specification:

Assay (titr.) min. 99 %

Heavy metals (as Pb) max. 0.001 %

Solubility (1 M; H₂O; 20°C) ... clear, colorlesspH (1 M; H₂O) 6.0 - 7.5 (20°C)**Order-No.****Quantity****A2123,0250**

250 g

A2123,0500

500 g

A2123,1000

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Alanine

2-Aminopropionic acid

C₃H₇NO₂

Storage: RT

Solubility (25°C) 166.5 g/L (H₂O)

M = 89.09 g/mol

LGK: 10 - 13

CAS-No.: 56-41-7

HS-No.: 29224985

EC-No.: 200-273-8

L-Alanine Cell culture grade

B

Specification:

Pyrogen test complies

Chloride max. 0.02 %

Assay (titr.) min. 99 %

Sulfate max. 0.02 %

α20°C/D; 10 %, 6 M HCl ... +13.7° - +15.1°

As max. 0.0001 %

Other amino acids max. 0.5 %

Fe max. 0.001 %

Ammonium max. 0.1 %

Pb max. 0.001 %

Order-No.**Quantity****A3646,0050**

50 g

A3646,0100

100 g

A3646,0500

500 g

A3646,1000

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Alanine BioChemica

B

Specification:

Assay (titr.) min. 99 %

Sulfate max. 0.02 %

α20°C/D; 10 %, 6 M HCl ... +13.7° - +15.1°

Heavy metals (as Pb) max. 0.001 %

Other amino acids max. 0.5 %

Ammonium max. 0.1 %

Chloride max. 0.02 %

Order-No.**Quantity****A3690,0050**

50 g

A3690,0100

100 g

A3690,0250

250 g

A3690,0500

500 g

A3690,1000

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Alanine pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %

Identity complies

Ammonium max. 0.02 %

α20°C/D; 10 %, HCl 250 g/L +13.5° - +15.5°

Loss on drying max. 0.2 %

Chloride max. 0.02 %

α25°C/D; 10 %, 6 M HCl ... +13.7° - +15.1°

Organic vol. impurities complies

Sulfate max. 0.03 %

Appearance of solution complies

Sulfated ash max. 0.1 %

Fe max. 0.001 %

Heavy metals (as Pb) max. 0.001 %

Other amino acids max. 0.5 %

Order-No.**Quantity****A1688,0050**

50 g

A1688,0100

100 g

A1688,0250

250 g

A1688,0500

500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Alanine dehydrogenase, bacterial Technical grade

B

[EC 1.4.1.1]

supplied liquid in 2.4 M ammonium sulfate, pH 7.0
of bacterial origin

M = ~280 kDa
HS-No.: 35079090

Storage: 2-8°C
Shipment: wet ice

pH opt. (oxidative deamination)
.....10.0
pH opt. (reductive amination)
.....8.5

Specification:

Activity min. 500 U/ml

Order-No.
A7906,0200
A7906,1000
Quantity
200 U
1000 U

Comment: The bacterial L-Alanine dehydrogenase metabolizes aliphatic and aromatic ketones and keto esters.

Unit definition: One unit is the amount of enzyme required to metabolize 1 µmol substrate per minute in 50 mM Na₂CO₃ buffer, pH 10.0 at 30°C. This technical enzyme grade is intended for use in chemical synthesis.

L-Alanine : 2-Oxoglutarate Aminotransferase see Glutamate Pyruvate Transaminase (GPT), human Page 380

L-Alanyl-L-glutamine Cell culture grade

B

stable Glutamine

C₈H₁₅N₃O₄
M = 217.23 g/mol
CAS-No.: 39537-23-0
HS-No.: 29241900

Storage: RT
LGK: 10 - 13

Specification:

Pyrogen test complies
Assay (titr.) min. 98 %
α20°C/D; 1 % +8' - +12'
Heavy metals (as Pb) max. 0.001 %

Loss on drying max. 1.0 %
Residue on ignition max. 0.1 %
pH (5 %; H₂O) 5.0 - 6.0 (20°C)
Chloride max. 0.02 %

As max. 0.0002 %

Order-No.
A3198,0010 10 g
A3198,0025 25 g
A3198,0100 100 g

◆ This product is of non-animal origin!

Albumins

Storage: 2-8°C
LGK: 10 - 13

Albumin acetylated

B

from bovine serum

CAS-No.: 9048-46-8
HS-No.: 35029070
EC-No.: 292-322-5

Specification:

DNases/RNases/Proteases not detectable
Assay (Protein) min. 98 %
Heavy metals max. 0.005 %
Loss on drying max. 5 %

Sulfated ash max. 1.5 %
pH (0.1 %; 0.15 M KCl; 20°C) 6.1 - 7.1
Immunoglobulins not detectable

Other enzymes . not detectable
Sodium acetate . max. 1 %

Order-No.
A0845,0100 100 mg

Literature: (1) Chaiswing, L. *et al.* (2005) *Mol. Cancer Ther.* **4**, 1056-1064

(2) Ji *et al.* (2007) *Proc. Natl. Acad. Sci. U.S.A.* **104**, 21

Manganese superoxide dismutase and inducible NOS modify early oxidative events in acute Adriamycin-induced mitochondrial toxicity.
Acetylated albumin (0.1%) is applied in the dilution of antibodies in PBS.

Comment: Albumin acetylated is very well suited for blotting experiments in molecular biology (see ref. 1: Acetylated albumin in TBS for blocking of membranes in Western blots; ref. 2: Acetylated albumin (0.1%) for dilution of antibodies in PBS). The manufacturing process (acetylation according to Gonzales *et al.* (1977) *Arch. Biochem. Biophys.* **182**, 404-408) to gain **acetylated albumin** from Albumin - H1 (A0847) uses acetic anhydride and chaotropic agents which destroys all kind of enzyme activity. Please note that Albumin acetylated is not suited for protein determination.

Albumin EIA and RIA grade

B

from bovine serum

CAS-No.: 9048-46-8
HS-No.: 35029070
EC-No.: 292-322-5

Specification:

Proteases not detectable
Assay (Protein) min. 98 %
Heavy metals max. 0.0001 %
Loss on drying max. 3 %

Sulfated ash max. 2 %
pH (1 %; 0.15 M NaCl; 20°C) approx. 7.2
Fatty acids max. 0.01 %

Immunoglobulins not detectable

Order-No.
A0850,0010 10 g
A0850,0050 50 g
A0850,0500 500 g

Comment: Albumin EIA and RIA grade is produced by double fractionation (Cohn) with additional heat shock, charcoal treatment and dialysis. It is especially suitable for EIA and RIA and contains almost no fatty acids (< 100 mg/kg). Enzyme activity and endotoxins are not detectable.

Albumin Fraction V (pH 7.0)

B

BSA		M = approx. 68000 g/mol		
from bovine serum		CAS-No.: 9048-46-8		
		HS-No.: 35029070		
		EC-No.: 292-322-5		
Specification:			Order-No.	Quantity
Assay (Protein) min. 98 %			A1391,0025	25 g
Heavy metals max. 0.001 %			A1391,0050	50 g
Loss on drying max. 3 %			A1391,0100	100 g
Sulfated ash max. 3 %			A1391,0250	250 g
pH (2 %; H ₂ O; 20°C) 6.6 - 7.5			A1391,0500	500 g
Fat max. 1.0 %				

Literature: (1) Taylor, J.A. *et al.* (1995) *Mol. Cell. Biol.* **15**, 4149-4157
(2) Reinhard, M. *et al.* (1995) *EMBO J.* **14**, 1583-1589
(3) O'Neill, S.D. & Spanswick, R.M. (1984) *J. Membrane Biol.* **79**, 231-2439
(4) Fazekas de St. Groth, S. *et al.* (1963) *Biochim. Biophys. Acta* **71**, 377-391
(5) Peters, T.A. & Sjöholm, I. eds. (1977) Albumin: Structure, Biosynthesis, Function. FEBS 11th Meeting Copenhagen 1977 Vol. 50 Colloquium B9 [Pergamon Press].
(6) Cobianchi, F. & Wilson, S.H. (1987) *Methods Enzymol.* **152**, 94-110.
(7) Harlow, E. & Lane, D. eds. (1988) Antibodies: A Laboratory Manual. Cold Spring Harbour (Seite 496+684).
(8) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. eds. (2001) *Current Protocols in Molecular Biology*. Supplement 21, Page 3.4.2, Greene Publishing & Wiley-Interscience, New York.
(9) Bradford, M.M. (1976) *Anal. Biochem.* **72**, 248-254

Application: Blocking of free surfaces of immuno blots.
Application: Blocking of free surfaces of immuno blots.
Stabilization of proteins during homogenization of plant tissue.
Standard for calibration curves for the determination of the protein concentration.
Enzyme for the modification and labeling of DNA and RNA.
Enzyme for the modification and labeling of DNA and RNA.

Quantification of protein concentration in microgram-quantities.

Comment: Bovine serum albumin (BSA) is added as a stabilizing component for proteins / enzymes to several enzyme reaction and storage buffers. The concentration usually ranges from 0.01 % (0.1 mg/ml; e. g. ref. 2) to 3 % (30 mg/ml; e. g. ref. 1, 2). BSA is added to the 10X concentrated buffers of DNA-modifying enzymes or restriction enzymes in a concentration of 0.5 mg/ml (see e. g. ref. 6, 8). Alternatively, BSA can be substituted by gelatin for such purposes at the same concentration. Besides, albumin is applied as a blocking agent for blocking unbound surfaces of blotting membranes in immunoblots (3 %; ref. 1, 2, 7) or ELISAs (3 % in PBS, ref. 2) or for the dilution of antisera and antibody-stock solutions, respectively. In ELISAs, BSA is frequently replaced by non-fat dried milk (A0830). As standard for protein determinations see ref. 9.

This fraction of albumin has been manufactured by a combination of the heat-shock method and alcohol precipitation. Albumin is stable as powder (3 years) or in solution (biological buffers like PBS; one year at +4°C to -20°C). Stock solutions are prepared in concentrations up to 20 %. If crystals are formed during storage of the solutions, they can be redissolved by warming up to 37°C and mixing. Usually, sodium azide is added at a final concentration of 2 mM (or 0.02 - 0.2 %) to prevent microbial contaminations.

Albumin Fraction V (pH 7.0) Blotting grade

B

from bovine serum		M = approx. 68000 g/mol		
		CAS-No.: 9048-46-8		
		HS-No.: 35029070		
		EC-No.: 292-322-5		
Specification:			Order-No.	Quantity
Proteases not detectable			A6588,0010	10 g
Assay (Protein) min. 96 %			A6588,0025	25 g
Heavy metals max. 0.0001 %			A6588,0050	50 g
pH (7 %; H ₂ O) 6.5 - 7.4 (20°C)			A6588,0100	100 g
Immunoglobulins not detectable				

Comment: Albumin Fraction V Blotting grade is manufactured by selective precipitation with ethanol, filtration and ultrafiltration and subsequent sterile filtration.

Albumin Fraction V (pH 5.2)

B

from bovine serum		M = approx. 68000 g/mol		
		CAS-No.: 9048-46-8		
		HS-No.: 35029070		
		EC-No.: 292-322-5		
Specification:			Order-No.	Quantity
Assay (Protein) min. 96 %			A2244,0025	25 g
Protein (Albumin) min. 98 %			A2244,0050	50 g
pH (7 %; H ₂ O; 20°C) 5.0 - 5.4			A2244,0100	100 g
NaCl max. 5 %			A2244,0500	500 g
Loss on drying max. 5 %				

Comment: This fraction of albumin is manufactured by a combination of the heat-shock method and alcohol precipitation.

Albumin Fraction V very low endotoxin

B

freeze-dried powder with low salt content		M = approx. 68000 g/mol		
from bovine serum		CAS-No.: 9048-46-8		
		HS-No.: 35029070		
		EC-No.: 292-322-5		
Specification:			Order-No.	Quantity
Assay (Protein) min. 98 %			A2536,0010	10 g
Endotoxin max. 2.0 EU/mg			A2536,0025	25 g
pH (7 %) 6.8 - 7.2				

Immunoglobulins negative

Loss on drying max. 5 %

Chloride max. 2 %

Na max. 1 %

Albumin - H1

B

from bovine serum

CAS-No.: 9048-46-8
HS-No.: 35029070
EC-No.: 292-322-5

Specification:

Assay (Protein) min. 98 %
Heavy metals max. 0.2 %
Loss on drying max. 5 %

Sulfated ash max. 3 %
pH (1 %; 0.15 M NaCl; 20°C) approx. 7.0

Fatty acids max. 0.02 %
Immunoglobulins not detectable

Order-No.
A0847,0010
A0847,0050
Quantity
10 g
50 g

Comment: Albumin - H1 is produced with a modern heat-shock method and represents a chemically pure protein. Globulins are effectively removed by denaturation. This Albumin is stabilized with caprylate (200 mg/kg).

Albumin - H2

B

from bovine serum

CAS-No.: 9048-46-8
HS-No.: 35029070
EC-No.: 292-322-5

Specification:

Assay (Protein) min. 98 %
Heavy metals max. 0.001 %
Loss on drying max. 5 %

pH (1 %; 0.15 M NaCl; 20°C) approx. 7.0
Fatty acids max. 0.003 %

Immunoglobulins not detectable

Order-No.
A0848,0010
A0848,0050
Quantity
10 g
50 g

Comment: Albumin - H2 is obtained from Albumin - H1 by treatment with charcoal and following dialysis for removal of fatty acids and most small molecular weight satellites. This procedure results in a very pure protein.

Albumin from chicken egg

B

lyophilized, salt-free

from chicken egg white; Ovalbumin

M = approx. 45000 g/mol
CAS-No.: 9006-59-1
HS-No.: 35021190
EC-No.: 232-692-7

Specification:

Assay (Protein) min. 98 %
Ash max. 4 %
Purity (Albumin) min. 95 %

Loss on drying max. 3 %

Order-No.
A2245,0005
A2245,0010
Quantity
5 g
10 g

Comment: Albumin from egg is manufactured by several ethanol precipitations.

Albumin crude from chicken egg

B

from chicken egg white; Ovalbumin

M = approx. 45000 g/mol
CAS-No.: 9006-59-1
HS-No.: 35021190
EC-No.: 232-692-7

Specification:

Assay approx. 80 %
Ash max. 4 %
Loss on drying max. 8 %

Order-No.
A4344,0250
A4344,0500
A4344,1000
Quantity
250 g
500 g
1 kg

Albumin, human

B

from human serum

CAS-No.: 70024-90-7
HS-No.: 35029070
EC-No.: 274-272-6

Specification:

Assay (SDS-PAGE) min. 96 %

Order-No.
A6611,0100
A6611,0001
Quantity
100 mg
1 g

Comment: This human albumin is prepared by the cold ethanol precipitation procedure.

Albumin crystallized

B

from bovine serum

CAS-No.: 9048-46-8
HS-No.: 35029070
EC-No.: 292-322-5

Specification:

Assay (Protein) min. 98 %
Heavy metals max. 0.0005 %
Sulfated ash max. 0.5 %

Water (K.F.) max. 5 %
pH (7 %; H₂O; 20°C) 5.0 - 5.4
Carbohydrates not detectable

Fatty acids not detectable
Globulins not detectable

Order-No.
A0846,0001
A0846,0005
Quantity
1 g
5 g

Comment: Crystalline albumin fraction V originates from a fraction after ethanol precipitation and recrystallized three times in a process running entirely below 0°C. This procedure leads to a very native protein, free of carbohydrates, globulins and fatty acids.

Albumin Microbiology grade

B

from bovine serum

CAS-No.: 9048-46-8
HS-No.: 35029070
EC-No.: 292-322-5

Specification:

Proteases not detectable
Assay (Protein) min. 99 %
Heavy metals max. 0.002 %
Loss on drying max. 5 %

Sulfated ash max. 3 %
pH (1 %; 0.15 M NaCl; 20°C) approx. 7.3
Fatty acids max. 0.02 %

Order-No.	Quantity
A0849,0010	10 g
A0849,0050	50 g
A0849,0250	250 g

Comment: Albumin Microbiology grade is produced by coarse alcohol fractionation. It contains globulins and growth factors and supplies rich nutrients to fastidious organisms, mycoplasmas, Leptospira and others.

Albumin Fraction V - Solution (10 %), sterile

B

aqueous solution

HS-No.: 38220000 Storage: 2-8°C

Composition:

Albumin (A1391) 100 g/L

Specification:

pH (20°C) 6.5 - 7.5

Order-No.	Quantity
A2541,0025	25 ml
A2541,0100	100 ml

Alcian blue 8 GS (C.I. 74240)

B

Alcian blue 8 GX, Ingrain Blue 1

M = approx. 1300 g/mol
CAS-No.: 33864-99-2
HS-No.: 32041900
EC-No.: 278-333-8
Storage: RT
WGK: 2
LGK: 10 - 13

Specification:

λ_{max} (100 % DMSO) 674 - 682 nm
E 1 %/1 cm, λ_{max} (100 % DMSO) min. 700

Loss on drying max. 15 %

Order-No.	Quantity
A2124,0005	5 g
A2124,0010	10 g

Literature: (1) Wessler, E. (1968) *Anal. Biochem.* **26**, 439-444

- (2) Wardl, A.H. & Allen, W.S. (1972) *Anal. Biochem.* **48**, 621-623
(3) Wardl, A.H. & Michos, G.A. (1972) *Anal. Biochem.* **49**, 607-609
(4) Hata, R. & Naga, Y. (1973) *Anal. Biochem.* **52**, 652-656

(5) Newton, D.J. *et al.* (1974) *Anal. Biochem.* **62**, 268-273

- (6) Kanwar, Y.S. & Farquhar, M.G. (1979) *Proc. Natl. Acad. Sci. USA* **76**, 4493-4497
(7) Ilgaz, C. *et al.* (1999) *Biotechnic & Histochemistry* **74**, 57-63

Analytical and preparative separation of acidic glycosaminoglycans by electrophoresis in barium acetate.

Alcian blue staining of glycoproteins.

Alcian blue staining of glycoproteins in acrylamide disc electrophoresis.

A micro colorimetric determination of acidic glycosaminoglycans by two dimensional electrophoresis on a Cellulose acetate strip.

The estimation of acid glycosaminoglycan-Alcian blue complexes eluted from electrophoretic strips.

Isolation of glycosaminoglycans (heparan sulfate) from glomerular basement membranes. Double-staining of skeletons in a microwave.

Comment: The staining of glycoproteins and glycosaminoglycans (GAG) with alcian blue is a good alternative to the more commonly used method with the periodic acid-Schiff's reagent (PAS). The alcian blue reagent is stable in solution, as well as the stained protein bands. Even glycoproteins with a high proportion of carbohydrates can be stained (2, 3). Stock solutions of alcian blue are prepared in ethanol (1, 5, 7) or acetic acid (ref. 2-4, 6; 0.1 - 3 % acetic acid). The concentration differs from author to author: 0.05 % (1), 0.1 % (4, 6), 0.3 % (7) and 1 % (2). The visualization of glycoproteins after cellulose acetate electrophoresis (2, 6) requires a staining for 5 - 15 minutes and after acrylamide disc electrophoresis of 4 hours. For the quantification of the stained GAGs, the alcian blue-GAG complexes can be "eluted" from the cellulose acetate stripes with DMSO and the absorption is measured at 678 nm (5).

Alcian blue 8 GX see Alcian blue 8 GS (C.I. 74240) Page 78

Alcohol see Ethanol ≤ 70 % Page 335

Alcohol C₃ see 1-Propanol Page 665

Alcohol dehydrogenase, bacterial Technical grade

B

[EC 1.1.1.1]

supplied liquid in 50 % glycerol
of bacterial origin

M = ~160 kDa
HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

Specification:

Activity min. 30 U/ml

Order-No.	Quantity
A7892,0010	10 U
A7892,0050	50 U

Comment: The bacterial Alcohol dehydrogenase (ADH; Prod.-No. A7892) has a different substrate spectrum compared to ADH (Prod.-No. A7827). While ADH (A7827) almost exclusively metabolizes substrates with very large side chains (ketons with two large side chains, preferably ketoesters), ADH (A7892) is applied with aliphatic and aromatic ketons / ketoesters. Unit definition: One unit is the amount of enzyme required to metabolize 1 µmol substrate per minute in 100 mM potassium phosphate buffer, pH 6.0 at 30°C. This technical enzyme grade is intended for use in chemical synthesis.

Alcohol dehydrogenase, bacterial Technical grade

B

ADH, bacterial Technical grade

M = ~131 kDa
HS-No.: 35079090

Storage: 2-8°C
Shipment: wet ice

[EC 1.1.1.1]

supplied liquified
of bacterial origin

Specification:

Activity min. 10,000 U/ml

Order-No.	Quantity
A7827,0001	1 KU
A7827,0010	10 KU
A7827,1000	1 MU

Comment: This bacterial Alcohol dehydrogenase (ADH) has a different substrate spectrum compared to ADH (Prod.-No. A7892). While this ADH (A7827) almost exclusively metabolizes substrates with very large side chains (ketons with two large side chains, preferably ketoesters), ADH (A7892) is applied with aliphatic and aromatic ketons / ketoesters. Unit definition: One unit is the amount of enzyme required to metabolize 1 µmol substrate per minute in 100 mM triethanolamine buffer, pH 7.0 at 37°C. This technical enzyme grade is intended for use in chemical synthesis.

Alcylphenylpolyethylene glycol see Triton® X-114 BioChemica Page 841

Alginate acid BioChemica

B

Mixed polymer of mannuronic and guluronic acid

(C₆H₈O₆)_n
CAS-No.: 9005-32-7
HS-No.: 39131000
EC-No.: 232-680-1

Storage: RT

Solubility (H₂O) insoluble, but swells
Solubility (alkali) soluble

Specification:

Loss on drying max. 15 %

Order-No.	Quantity
A5581,0100	100 g
A5581,0250	250 g
A5581,0500	500 g

Alginate acid sodium salt BioChemica

B

Sodium alginate

CAS-No.: 9005-38-3
HS-No.: 39131000

Storage: RT

Specification:

Heavy metals (as Pb) max. 0.002 %
Loss on drying max. 15 %
Sulfated ash 18 - 27 %

Viscosity (1 %; 20°C) ... 350 - 550 mPas
pH (1 %; H₂O) 5.5 - 7.5
As max. 0.0003 %

Order-No.	Quantity
A3249,0250	250 g
A3249,1000	1 kg

Alizarin (C.I. 58000)

C

1,2-Dihydroxyanthraquinone

C₁₄H₈O₄
M = 240.21 g/mol
CAS-No.: 72-48-0
HS-No.: 29146990
EC-No.: 200-782-5

Storage: RT
LGK: 10 - 13
Disposal: 3

1. Transition interval .. pH 5.8 - 7.2
(yellow - red)
2. Transition interval .. pH 10.1 - 12.1
(red - purple)
Melting range 279 - 283°C

Specification:

Assay (photometr.) min. 97 %
λ_{max} 609 nm
Loss on drying max. 10 %

Order-No.	Quantity
A2125,0025	25 g
A2125,0050	50 g

Literature: (1) Brinkworth, R.I. & Fairlie, D.P. (1995) *Biochim. Biophys. Acta* **1253**, 5-8

Hydroxyquinones are competitive non-peptide inhibitors of HIV-1-Proteinase.

Comment: Alizarin is a substituted anthraquinone with three aromatic rings. Originally, this substance is a pH indicator, but may also be used as a competitive inhibitor of HIV-1-Proteinase. Studies on the enzyme kinetics lead to the conclusion, that alizarin binds to the active center of the enzyme. The inhibitory concentration (IC₅₀) is 12 μM. A stock solution (10 mM) can be prepared in DMSO. For enzyme assays, this stock solution was diluted with 0.1 M MES sodium (pH 6.5; ref. 1).

Alizarin complexone

C

Alizarin Fluorine blue, Alizarin-3-methylamine-N,N-diacetic acid

C₁₉H₁₅NO₈
M = 385.33 g/mol
CAS-No.: 3952-78-1
HS-No.: 29225000
EC-No.: 223-544-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3*

Specification:

Assay (titr.) min. 85 %
Melting point ca. 190°C (dec.)
Water (K.F.) max. 9.5 %

Order-No.	Quantity
A2866,0001	1 g
A2866,0005	5 g

Alizarin Fluorine blue see Alizarin complexone Page 79

Alizarin-3-methylamine-N,N-diacetic acid see Alizarin complexone Page 79

Alizarin red S (C.I. 58005)

C

Alizarin sulfonic acid disodium salt

C₁₄H₆Na₂O₇S
M = 364.24 g/mol
CAS-No.: 93982-72-0
HS-No.: 29147000
EC-No.: 301-261-6

Storage: RT
LGK: 10 - 13
Disposal: 3

1. Transition interval .. pH 4.3 - 6.3
(yellowish - rose)
2. Transition interval .. pH 9.4 - 12.0
(orange - violet)

Specification:

Assay (photometr.) min. 70 %
λ₁ (pH 4.3) 418 - 424 nm
λ₂ (pH 6.3) 514 - 520 nm
λ₃ (pH 9.4) 445 - 451 nm

λ₄ (pH 12.0) 554 - 558 nm
E 1 %/1 cm, λ₁ min. 115
E 1 %/1 cm, λ₂ min. 135
E 1 %/1 cm, λ₃ min. 140
E 1 %/1 cm, λ₄ min. 350
Loss on drying max. 5 %

Order-No.	Quantity
A2306,0010	10 g
A2306,0025	25 g
A2306,0100	100 g

Alizarin red S - Solution

C

Ready-to-use indicator solution in 50 %
Ethanol

HS-No.: 38220000

Storage: RT
LGK: 3 A

Class / PG: 3/II
UN1993
Danger
H225
P210



Composition:

Alizarin red S (A2306) 0.1 %

Order-No.	Quantity
A2290,0100	100 ml
A2290,0500	500 ml

Alizarin sulfonic acid disodium salt see Alizarin red S (C.I. 58005) Page 79

Alizarin yellow GG (C.I. 14025)

C

Salicine yellow, Mordant Yellow 1

$C_{13}H_8N_3NaO_5$
 $M = 309.21$ g/mol
CAS-No.: 584-42-9
HS-No.: 32041900
EC-No.: 209-536-1

Storage: RT
LGK: 10 - 13
Disposal: 3

Transition interval pH 10.2 - 12.1
(yellowish - ochre)

Specification:

ϵ_1 min. 11000
 ϵ_2 min. 8000
 λ_1 (MeOH) 359 - 365 nm

λ_2 (MeOH) 257 - 263 nm
Identity (IR) complies

Order-No.	Quantity
A2295,0005	5 g
A2295,0010	10 g

Alizarin yellow GG - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 32041900
EC-No.: 209-536-1

Storage: RT

Composition:

Alizarin yellow GG (A2295) . 0.1 %

Order-No.	Quantity
A2314,0100	100 ml
A2314,0500	500 ml

Alizarol cyanine R see Aurintricarboxylic acid triammonium salt (C.I. 43810) BioChemica Page 122
Alkali blue 4B see Alkali blue 6B Page 80

Alkali blue 6B

C

Alkali blue 4B

$C_{37}H_{30}N_3NaO_4S$
 $M = 635.72$ g/mol
CAS-No.: 1324-80-7
HS-No.: 32041200
EC-No.: 215-385-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3*

Transition interval pH 9.4 - 14.0
(blue - rose)

Specification:

λ_{max} (100 % EtOH) 595 - 605 nm
E 1 %/1 cm, λ_{max} min. 950
Loss on drying max. 5 %

Order-No.	Quantity
A2310,0010	10 g
A2310,0025	25 g
A2310,0100	100 g

Alkali blue 6B - Solution

C

Ready-to-use indicator solution in ethanol (96
%)

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 3

Class / PG: 3/II
UN1993
Danger
H225
P210



Composition:

Alkali blue 6B (A2310) 0.1 %

Order-No.	Quantity
A2293,0100	100 ml
A2293,0500	500 ml

Alkaline Lysis - Solution III

B

Solution III for the alkaline lysis of bacteria HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 4

Composition:

Acetic acid 115 ml/L
Potassium acetate (5 M) ... 600 ml/L
Water 285 ml/L

Order-No.	Quantity
A3479,0100	100 ml
A3479,0500	500 ml

Literature: (1) Birnboim, H. C. & Doly, J. (1979) *Nucleic Acids Res.* 7, 1513-1522. A rapid alkaline extraction procedure for screening recombinant plasmid DNA.
(2) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition Page 1.32. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*: Page 1.6.2; Suppl. 15. Greene Publishing & Wiley-Interscience, New York.

Comment: Several methods for the isolation of plasmid DNA from bacterial cultures have been described. The most popular one is the alkaline lysis in combination with the detergent SDS, developed by Birnboim and Doly (1). For the small-, medium-, and large-scale preparations of bacterial plasmid DNA, also known as MINI-, MIDI-, and MAXI-Preps, bacterial cultures are treated with three different lysis solutions. Bacterial cells, collected by centrifugation, are resuspended in Alkaline lysis solution I. Addition of lysozyme improves the efficiency of lysis. Alkaline lysis solution II consists of NaOH and SDS. While NaOH denatures chromosomal DNA and Plasmid DNA, SDS denatures bacterial proteins. By addition of alkaline lysis solution III (NaOAc, approx. pH 5), the suspension is neutralized and plasmid DNA rapidly reanneals. Potassium ions replace the sodium ions of SDS and cause the precipitation of the detergent. Bacterial chromosomal DNA and proteins are precipitated too. Detailed protocols are available in ref. 2 and 3.

Alkaline potassium sodium tartrate - Solution see Fehling's Reagents Page 346

Alkane C₅ see n-Pentane Page 602

Alkylbenzyltrimethylammonium chloride see Benzalkonium chloride Page 131

Alkyltrimethylammonium bromide see Dodecyltrimethylammonium bromide *BioChemica* Page 306

Allantoin *BioChemica*

B

5-Ureidohydantoin, Glyoxylic acid diureide

C₄H₆N₄O₃
M = 158.12 g/mol
CAS-No.: 97-59-6
HS-No.: 29332100
EC-No.: 202-592-8

Storage: RT

Specification:

Assay (N) min. 99 %
Residue on ignition max. 0.2 %
Solubility (5 %; H₂O) clear

Order-No.	Quantity
A7784,0100	100 g
A7784,0250	250 g
A7784,0500	500 g

Alloxan monohydrate

B

5,6-Dioxuracil, 2,4,5,6-Tetrahydropyrimidine

C₄H₂N₂O₄ · H₂O
M = 160.09 g/mol
CAS-No.: 2244-11-3
HS-No.: 29335995

Storage: 2-8°C

Warning
H312-H332-H302
P261-P305+P351+P338



Specification:

Assay (TLC) min. 98 %
Identity (IR) complies

Order-No.	Quantity
A4575,0010	10 g
A4575,0025	25 g

Literature: (1) Jöms, A. et al. (1997) *J. Endocrinol.* 155, 283-293

Comparative toxicity of alloxan, N-alkylalloxans and ninhydrin to isolated pancreatic islets *in vitro*.

Comment: Alloxan causes diabetes in animals by destroying the insulin-producing β-cells of the pancreas. It inhibits thiol-dependent enzymes (e.g. glucokinase, hexokinase) and generates active oxygen in the presence of reducing agents. The latter probably causes the death of the pancreatic β-cells (1).
Alloxan is water-soluble and reacts slightly acidic due to the fast conversion into the isomeric alloxanic acid. Under physiological conditions (pH 7.4 and 37°C) the half-life is approximately 1 minute only. A single injection of alloxan monohydrate (40 mg/kg, i.v.) can cause diabetes.

(all-trans)-Lycopin see Lycopin HPLC grade Page 498

17-(Allylamino)-17-demethoxy-geldanamycin *BioChemica*

B

17AAG
semisynthetic derivative of
Geldanamycin

C₃₁H₄₃N₃O₈
M = 585.69 g/mol
CAS-No.: 75747-14-7
HS-No.: 29419000

Storage: -20°C
protected from light
Shipment: wet ice

Melting point 200 - 205°C
Solubility (10 mg/ml MeOH)
..... clear, purple

Specification:

Assay (TLC) approx. 98 %

Order-No.	Quantity
A7877,0001	1 mg

Comment: 17-(Allylamino)-17-demethoxy-geldanamycin (17AAG) is a semisynthetic derivative of the ansamycin antibiotic **Geldanamycin** (GA; Product No. A7659). Like GA, 17AAG binds to the heat shock protein Hsp90 and alters its function. It is less hepatotoxic than GA. 17AAG is soluble in DMSO and methanol.

Allyl glucosinolate see Sinigrin monohydrate Page 719

Allylthiourea - Solution (1 g/L) for BOD determination

C

aqueous solution according to DEV H 51 5.11 HS-No.: 38220000

Storage: RT

Order-No.	Quantity
A0387,0250	250 ml
A0387,0500	500 ml
A0387,1000	1 L
A0387,10006	6 x 1 L

Aloe-Emodin synthetic HPLC grade

B

1,8-Dihydroxy-3-(hydroxymethyl)-
anthraquinone

C₁₅H₁₀O₅
M = 270.23 g/mol
CAS-No.: 481-72-1
HS-No.: 29146990

Storage: RT
LGK: 10 - 13

Warning
H319-H335-H315
P305+P351+P338-P261

**Specification:**

Assay min. 99 %

Order-No.	Quantity
A2052,0020	20 mg
A2052,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**Aloenin A HPLC grade**

B

from *Aloe arborescens*

C₁₉H₂₂O₁₀
M = 410.32 g/mol
CAS-No.: 38412-46-3
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A6743,0010	10 mg
A6743,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Alphazurine FG see Erioglaucine (C.I. 42090) Page 330

Alumen see Potassium aluminium sulfate dodecahydrate Page 636

Aluminium ammonium sulfate dodecahydrate pure USP

C

NH₄Al(SO₄)₂ · 12H₂O, Ammonium
aluminium sulfate

AlH₄NO₈S₂ · 12H₂O
M = 453.33 g/mol
CAS-No.: 7784-13-6
HS-No.: 28333000
EC-No.: 232-055-3

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Melting point 93°C
Solubility (20°C) 150 g/L (H₂O)

Specification:

Assay (titr.) 99.0 - 100.5 %
Alkali / alkaline earth max. 0.5 %
Heavy metals (as Pb) max. 0.002 %
Identity complies
Loss on drying 45 - 48 %

Fe complies

Order-No.	Quantity
A6561,0500	500 g
A6561,1000	1 kg
A6561,10006	6 x 1 kg
A6561,5000	5 kg

Aluminium chloride hexahydrate

Solubility (20°C) 1330 g/L (H₂O)
Thermal dec. 100°C

AlCl₃ · 6H₂O
M = 241.45 g/mol
CAS-No.: 7784-13-6
HS-No.: 28273200
EC-No.: 231-208-1

Storage: RT
LGK: 10 - 13

WGK: 1
Warning
H319-H315
P302+P352-P305+P351+P338

Aluminium chloride hexahydrate p. A.

C

Specification:

Assay (titr.) min. 98 %
pH (5 %; H₂O) 2.5 - 3.5 (20°C)
Sulfate max. 0.005 %
Ca max. 0.01 %
Cd max. 0.005 %

Cu max. 0.005 %
Fe max. 0.0005 %
K max. 0.01 %
Na max. 0.05 %
Ni max. 0.0005 %

Pb max. 0.005 %

Order-No.	Quantity
A3539,0250	250 g
A3539,0500	500 g
A3539,1000	1 kg
A3539,5000	5 kg

Aluminium chloride hexahydrate pure Ph. Eur., USP, BP

C

Specification:

Assay (titr.) 95.0 - 101.0 %
 Alkali / alkaline earth max. 0.5 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Water (K.F.) 42.0 - 48.0 %
 Sulfate max. 0.01 %

Fe max. 0.001 %

Order-No.

A1057,0500
 A1057,1000
 A1057,10006
 A1057,5000
 A1057,9010
 A1057,9025

Quantity

500 g
 1 kg
 6 x 1 kg
 5 kg
 10 kg
 25 kg

Aluminium chloride hexahydrate - Solution (104.61 g/L)

C

Aqueous solution

HS-No.: 28273200

Storage: RT

Warning
 H315-H319
 P280


Composition:

AlCl₃ · 6H₂O 104.61 g/L

Specification:

Heavy metals (as Pb) max. 0.001 %
 Sulfate max. 0.01 %
 pH 2.0 - 2.8
 As max. 0.0004 %

Fe max. 0.0005 %

Order-No.

A0420,1000
 A0420,10006
 A0420,5000

Quantity

1 L
 6 x 1 L
 5 L

Aluminium oxide 90 active neutral Chromatography grade

C

0.063 - 0.200 mm (70 - 230 mesh)

Al₂O₃

M = 101.94 g/mol

Storage: RT
 LGK: 10 - 13

P260

Density 3.94 g/cm (20°C)

CAS-No.: 1344-28-1

Melting point 2050°C

HS-No.: 28182000

pH (10 %; H₂O) approx. 7.3 (20°C)

EC-No.: 215-691-6

Order-No.

A4448,0500
 A4448,2000

Quantity

500 g
 2 kg

Aluminium potassium sulfate see Potassium aluminium sulfate dodecahydrate Page 636

Aluminium sulfate hydrate crystalline

Melting point 90°C (dec.)

Al₂(SO₄)₃ · xH₂O (x = 16 - 18)

Storage: RT
 LGK: 10 - 13

WGK: 1
 P262

Solubility (20°C) 600 g/L (H₂O)

M = 342.15 g/mol · xH₂O

CAS-No.: 17927-65-0

HS-No.: 28332200

EC-No.: 233-135-0

Aluminium sulfate hydrate crystalline, p. A.

C

Specification:

Assay (titr.) min. 98 %
 pH (5 %; H₂O) 2.5 - 4.0
 Chloride max. 0.005 %
 Ca max. 0.01 %
 Co max. 0.005 %

Cu max. 0.005 %
 Fe max. 0.01 %
 K max. 0.01 %
 Na max. 0.01 %
 Pb max. 0.005 %

Order-No.

A3578,0500
 A3578,1000
 A3578,10006
 A3578,5000

Quantity

500 g
 1 kg
 6 x 1 kg
 5 kg

Aluminium sulfate hydrate crystalline, pure Ph. Eur.

C

Specification:

Assay (as Al₂(SO₄)₃) 51.0 - 59.0 %
 Alkali / alkaline earth max. 0.4 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.005 %
 Identity complies
 pH (2 %; H₂O) 2.5 - 4.0
 Ammonium max. 0.05 %

Fe max. 0.01 %

Order-No.

A0747,0500
 A0747,1000
 A0747,10006
 A0747,5000
 A0747,9010
 A0747,9025

Quantity

500 g
 1 kg
 6 x 1 kg
 5 kg
 10 kg
 25 kg

Aluminium sulfate - Solution 30 % pure

C

HS-No.: 28332200

Storage: RT
 LGK: 10 - 13

Composition:

Aluminium sulfate (A0747) 300 g/L

Specification:

Ammonium max. 0.01 %
 Chloride max. 0.005 %
 As max. 0.0005 %
 Fe max. 0.005 %
 Pb max. 0.002 %

Order-No.

A2611,1000
 A2611,10006
 A2611,5000
 A2611,9010

Quantity

1 L
 6 x 1 L
 5 L
 10 L

Aluminon see Aurintricarboxylic acid triammonium salt (C.I. 43810) BioChemica Page 122

α-Amanitine

B

from *Amanita phalloides*

C₃₉H₅₄N₁₀O₁₄S
M = 918.98 g/mol
 CAS-No.: 23109-05-9
 HS-No.: 29339980
 EC-No.: 245-432-2

Storage: 2-8°C
 LGK: 6.1 B

Class / PG: 6.1/II
 UN3462
 WGK: 3
 Danger
 H300-H330-H310
 P302+P350-P280-P310-P264-
 P284

**Specification:**

Assay min. 95 %

Order-No.	Quantity
A1485,0001	1 mg
A1485,0005	5 mg
A1485,0025	25 mg

Literature: (1) Brodner, O.G. & Wieland, T. (1976) *Biochemistry* **15**, 3480-3484

Identification of the Amatoxin-binding subunit of RNA-Polymerase B by affinity labeling experiments. Subunit B 3 - the true Amatoxin receptor protein of multiple RNA Polymerase B.

(2) Wieland, T. (1983) *Int. J. Peptide Protein Res.* **22**, 257-276Review article: The toxic peptides from *Amanita* mushrooms.

Comment: The activity of RNA-Polymerase II is half-maximally inhibited by α-amanitine at 10⁻⁹ M, while RNA-Polymerase III requires much higher doses (10⁻⁵ - 10⁻⁴ M). RNA-Polymerase I is not sensitive at all. The LD₅₀ of the white mouse is 0.3 mg/kg.

α-Amanitin is soluble in water, neutral buffer solutions (pH 6 - 8), ethanol, methanol, DMSO or dimethyl formamide. Store solutions at +4°C. The stability of an aqueous solution is 6 - 12 months and up to 2 years for solutions in alcohol, respectively.

Amastatin hydrochloride

B

N-[(2*S*,3*R*)-3-Amino-2-hydroxy-5-methyl-hexanoyl]-L-valyl-L-aspartic acid hydrochloride
 lyophilized

C₂₁H₃₈N₄O₈ · HCl
M = 511.01 g/mol
 CAS-No.: 100938-10-1
 HS-No.: 29419000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 97 %
 Functional testing complies

Order-No.	Quantity
A3764,0001	1 mg
A3764,0005	5 mg

Literature: (1) Aoyagi, T et al. (1978) *J. Antibiotics* **31**, 636-638

Amastatin, an inhibitor of aminopeptidase A, produced by actinomycetes.

(2) Wilkes, S.H. & Prescott, J.M. (1985) *J. Biol. Chem.* **260**, 13154-13162

The Slow, Tight Binding of Bestatin and Amastatin to Aminopeptidases.

Comment: Amastatin was originally isolated from the culture filtrate of *Streptomyces* sp. It is a competitive inhibitor of the aminopeptidases A and M (but not B), the tyrosine aminopeptidase and of leucine aminopeptidase. Stock solutions of Amastatin (1 mM) can be prepared in polar solvents, such as water, methanol or ethanol and are stable at -20°C. The recommended working concentration is 1 - 10 μM.

Amebacillin see Fumagillin *BioChemica* Page 365(+)-Amethopterin see Methotrexate *BioChemica* Page 5364-Aminodiphenylmethanesulfonyl fluoride hydrochloride see APMSF hydrochloride *BioChemica* Page 114**Amido black 10 B (C.I. 20470)**

B

Naphthol blue black B

C₂₂H₁₄N₆Na₂O₉S₂
M = 616.50 g/mol
 CAS-No.: 1064-48-8
 HS-No.: 32041200
 EC-No.: 213-903-1

Storage: RT
 LGK: 10 - 13

Solubility (20°C) 30 g/L (H₂O)**Specification:**

Assay (photometr.) min. 70 %
 λ_{max} (pH 9.0) 615 - 620 nm
 Loss on drying max. 10 %

Order-No.	Quantity
A1399,0010	10 g
A1399,0025	25 g
A1399,0100	100 g

Literature: (1) Wilson, C.M. (1979) *Anal. Biochem.* **96**, 263-278

Studies and critique of Amido black 10 B, Coomassie Blue R, and Fast Green FCF as stains for proteins after polyacrylamide gel electrophoresis.

(2) Wilson, C.M. (1983) *Methods Enzymol.* **91**, 236-247

Staining of proteins on gels: Comparison of dyes and procedures.

Comment: For the staining with Amido black 10 B, a solution with a concentration of 0.1 % in 7 % acetic acid is used. The staining takes > 2 hours or over night. Destaining requires several changes of the washing solution (7 % acetic acid). The addition of 1 mg/L Amido black to 7 % acetic acid prevents a destaining during storage (several years at room temperature).

Amidosulfonic acid see Amidosulfuric acid Page 85

Amidosulfonic acid - Solution see Amidosulfuric acid - Solution 20 % technical grade Page 85

Amidosulfuric acid

Sulfaminic acid, Amidosulfonic acid

$\text{H}_3\text{NO}_3\text{S}$
 $M = 97.09 \text{ g/mol}$
 CAS-No.: 5329-14-6
 HS-No.: 28111980
 EC-No.: 226-218-8

Storage: RT
 LGK: 10 - 13
 Disposal: 14

Class / PG: 8/III
 UN2967
 WGK: 1
 Warning
 H315-H412-H319
 P273-P302+P352-P305+P351+P338



Melting point 205°C (dec.)
 Solubility (20°C) 213 g/L (H_2O)

Amidosulfuric acid p. A.

Specification:

Assay (titr.) min. 99.8 %
 Chloride max. 0.001 %
 Sulfate max. 0.01 %
 Fe max. 0.0005 %
 Pb max. 0.001 %

Order-No.	Quantity
A2302,0500	500 g
A2302,1000	1 kg
A2302,10006	6 x 1 kg
A2302,5000	5 kg

C

Amidosulfuric acid pure

Specification:

Assay (titr.) min. 99 %
 Chloride max. 0.005 %
 Sulfate max. 0.05 %
 Fe max. 0.001 %
 Pb max. 0.05 %

Order-No.	Quantity
A2287,1000	1 kg
A2287,10006	6 x 1 kg
A2287,5000	5 kg
A2287,9010	10 kg
A2287,9025	25 kg

C

Amidosulfuric acid - Solution 20 % Technical grade

Amidosulfonic acid - Solution

HS-No.: 28111980

Storage: RT
 LGK: 10 - 13
 Disposal: 14

Class / PG: 8/III
 UN1760
 WGK: 1
 Warning
 H319-H315-H412
 P305+P351+P338-P280-P302+P352-P337+P313



Specification:

Assay (titr.) min. 20 %

Order-No.	Quantity
A6591,1000	1 L
A6591,10006	6 x 1 L
A6591,5000	5 L

C

Aminoacetic acid see Glycine Page 386

7-Aminoactinomycin D BioChemica

7AAD
 semisynthetic derivate of Actinomycin D

$\text{C}_{62}\text{H}_{87}\text{N}_{13}\text{O}_{16}$
 $M = 1270.43 \text{ g/mol}$
 CAS-No.: 7240-37-1
 HS-No.: 29419000

Storage: 2-8°C
 protected from light

Class / PG: 6.1/I
 UN3462
 hygroscopic
 Danger
 H335-H330-H315-H319-H310-H300
 P302+P352-P305+P351+P338-P284-P280-P264-P260



Melting point 245 - 254°C
 Solubility (10 mg/ml MeOH)
 clear, red

Specification:

Assay approx. 96 %

Order-No.	Quantity
A7850,0001	1 mg
A7850,0005	5 mg

Comment: 7-Aminoactinomycin (7AAD) is a semisynthetic derivate of Actinomycin (Product No. A1489). 7AAD binds to single-stranded DNA and inhibits the DNA-primed RNA polymerase and DNA polymerase. It is used as a fluorescence dye for DNA and is a useful tool in determining apoptosis, which is induced by 7AAD. It is soluble in dichloromethane, DMSO and methanol.

L-α-Amino adipic acid see L-2-Amino adipic acid BioChemica Page 85

L-2-Amino adipic acid BioChemica

L-Homoglutaric acid, 4-Amino-1,5-dimethyl-2-phenyl-3H-pyrazolone, (S)-2-Aminohexanedioic acid, L-α-Amino adipic acid

$\text{C}_6\text{H}_{11}\text{NO}_4$
 $M = 161.16 \text{ g/mol}$
 CAS-No.: 1118-90-7
 HS-No.: 29224985

Storage: RT
 LGK: 10 - 13

Melting point 203 - 205°C (dec.)

Specification:

Assay (titr.) min 98 %
 $\alpha 24^\circ\text{C/D; } 2 \%, 5 \text{ M HCl } \dots +22.5^\circ - +24.5^\circ$

Order-No.	Quantity
A3765,0100	100 mg
A3765,0500	500 mg
A3765,0001	1 g

5-(3-Aminoallyl)-2'-deoxyuridin-5'-triphosphat trilithium salt see Deoxyribonucleotides with aminolinkers Page 267

4-Aminoantipyrine BioChemica

B

$C_{11}H_{13}N_3O$
 $M = 203.25$ g/mol
 CAS-No.: 83-07-8
 HS-No.: 29331190
 EC-No.: 201-452-3

Storage: RT
 10 - 13
 Disposal: 3

WGK: 3
 Warning
 H335-H315-H302-H319
 P261-P305+P351+P338

**Specification:**

Assay (titr.) min. 98 %
 Loss on drying max. 1.5 %
 Melting point 105.5° - 109°C

Order-No.	Quantity
A1523,0100	100 g
A1523,0250	250 g
A1523,0500	500 g

Literature: (1) Kabasakalian, P. *et al.* (1974) *Clin. Chem.* **20**, 606-607

(2) Yamaguchi, Y. & Hayashi, C. (1977) *Clin. Chem.* **23**, 2151-2154

Enzymatic Blood Glucose Determination by Colorimetry of N,N-Diethylaniline-4-Aminoantipyrine.
 Determination of Urinary Total Phenolic Compounds with Use of 4-Aminoantipyrine.

Comment: 4-Aminoantipyrine is a metabolite of Aminopyrine with analgesic and anti-inflammatory properties. It is used as a reagent for biochemical reactions producing peroxides or phenols. Ampyrone stimulates liver microsomes and is also used to measure extracellular water. In the enzymatic determination of glucose in biological fluids, the glucose oxidase reaction is combined with determination of the hydrogen peroxide produced. The alkaline oxidative coupling agent that is usually used, potassium ferricyanide, has been replaced with the hydrogen peroxide-peroxidase coupling of N,N-diethylaniline with 4-aminoantipyrine at pH 7 (1). Another application is the determination of phenolic compounds of urine. The reaction involved depends on the fact that some phenolic compounds condense with 4-aminoantipyrine, forming a quinoneimine dye, and then can be oxidized with alkaline ferricyanide to give a red complex, which is measured photometrically at 500 nm (2).

4-Aminobenzamidine dihydrochloride see *p*-Aminobenzamidine dihydrochloride BioChemica Page 86

p-Aminobenzamidine dihydrochloride BioChemica

B

4-Aminobenzamidine dihydrochloride

$C_7H_9N_3 \cdot 2HCl$
 $M = 208.09$ g/mol
 CAS-No.: 2498-50-2
 HS-No.: 29252900
 EC-No.: 219-692-2

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

WGK: 2
 hygroscopic
 Warning
 H335-H319-H315
 P261-P305+P351+P338

**Specification:**

Assay (titr.) 98.0 - 101.0 %
 Loss on drying (105°C) max. 1.0 %

Order-No.	Quantity
A2126,0001	1 g
A2126,0005	5 g
A2126,0010	10 g

Literature: (1) Mares-Guia, M. & Shaw, E. (1965) *J. Biol. Chem.* **240**, 1579-1585

(2) Markwardt, F. *et al.* (1968) *Eur. J. Biochem.* **6**, 502-506

(3) Hanatani, M. *et al.* (1984) *J. Biochem.* **95**, 1349-1353

(4) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

(5) Hager-Braun, C. *et al.* (1995) *Biochemistry* **34**, 9617-9624

Studies on the active center of Trypsin: The binding of Amidines and Guanidines as models of the substrate side chain.
 Comparative studies on the inhibition of Trypsin, Plasmin and Thrombin by derivatives of Benzylamine and Benzamidine.
 Solubilization and reconstitution of membrane proteins of *E. coli* using Alkanoyl-N-methylglucamides.
 Preparation of extracts from plants.
 Stable photobleaching of P480 in *Chlorobium* reaction center preparations: Presence of the 42-kDa Bacteriochlorophyll *a* protein and a 17-kDa polypeptide.

Comment: *p*-Aminobenzamidine is, like benzamidine, a competitive inhibitor of the serine proteases trypsin (1), plasmin and thrombin (2), but it is more active than benzamidine. The active concentration ranges from 1 mM (3, 4) to 2 mM (5). For the preparation of plant cell extracts, a working concentration of 1 mM is recommended (100X stock solution 0.1 M in water; ref. 4).

4-Aminobenzene sulfonamide see Sulfanilamide Page 777

4-Aminobenzenesulfonic acid see Sulfanilic acid for synthesis Page 778

4-Aminobenzoic acid

PABA, Vitamin H₁

$C_7H_7NO_2$
 $M = 137.14$ g/mol
 CAS-No.: 150-13-0
 HS-No.: 29224985
 EC-No.: 205-753-0

Storage: RT
 LGK: 10 - 13
 Disposal: 4

WGK: 1
 P260

Solubility (25°C) 8 g/L (H₂O)

4-Aminobenzoic acid BioChemica

B

Specification:

Assay (titr.) min. 98.5 %
 Heavy metals (as Pb) max. 0.002 %
 Loss on drying max. 1 %

Order-No.	Quantity
A0966,0050	50 g
A0966,0100	100 g

Literature: (1) Kodicek, E. & Reddi, K.K. (1951) *Nature* **168**, 475-477

Paper chromatography of Nicotinic acid derivatives.

Comment: According to reference 1, prepare a 2 % solution by dissolving 2 g of 4-aminobenzoic acid in 75 ml 0.75 M HCl and add 96 % ethanol to 100 ml. 4-Aminobenzoic acid is part of several cell culture media as vitamin H₁.

4-Aminobenzoic acid pure USP

C

Specification:

Assay (titr.) 98.5 - 101.5 %
 Heavy metals (as Pb) max. 0.002 %
 Identity (IR) complies
 Loss on drying (105°C) max. 0.2 %
 Melting point 186 - 189°C
 Ordinary impurities complies

Sulfated ash max. 0.1 %
 Volatile diazotizable subst. max. 0.002 %

Order-No.	Quantity
A4553,0250	250 g
A4553,1000	1 kg

3-Aminobenzoic acid ethyl ester methanesulfonate *BioChemica*

B

*Ethyl 3-aminobenzoate
methanesulfonate salt, Tricaine
methanesulfonate salt*

$C_9H_{11}NO_2 \cdot CH_4SO_3$
 $M = 261.30$ g/mol
CAS-No.: 886-86-2
HS-No.: 29224985
EC-No.: 212-956-8

Storage: RT

Warning
H319-H315-H335
P305+P351+P338-P261



Specification:

Assay (titr.) min. 98.0 %
Identity (IR) complies
Melting point approx. 148°C
Solubility (1 %; H₂O) clear, colorless

Water (K.F.) approx. 1.0 %

Order-No.	Quantity
A6415,0025	25 g
A6415,0100	100 g
A6415,0250	250 g

D(-)- α -Aminobenzylpenicillin see Ampicillin trihydrate Molecular biology grade Page 108
D(-)- α -Aminobenzylpenicillin sodium salt see Ampicillin sodium salt Page 108
2-Amino-8-bromo-6-hydroxypurine see 8-Bromoguanosine *BioChemica* Page 161
N-(4-Aminobutyl)-2'-deoxyadenosine-5'-triphosphate tetralithium salt see Deoxyribonucleotides with aminolinkers Page 267
6-Aminocaproic acid see ϵ -Aminocaproic acid Page 87

ϵ -Aminocaproic acid

*6-Aminocaproic acid, 6-Amino-n-
hexanoic acid*

$C_6H_{13}NO_2$
 $M = 131.18$ g/mol
CAS-No.: 60-32-2
HS-No.: 29224985
EC-No.: 200-469-3

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1

Melting point 207 - 209°C (dec.)

ϵ -Aminocaproic acid *BioChemica*

B

Protease inhibitor

Specification:

Assay (titr.) min. 99.5 %
Loss on drying max. 0.2 %

Order-No.	Quantity
A2266,0100	100 g
A2266,0250	250 g
A2266,0500	500 g

Literature: (1) Broglie, R.M. *et al.* (1980) *Proc. Natl. Acad. Sci. USA* **77**, 87-91

- (2) Wong, J.H. *et al.* (1987) *J. Biol. Chem.* **262**, 3185-3191
(3) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

Isolation and characterization of the pigment-protein complexes of *Rhodospseudomonas sphaeroides* by Lithium dodecyl sulfate/polyacrylamide gel electrophoresis.
A novel type of Phosphofructokinase from plants.
Preparation of extracts from plants.

Comment: ϵ -Aminocaproic acid is a serine protease inhibitor. For the isolation of the bacterial pigment-protein complex from *Rhodospseudomonas sphaeroides*, ϵ -aminocaproic acid was employed in a concentration of 5 mM in combination with PMSF and benzamide (1 mM each; ref. 1). The preparation of plant cell extracts requires working concentrations of 2 - 5 mM (2, 3). ϵ -Aminocaproic acid (0.5 M) is readily water-soluble and can be dissolved together with benzamide (0.1 M; working concentration 1 mM) as a 100X stock solution (3).

ϵ -Aminocaproic acid for synthesis

C

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 1 %

Order-No.	Quantity
A7011,0100	100 g
A7011,0500	500 g
A7011,1000	1 kg

(3S)-7-Amino-1-chloro-3-tosylamino-2-heptanone hydrochloride see N_ε-Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) *BioChemica* Page 823
2-Amino-2-deoxy-D-galactopyranose hydrochloride see D(+)-Galactosamine hydrochloride *BioChemica* Page 367
2-Amino-2-deoxy-D-glucose hydrochloride see D(+)-Glucosamine hydrochloride *BioChemica* Page 377
4-Amino-9,10-dihydro-1,3-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid sodium salt see Nuclear fast red (C.I. 60760) Microscopy grade Page 579
4-Amino-N,N-dimethylaniline dihydrochloride see N,N-Dimethyl-p-phenylenediamine dihydrochloride *BioChemica* Page 286
4-Amino-1,5-dimethyl-2-phenyl-3H-pyrazolone see L-2-Aminoaldipic acid *BioChemica* Page 85
2-Aminoethanesulfonic acid see Taurine Page 796
2-Aminoethanol see Ethanolamine *BioChemica* Page 337

N-{2-[2-(2-Aminoethoxy)ethoxy]ethyl} biotinamide

B

PEO3-Amine-Biotin

$C_{16}H_{30}N_4O_4S$
 $M = 374.50$ g/mol
HS-No.: 29349990

Storage: -20°C

very hygroscopic

Melting point 55 - 60°C
Solubility Water, DMSO,
DMF

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.	Quantity
A7895,0010	10 mg
A7895,0025	25 mg
A7895,0050	50 mg

Comment: The water-soluble biotinylating reagent PEO3-Amine-Biotin, containing a polyethylene oxide spacer arm, requires the use of a carbodiimide cross-linking agent (e.g. DCC, EDC) to couple to carboxylic acid groups.

2-Aminoethyl alcohol see Ethanolamine *BioChemica* Page 337
4-(2-Aminoethyl)-benzenesulfonyl fluoride hydrochloride see AEBSF hydrochloride *BioChemica* Page 69
3-[(2-Aminoethyl)dithio]propionic acid see AEDP Page 69
3-(2-Aminoethyl)-indol see Tryptamine Page 843
N-(2-Aminoethyl)-isoquinoline-5-sulfonamide hydrochloride see H-9 *BioChemica* Page 395
4-Aminofolic acid see Aminopterlin *BioChemica* Page 90
L-2-Aminoglutaric acid see L-Glutamic acid Page 380

L-2-Aminoglutaric acid-5-amide see L-Glutamine Page 381
 L-2-Amino-5-guanidino-n-valerianic acid see L-Arginine base Page 117
 L-2-Amino-5-guanidino-n-valerianic acid hydrochloride see L-Arginine hydrochloride Page 118
 (S)-2-Aminohexanedioic acid see L-2-Aminoadipic acid *BioChemica* Page 85
 6-Amino-n-hexanoic acid see ε-Aminocaproic acid Page 87
 N-(6-Aminohexyl)-2'-deoxycytidine-5'-triphosphate tetralithium salt see Deoxyribonucleotides with aminolinkers Page 267
 α-Amino-p-hydroxybenzylpenicillin see Amoxicillin trihydrate *BioChemica* Page 105
 L-2-Amino-3-hydroxybutyric acid see L-Threonine Page 814
 N-[(2S,3R)-3-Amino-2-hydroxy-5-methyl-hexanoyl]-L-valyl-L-L-aspartic acid hydrochloride see Amastatin hydrochloride Page 84
 2-Amino-2-(hydroxymethyl)-propane-1,3-diol see Tris Page 835
 N-[(2S,3R)-3-Amino-2-hydroxy-4-phenylbutyl]-L-leucine hydrochloride see Bestatin hydrochloride *BioChemica* Page 137
 L-2-Amino-3-(4-hydroxyphenyl)-propionic acid see L-Tyrosine Page 848
 L-2-Amino-3-hydroxypropionic acid see L-Serine Page 710
 2-Amino-6-hydroxypurine see Guanine *BioChemica* Page 394
 2-Amino-6-hydroxypurine hydrochloride see Guanine hydrochloride *BioChemica* Page 394
 4-Amino-2-hydroxypyrimidine see Cytosine *BioChemica* Page 258
 2-Aminohypoxanthine see Guanine *BioChemica* Page 394
 L-2-Amino-3-(imidazolyl-4)-propionic acid see L-Histidine base Page 409
 L-2-Amino-3-(imidazolyl-4)-propionic acid hydrochloride monohydrate see L-Histidine hydrochloride monohydrate Page 409
 L-2-Amino-3-(indol-3)-propionic acid see L-Tryptophan Page 844
 2-Aminoisobutanol see 2-Amino-2-methyl-1-propanol Buffer grade Page 89
 L-2-Amino-iso-hexanoic acid see L-Leucine Page 486
 2-Aminoisopropanol see 1-Amino-2-propanol pure Page 89
 Aminoisopropyl alcohol see 1-Amino-2-propanol pure Page 89
 L-2-Amino-iso-valeric acid see L-Valine Page 852
 D-4-Amino-3-isoxazolidinone see D-Cycloserine Page 253

5-Aminolevulinic acid hydrochloride *BioChemica*

B

ALA, 5-Amino-4-oxopentanoic acid hydrochloride $C_5H_7ClNO_3$ Storage: 2-8°C WGK: 2
 $M = 167.61$ g/mol LGK: 10 - 13
 CAS-No.: 5451-09-2
 Melting point 150 - 156°C HS-No.: 29224985
 Solubility (20°C) 100 g/L (H₂O) EC-No.: 226-679-5

Specification:

Assay (titr.) min. 99 %	Sulfate max. 0.005 %
Heavy metals (as Pb) max. 0.001 %	
Identity (IR) complies	
Loss on drying max. 1 %	

Order-No.	Quantity
A1731,0500	500 mg
A1731,0001	1 g
A1731,0005	5 g

L-2-Amino-3-mercaptopropionic acid see L-Cysteine Page 254
 L-2-Amino-3-mercaptopropionic acid hydrochloride monohydrate see L-Cysteine hydrochloride monohydrate Page 255
 L-2-Amino-3-methylbutanoic acid see L-Valine Page 852
 4-Amino-10-methyl folic acid see Methotrexate *BioChemica* Page 536
 L-2-Amino-4-methylmercaptobutyric acid see L-Methionine Page 535
 L-2-Amino-3-methylpentanoic acid see L-Isoleucine Page 464

2-Amino-2-methyl-1,3-propanediol Buffer grade

B

AMPD buffer, Ammediol $C_4H_{11}NO_2$ Storage: RT Class / PG: 8/III
 $M = 105.14$ g/mol LGK: 10 - 13 UN3259
 CAS-No.: 115-69-5 Disposal: 3 WGK: 1
 Melting point 107 - 110°C Warning
 Useful pH range pH 7.8 - 9.7 H315-H319
 pK_a (25°C) 8.8 P302+P352-P305+P351+P338



Specification:

Assay (titr.) min. 99 %
 Solubility (1 M; H₂O; 20°C) .. clear, colorless
 pH (1 M; H₂O; 20°C) 10.5 - 11.5

Order-No.	Quantity
A1158,0050	50 g
A1158,0100	100 g
A1158,0250	250 g

- Literature:** (1) Lowry, O.H. (1957) *Methods Enzymol.* **4**, 366-381
 (2) Fernley, H.N. & Walker, P.G. (1965) *Biochem. J.* **97**, 95-103
 (3) Bothe, D. *et al.* (1985) *Anal. Biochem.* **151**, 49-54
 (4) Jefferson, R.A. *et al.* (1986) *Proc. Natl. Acad. Sci. USA* **83**, 8447-8451
 (5) Wyckoff, M. *et al.* (1977) *Anal. Biochem.* **78**, 459-482
 (6) Bury, A.F. (1981) *J. Chromatogr.* **213**, 491-500
 (7) Thormann, W. & Mosher, R.A. (1990) *Electrophoresis* **11**, 292-298

Micromethods for the assay of enzymes.
 Kinetic behaviour of calf intestinal alkaline phosphatase with 4-Methylumbelliferyl phosphate.
 A SDS-gradient gel electrophoresis system that separates polypeptides in the molecular weight range of 1500 to 100000.
 β-Glucuronidase from *E. coli* as Gen-Fusionsmarker.
 PAGE in SDS-containing buffers using multiphasic buffer systems: Properties of the stack, valid R_f -measurement, and optimized procedure.
 Analysis of protein and peptide mixtures. Evaluation of three SDS-PAGE buffer systems.
 Experimental and theoretical description of the isotachopheric behavior of serum albumin.

Comment: 2-Amino-2-methyl-1,3-propanediol (Ammediol) is applied in several techniques and assay systems. On the one hand, it is used as a reaction buffer for enzymes with an activity in the basic pH range (1, 2): alkaline phosphatase from calf (50 mM Ammediol; pH 8 - 10; ref. 1, 2); adenosine triphosphatase (15 mM Ammediol, 15 mM Tris pH 8.4; ref. 1); phosphoglucuronate dehydrogenase (80 mM Ammediol; pH 9.0; ref. 1). On the other hand, ammediol is used to stop the enzymatic turnover of p-nitrophenyl β-D-glucuronide by β-glucuronidase by the addition of 2.5 M Ammediol (4). Comparably, the enzyme reaction of β-galactosidase is stopped by the addition of 1 M sodium carbonate (see A3900). In an other application, ammediol is used as an electrophoresis buffer (5-7) in a SDS gradient gel system (10 % - 30 % linear acrylamide gradient) with a discontinuous buffer system without urea, but a resolution for proteins of a molecular weight ranging from 1,500 and 100,000. Usually, urea is added to increase the resolving capacity, but requires longer gel runs. The buffer of the resolving gel contains 110 mM ammediol (pH approx. 8.9) and the stacking gel 84 mM ammediol (pH 8.37; ref. 7).

2-Amino-2-methyl-1-propanol Buffer grade

B

AMP buffer, 2-Aminoisobutanol

$C_4H_{11}NO$
 $M = 89.14$ g/mol
 CAS-No.: 124-68-5
 HS-No.: 29221985
 EC-No.: 204-709-8

Storage: RT
 LGK: 10 - 13

WGK: 1
 Warning
 H319-H412-H315
 P305+P351+P338-P273



Boiling point 165°C
 Density (d 20°C/4°C) ... 0.935
 Melting range 18 - 26°C
 Useful pH range pH 8.7 - 10.4
 n_{D20} 1.4480
 pK_a (25°C) 9.7

Specification:

Assay (titr.) min. 96 %
 pH (0.1 M; H_2O ; 25°C) 11.0 - 12.0
 Water (K.F.) max. 0.8 %

Order-No.	Quantity
A0838,0100	100 g
A0838,0250	250 g
A0838,0500	500 g

Literature: (1) Lowry, OH. (1957) *Methods Enzymol.* **4**, 366-381
 (2) Bretaudiere, J.-P. & Spillman, T. (1984) *Methods Enzym. Anal.* **4**, 75-82
 (3) McEuen, A.R. *et al.* (1995) *Biochim. Biophys. Acta* **1267**, 115-121

Micromethods for the assay of enzymes.
 Alkaline phosphatase: IFCC reference method.
 Regulation of the activity of human chymase.

Comment: The buffer 2-Amino-2-methyl-1-propanol (AMP) has been shown to be very well suited for the determination of the activity of enzymes like alkaline phosphatase (1, 2), lactate and malate dehydrogenase (1). Its useful pH range (pK_a 9.69 [25°C]) meets the requirements for the enzyme reactions (alkaline phosphatase pH 10.4; lactate dehydrogenase pH 9.9; malate dehydrogenase pH 10.4; according to ref. 1). Besides, it serves as a phosphate acceptor for alkaline phosphatase. This enzyme requires higher buffer concentrations - concentrations of 1 M will not inhibit the enzyme - to prevent changes in pH by CO_2 from the air. Especially small reaction volumes are sensitive for such influences. AMP can also be used for the determination of the activity of human chymase in a composite buffer system (3).

AMP has a low melting point (18 - 26°C) and has to be liquified at approx. 35°C to prepare a buffer solution. The liquified AMP has a high viscosity, which makes its handling more difficult. If this buffer solution is stored at room temperature and protected from the CO_2 from the air, it is stable for approx. one month (2). The working concentration for use with alkaline phosphatase ranges from 350 - 900 mM (1, 2), for lactate dehydrogenase and malate dehydrogenase at 100 mM (1) and chymase in the composite buffer at 52 mM (3).

4-Amino-10-methylpteroyl-L-glutamic acid see Methotrexate *BioChemica* Page 536
 5-Amino-4-oxopentanoic acid hydrochloride see 5-Aminolevulinic acid hydrochloride *BioChemica* Page 88
 (S)-2-Aminopentanedioic acid sodium salt see L-Glutamic acid sodium salt monohydrate pure Page 381

N-(5-Aminopentyl)biotinamide trifluoroacetate salt

B

Biotin-cadaverine

$C_{17}H_{29}F_3N_4O_4S$
 $M = 442.50$ g/mol
 HS-No.: 29349990

Storage: -20°C

very hygroscopic

Solubility Water, DMSO,
 DMF

Specification:

Assay min. 98 %
 Identity (NMR) complies

Order-No.	Quantity
A7788,0010	10 mg
A7788,0025	25 mg
A7788,0050	50 mg

Comment: Biotin cadaverine is slightly water soluble. It must be dissolved in basic buffer before use in coupling to carboxylic acid groups. Alternatively, it can first be dissolved in water and subsequently the solvent is removed to obtain the free amine.

2-(p-Aminophenyl)-6-methylbenzothiazole see APMBT ultrapure Page 113
 L-2-Amino-3-phenylpropionic acid see L-Phenylalanine Page 620
 3-Aminophthalhydrazide see Luminol Page 497

1-Amino-2-propanol pure

C

Aminoisopropyl alcohol, 2-
 Aminoisopropanol, Isopropanolamine

C_3H_9NO
 $M = 75.11$ g/mol
 CAS-No.: 78-96-6
 HS-No.: 29221985
 EC-No.: 201-162-7

Storage: RT
 LGK: 8 A
 Disposal: 1

Class / PG: 8/III
 UN2735
 WGK: 1
 Danger
 H314
 P260-P280-P301+P330+P331-
 P305+P351+P338



Boiling point 160°C
 Density (d 20°C/4°C) ... 0.959 - 0.961
 Melting point -4°C

Specification:

Assay (HPLC) approx. 95 %

Order-No.	Quantity
A4285,0500	500 ml
A4285,1000	1 L
A4285,10006	6 x 1 L
A4285,5000	5 L

2-Aminopropionic acid see L-Alanine Page 74
 3-Aminopropionic acid see β -Alanine Page 74

N-(3-{2-[2-(3-Aminopropoxy)ethoxy]ethoxy}propyl)biotinamide hydrochloride

B

PEO4-Amine-Biotin

 $C_{20}H_{38}ClN_4O_5S$
 $M = 483.07 \text{ g/mol}$
HS-No.: 29349990

Storage: -20°C

very hygroscopic

Melting point 75 - 80°C (dec.)

Solubility Water, DMSO,
DMF

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.	Quantity
A7901,0010	10 mg
A7901,0025	25 mg
A7901,0050	50 mg

Comment: The water-soluble biotinylating reagent PEO4-Amine-Biotin contains a longer polyethylene oxide spacer arm for reduction of steric hindrance. Dissolve in basic buffer before use in coupling to carboxylic acid groups.

N-(3-Aminopropyl)-1,4-diaminobutane see Spermidine *BioChemica* Page 759

N-(3-Aminopropyl)-1,4-diaminobutane trihydrochloride see Spermidine trihydrochloride *BioChemica* Page 759

Aminopterin *BioChemica*

B

4-Aminopteroyl-L-glutamic acid, 4-Aminofolic acid

 $C_{19}H_{20}N_8O_5$
 $M = 440.41 \text{ g/mol}$
CAS-No.: 54-62-6
HS-No.: 29369000
EC-No.: 200-209-9

Storage: 2-8°C
LGK: 6.1B

Class / PG: 6.1/I
UN2811
WGK: 3
Danger
H300-H360D
P308+P313-P264-P301+P310-P201


Melting point 230 - 235°C (dec.)

Specification:

Assay (TLC) approx. 98 %
Water (K.F.) max. 10 %

Order-No.	Quantity
A3766,0010	10 mg
A3766,0025	25 mg

Comment: Aminopterin inhibits all reactions catalyzed by the enzyme dihydrofolate reductase. This enzyme plays a major role in the *de-novo* synthesis of inositol monophosphate (component of all purines) and the methylation of dUMP to form dTMP. The addition of aminopterin to cell culture media makes the cells dependent on external purine and thymidine sources. This knowledge led to the development of the first selection medium for eukaryotic cells. The Hypoxanthine-Aminopterin-Thymidine - Medium (HAT-Medium; 1 mM hypoxanthine, 0.1 mM aminopterin, 0.4 mM thymidine) is used primarily for the selection of antibody-producing hybridoma.

4-Aminopteroyl-L-glutamic acid see Aminopterin *BioChemica* Page 90

6-Aminopurine see Adenine *BioChemica* Page 67

Aminosidin see Paromomycin sulfate *BioChemica* Page 592

L-2-Aminosuccinic acid see L-Aspartic acid Page 121

L-2-Aminosuccinic acid-4-amide see L-Asparagine monohydrate Page 121

5-Amino-1,2,3,4-tetrahydrophthalazine-1,4-dione see Luminal Page 497

(S)-2-Amino-5-ureidopentanoic acid see L-Citrulline Page 215

L-2-Amino-5-ureidovaleric acid see L-Citrulline Page 215

Ammediol see 2-Amino-2-methyl-1,3-propanediol Buffer grade Page 88

Ammonia - Solutions ≥ 25 %

Ammonium hydroxide - Solution, NH_3
 H_3N
 $M = 17.03 \text{ g/mol}$
CAS-No.: 1336-21-6
HS-No.: 28142000
EC-No.: 215-647-6

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN2672
WGK: 2
Danger
H314-H400-H335
P309+P311-P273-P305+P351+P338-
P280-P301+P330+P331


Ammonia - Solution 32 % p. A.

C

Specification:

Assay (titr.) approx. 32 %
Chloride max. 0.00005 %
Phosphate max. 0.0001 %
Sulfate max. 0.0002 %
Sulfide max. 0.00002 %
Fe max. 0.00001 %

K	 max. 0.0001 %	Zn	 max. 0.00002 %
Mg	 max. 0.00005 %		
Mn	 max. 0.00001 %		
Na	 max. 0.0005 %		
Ni	 max. 0.000005 %		
Pb	 max. 0.000005 %		

Order-No.	Quantity
A6805,1000	1 L
A6805,10006	6 x 1 L
A6805,2500	2.5 L
A6805,25004	4 x 2.5 L
A6805,5000	5 L

Ammonia - Solution 32 % pure

C

Specification:

Assay (titr.) approx. 32 %
Chloride max. 0.005 %
Sulfate max. 0.005 %
Cu max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A5169,1000	1 L
A5169,10006	6 x 1 L
A5169,2500	2.5 L
A5169,25004	4 x 2.5 L
A5169,5000	5 L
A5169,9010	10 L
A5169,9025	25 L

Ammonia - Solution 32 % Technical grade

C

Specification:

Assay (titr.) approx. 32 %

Order-No.	Quantity
A6806,5000	5 L
A6806,9010	10 L
A6806,9025	25 L

Ammonia - Solution 25 % DNA synthesis grade

B

Specification:

Assay (titr.) 24.0 - 26.0 %
Non-volatile matter max. 0.002 %
Carbonate max. 0.001 %
Chloride max. 0.00001 %

Phosphate max. 0.00001 %
Cu max. 0.00001 %
Fe max. 0.00001 %
Pb max. 0.000005 %

Order-No.	Quantity
A2128,0250	250 ml
A2128,0500	500 ml
A2128,1000	1 L

Ammonia - Solution 25 % BioChemica

B

Specification:

Assay (titr.) 24.0 - 26.0 %
Heavy metals (as Pb) max. 0.0002 %
Non-volatile matter max. 0.002 %

Carbonate max. 0.006 %
Chloride max. 0.0001 %
Sulfate max. 0.0005 %
Fe max. 0.00005 %

Order-No.	Quantity
A3654,1000	1 L
A3654,2500	2.5 L

Ammonia - Solution 25 % p. A.

C

Specification:

Assay (titr.) 24.0 - 26.0 %
Chloride max. 0.00005 %
Phosphate max. 0.0001 %
Sulfate max. 0.0002 %
Sulfide max. 0.00002 %
Fe max. 0.00001 %
K max. 0.0001 %
Mg max. 0.00005 %
Mn max. 0.00001 %

Na max. 0.0005 %
Ni max. 0.000005 %
Pb max. 0.000005 %
Zn max. 0.00002 %

Order-No.	Quantity
A2099,1000	1 L
A2099,10006	6 x 1 L
A2099,2500	2.5 L
A2099,25004	4 x 2.5 L
A2099,5000	5 L
A2099,9010	10 L
A2099,9025	25 L

Ammonia - Solution 25 % pure Ph. Eur.

C

Specification:

Assay (titr.) 25.0 - 30.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.0001 %
Identity complies
Non-volatile matter max. 0.0018 %
Oxidizable subst. complies
Pyridine, related subst. complies
Carbonate max. 0.006 %
Chloride max. 0.0001 %

Sulfate max. 0.0005 %
Fe max. 0.000025 %

Order-No.	Quantity
A3128,1000	1 L
A3128,10006	6 x 1 L
A3128,2500	2.5 L
A3128,25004	4 x 2.5 L
A3128,5000	5 L
A3128,9010	10 L
A3128,9025	25 L

Ammonia - Solution 25 % pure

C

Specification:

Assay (titr.) 24.0 - 26.0 %
Chloride max. 0.005 %
Sulfate max. 0.005 %
Cu max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A2307,1000	1 L
A2307,10006	6 x 1 L
A2307,2500	2.5 L
A2307,25004	4 x 2.5 L
A2307,5000	5 L
A2307,9010	10 L
A2307,9025	25 L

Ammonia - Solution 25 % Technical grade

C

Specification:

Assay (titr.) approx. 25 %

Order-No.	Quantity
A2288,5000	5 L
A2288,9010	10 L
A2288,9025	25 L

Ammonia - Solutions (Concentrations: ≥ 10 % - < 25 %)

Ammonium hydroxide solutions, NH_3

H_3N
 $M = 17.03$ g/mol
CAS-No.: 1336-21-6
HS-No.: 28142000
EC-No.: 215-647-6

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN2672
WGK: 2
Danger
H314
P273-P280-P301+P330+P331-
P305+P351+P338-P309+P311



Ammonia - Solution 20 % p. A.

C

Specification:

Assay (titr.) min. 20 %
Chloride max. 0.00005 %
Phosphate max. 0.0001 %
Sulfate max. 0.00002 %
Sulfide max. 0.00002 %
Fe max. 0.00001 %

K max. 0.0001 %
Mg max. 0.00005 %
Mn max. 0.00001 %
Na max. 0.0005 %
Ni max. 0.000005 %
Pb max. 0.000005 %
Zn max. 0.00002 %

Order-No.	Quantity
A2600,1000	1 L
A2600,10006	6 x 1 L
A2600,2500	2.5 L
A2600,5000	5 L
A2600,9010	10 L

Ammonia - Solution 20 % pure

C

Specification:

Assay (titr.)	min. 20 %	Fe	max. 0.0005 %
Chloride	max. 0.005 %	Pb	max. 0.0005 %
Sulfate	max. 0.005 %		
Cu	max. 0.0005 %		

Order-No.	Quantity
A2630,2500	2.5 L
A2630,25004	4 x 2,5 L
A2630,5000	5 L

Ammonia - Solution 10 % p. A.

C

Specification:

Assay (titr.)	min. 10 %	K	max. 0.0001 %	Zn	max. 0.00002 %
Chloride	max. 0.00005 %	Mg	max. 0.00005 %		
Phosphate	max. 0.00001 %	Mn	max. 0.00001 %		
Sulfate	max. 0.00001 %	Na	max. 0.0001 %		
Sulfide	max. 0.00001 %	Ni	max. 0.000005 %		
Fe	max. 0.00001 %	Pb	max. 0.000005 %		

Order-No.	Quantity
A2616,1000	1 L
A2616,10006	6 x 1 L
A2616,2500	2.5 L
A2616,25004	4 x 2,5 L
A2616,5000	5 L

Ammonia - Solution 10 % pure DAB

C

Specification:

Assay (titr.)	9.7 - 10.3 %	Carbonate	max. 0.01 %
Heavy metals (as Pb)	max. 0.0004 %	Chloride	max. 0.004 %
Identity	complies	Sulfate	max. 0.006 %
Red. substances	complies	Ca	max. 0.0004 %
Relative density	0.957 - 0.961	Fe	max. 0.0004 %
Residue after evaporation	max. 0.01 %		

Order-No.	Quantity
A2949,2500	2.5 L
A2949,25004	4 x 2,5 L
A2949,5000	5 L
A2949,9010	10 L
A2949,9025	25 L

Ammonia - Solution 10 % pure

C

Specification:

Assay (titr.)	min. 10 %
Chloride	max. 0.005 %
Sulfate	max. 0.005 %
Cu	max. 0.0005 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A2625,2500	2.5 L
A2625,25004	4 x 2,5 L
A2625,5000	5 L
A2625,9010	10 L
A2625,9025	25 L

Ammonia - Solution 3.5 % p. A.

C

Ammonium hydroxide solution, NH_3

H_3N
 $M = 17.03 \text{ g/mol}$
CAS-No.: 1336-21-6
HS-No.: 28142000
EC-No.: 215-647-6

Storage: RT

Specification:

Assay (titr.)	min. 3.5 %	Fe	max. 0.00001 %	Ni	max. 0.000005 %
Chloride	max. 0.00005 %	K	max. 0.0001 %	Pb	max. 0.000005 %
Phosphate	max. 0.00001 %	Mg	max. 0.00005 %	Zn	max. 0.00002 %
Sulfate	max. 0.00001 %	Mn	max. 0.00001 %		
Sulfide	max. 0.00001 %	Na	max. 0.0001 %		

Order-No.	Quantity
A4560,1000	1 L
A4560,10006	6 x 1 L
A4560,2500	2.5 L
A4560,5000	5 L

Ammonia - Standard volumetric Solution (1 M)

C

Ammonium hydroxide - Standard
volumetric solution
1 mol/L (1 N Solution)

HS-No.: 38220000
EC-No.: 215-647-6

Storage: RT
Disposal: 13

Specification:

Factor limits	0.995 - 1.005

Order-No.	Quantity
A2622,1000	1 L
A2622,10006	6 x 1 L
A2622,5000PE	5 L

Ammonium - Stock Solution

C

1 ml corresponds to 1 mg N from Ammonium
chloride

HS-No.: 38220000

Storage: RT

Composition:

NH_4Cl (A0988)	3.819 g/L

Order-No.	Quantity
A3007,0500	500 ml

Ammonium acetate

Melting point	114°C	C ₂ H ₇ NO ₂	Storage: RT	WGK: 1
Solubility (20°C)	1480 g/L (H ₂ O)	M = 77.08 g/mol	LGK: 10 - 13	
		CAS-No.: 631-61-8	Disposal: 14	
		HS-No.: 29152900		
		EC-No.: 211-162-9		

Ammonium acetate Molecular biology grade

B

Specification:	Order-No.	Quantity
DNases/RNases/Proteases not detectable	A2936,0250	250 g
Assay (titr.) min. 98 %	A2936,0500	500 g
Heavy metals (as Pb) max. 0.0002 %	A2936,1000	1 kg
pH (5 %; H ₂ O) 6.5 - 7.3 (25°C)		

Ammonium acetate BioChemica

B

Specification:	Chloride	 max. 0.002 %	A (1 cm/1 M in H ₂ O)	Order-No.	Quantity
Assay (titr.) min. 98 %	Sulfate	 max. 0.005 %	260 nm max. 0.03	A3674,0500	500 g
Heavy metals (as Pb) max. 0.001 %			280 nm max. 0.02	A3674,1000	1 kg
Insoluble matter complies				A3674,5000	5 kg
pH (5 %; H ₂ O) 6.5 - 7.3 (25°C)					
Loss on drying max. 2.5 %					

Literature: (1) Okayama, H. & Berg, P. (1982) *Mol. Cell. Biol.* **2**, 161-170
 (2) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48
 (3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Pages 15.3.1-4 (Suppl. 17) Greene Publishing & Wiley-Interscience, New York.
 (4) Saportto-Irwin, S.M. et al. (1997) *BioTechniques* **23**, 424-427

High-efficiency cloning of full-length cDNA.

Precipitation of nucleic acids.

Protocol for the preparation of plasmid DNA, suitable for the transfection of mammalian cells.

Comment: All references describe methods for the precipitation of nucleic acids using ammonium acetate (NH₄OAc), instead of the commonly used sodium acetate. Stock solutions are made of 10 M (ref. 3; 770 g/L, filtered) or 7.5 M ammonium acetate (4).

Precipitation of DNA: Make the DNA-containing sample 2.5 M ammonium acetate by adding 0.5 volume 7.5 M ammonium acetate stock solution. Mix well and add 2.5 to 3 volumes (DNA-sample + ammonium acetate) ethanol (example: 1 ml DNA-containing sample + 0.5 ml ammonium acetate; mix well; add 3.75 to 4.5 ml ethanol). Mix well and incubate for 10 minutes in a dry ice bath or a -70°C freezer. Nucleotides and oligonucleotides will not be precipitated, which will coprecipitate with the DNA, if sodium acetate is employed. Two consecutive precipitations will remove 99 % of the nucleotides and result in a DNA recovery of more than 90 %.

The quality of the DNA resulting from this protocol is sufficient for the transfection of mammalian cells. The preparation is much cheaper than the purification with cesium chloride (3).

Caution! Ammonium acetate shall not be used, if the purified DNA has to be phosphorylated, because ammonium ions will inhibit the kinase.

Precipitation of RNA: Add to a 10 ml aqueous RNA-containing sample 0.1 volume 3 M NH₄OAc (pH 5.5; 1 ml; final conc. 0.3 M) and mix. Then add 27.5 ml (2.5 volumes) ethanol and mix. Incubate the sample for 10 minutes at -70°C in a dry ice bath or a freezer. Ammonium acetate can be a substitute for potassium acetate, when the RNA is used in a cell-free translation system.

Ammonium acetate p. A.

C

Specification:	Fe	 max. 0.0005 %	Order-No.	Quantity
Assay (titr.) min. 98 %	Mn	 max. 0.0005 %	A1030,0500	500 g
pH (5 %; H ₂ O; 25°C) 6.5 - 7.3	Pb	 max. 0.0005 %	A1030,1000	1 kg
Loss on drying max. 2.5 %	Zn	 max. 0.0005 %	A1030,10006	6 x 1 kg
Chloride max. 0.002 %			A1030,5000	5 kg
Sulfate max. 0.005 %			A1030,9010	10 kg
Co max. 0.0005 %			A1030,9025	25 kg
Cr max. 0.0005 %				

Ammonium acetate pure

C

Specification:	Order-No.	Quantity
Assay (titr.) min. 96 %	A1354,0500	500 g
pH (5 %; H ₂ O; 25°C) 6.5 - 7.5	A1354,1000	1 kg
Loss on drying max. 2.5 %	A1354,10006	6 x 1 kg
Chloride max. 0.01 %	A1354,5000	5 kg
Sulfate max. 0.02 %	A1354,9010	10 kg
Fe max. 0.001 %	A1354,9025	25 kg
Pb max. 0.001 %		

Ammonium acetate - Solutions Molecular biology grade

HS-No.: 38220000 Storage: RT

Ammonium acetate - Lösung (7.5 M) Molecular biology grade

B

Composition:	Specification:	Order-No.	Quantity
Ammonium acetate 578.1 g/L	DNases/RNases/Proteases	A7419,0250	250 ml
	 not detectable	A7419,1000	1 L
	pH (1 M; H ₂ O; 25°C) ... 6.5 - 7.5		

Ammonium acetate - Solution (5 M) Molecular biology grade

B

Composition:	Specification:	Order-No.	Quantity
Ammonium acetate 385.4 g/L	DNases/RNases/Proteases	A4716,0250	250 ml
	 not detectable	A4716,1000	1 L
	Heavy metals (as Pb) .. max. 0.001 %		

Ammonium aluminium sulfate see Aluminium ammonium sulfate dodecahydrate pure USP Page 82
 Ammonium-8-anilino-1-naphthalene sulfonate see 8-Anilinosulphthalene-1-sulfonic acid ammonium salt *BioChemica* Page 110
 Ammonium bicarbonate see Ammonium hydrogen carbonate Page 96
 Ammonium bisulfate see Ammonium hydrogen sulfate Page 97

Ammonium bromide

Melting point	 542°C	H ₄ BrN	Storage: RT	WGK: 1
Solubility (20°C)	 598 g/L (H ₂ O)	M = 97.94 g/mol	LGK: 10 - 13	
		CAS-No.: 12124-97-9		
		HS-No.: 28275900		
		EC-No.: 235-183-8		

Ammonium bromide p. A.

Specification:					Order-No.	Quantity
Assay (titr.)	 min. 99 %	As	 max. 0.0001 %	Na		
Bromate	 max. 0.001 %	Cr	 max. 0.0005 %	Ni	A3560,0500	500 g
Chloride	 max. 0.1 %	Cu	 max. 0.0005 %	Pb	A3560,1000	1 kg
Iodide	 max. 0.005 %	Fe	 max. 0.0005 %	Zn		
Sulfate	 max. 0.005 %	K	 max. 0.005 %			

Ammonium bromide pure

Specification:					Order-No.	Quantity
Assay (titr.)	 min. 99 %	As	 max. 0.0002 %			
Heavy metals (as Pb)	 max. 0.001 %	Ca	 max. 0.01 %		A2297,0500	500 g
Loss on drying	 max. 0.1 %	Fe	 max. 0.0005 %		A2297,1000	1 kg
Chloride	 max. 0.2 %				A2297,10006	6 x 1 kg
Iodide	 max. 0.01 %				A2297,5000	5 kg
Sulfate	 max. 0.005 %				A2297,9010	10 kg

Ammonium carbonate pure Food grade

<i>Mixture of variable quantities of Ammonium carbonate and Ammonium carbamate</i>	CAS-No.: 10361-29-2	Storage: RT	WGK: 1	
	HS-No.: 28369917	LGK: 10 - 13	Warning	
	EC-No.: 233-786-0		H302	
Solubility (20°C)	 1000 g/L (H ₂ O)		P330-P301+P312-P264	

Specification:					Order-No.	Quantity
Assay (titr.)	 min. 30 % (NH ₃)	Pb	 max. 0.001 %			
Chloride	 max. 0.0005 %				A0799,1000	1 kg
Sulfate	 max. 0.005 %				A0799,10006	6 x 1 kg
As	 max. 0.0005 %				A0799,5000	5 kg
Cu	 max. 0.0025 %				A0799,9010	10 kg
Fe	 max. 0.0005 %				A0799,9025	25 kg

Ammonium chloride

Boiling point	 520°C	H ₄ ClN	Storage: RT	WGK: 1	
Solubility (20°C)	 370 g/L (H ₂ O)	M = 53.49 g/mol	LGK: 10 - 13	Warning	
		CAS-No.: 12125-02-9	Disposal: 14	H302-H319	
		HS-No.: 28271000		P305+P351+P338	
		EC-No.: 235-186-4			

Ammonium chloride Molecular biology grade

Specification:					Order-No.	Quantity
DNases/RNases/Proteases	not detectable	Sulfate	 max. 0.002 %	Na		
Assay (titr.)	 min. 99.5 %	Ca	 max. 0.0005 %	Pb	A3260,0100	100 g
pH (5 %; H ₂ O; 20°C)	4.5 - 5.5	Cu	 max. 0.0001 %	Zn	A3260,0250	250 g
Nitrate	 max. 0.0005 %	Fe	 max. 0.0002 %		A3260,0500	500 g
Phosphate	 max. 0.0002 %	Mg	 max. 0.0005 %		A3260,1000	1 kg

Ammonium chloride *BioChemica*

Specification:					Order-No.	Quantity
Assay (titr.)	 min. 99.5 %	A (1 cm/1 M in H ₂ O)				
Heavy metals (as Pb)	 max. 0.001 %	260 nm	 max. 0.03		A3661,0500	500 g
Insoluble matter	 complies	280 nm	 max. 0.02		A3661,1000	1 kg
pH (5 %; H ₂ O)	4.5 - 5.5 (20°C)				A3661,5000	5 kg

Ammonium chloride p. A.

Specification:					Order-No.	Quantity
Assay (titr.)	 min. 99.5 %	Fe	 max. 0.0002 %			
pH (5 %; H ₂ O; 20°C)	4.5 - 5.5	K	 max. 0.005 %		A0988,0500	500 g
Nitrate	 max. 0.0005 %	Mg	 max. 0.0005 %		A0988,1000	1 kg
Phosphate	 max. 0.0002 %	Na	 max. 0.01 %		A0988,10006	6 x 1 kg
Sulfate	 max. 0.002 %	Pb	 max. 0.0001 %		A0988,5000	5 kg
Ca	 max. 0.0005 %	Zn	 max. 0.0002 %		A0988,9010	10 kg
Cu	 max. 0.0001 %				A0988,9025	25 kg

Ammonium chloride pure Ph. Eur., USP

C

Specification:			Order-No.	Quantity
Assay (titr.)	99.5 - 100.5 %	Sulfated ash	A0984,1000	1 kg
Acidic/alkaline react. subst.	complies	pH (5 %; H ₂ O; 25°C)	A0984,10006	6 x 1 kg
Appearance of solution	complies	Bromide, iodide	A0984,5000	5 kg
Heavy metals (as Pb)	max. 0.001 %	Sulfate	A0984,9010	10 kg
Identity	complies	Thiocyanate	A0984,9025	25 kg
Loss on drying	max. 0.5 %	Ca		
		Fe		
		max. 0.002 %		

Ammonium chloride Technical grade

C

Specification:		Order-No.	Quantity
Assay (titr.)	min. 98 %	A7012,5000	5 kg
		A7012,9010	10 kg
		A7012,9025	25 kg

Ammonium chloride - Solutions

Storage: RT

Ammonium chloride - Solution (10 %) p. A.

C

Aqueous solution		HS-No.: 28271000	
Specification:		Order-No.	Quantity
Assay	min. 10 %	A0452,0500	500 ml
pH	4.5 - 5.5	A0452,1000	1 L
Sulfate	max. 0.002 %		
Ca	max. 0.002 %		
Fe	max. 0.0002 %		
Pb	max. 0.0001 %		

Ammonium chloride - Solution (1 M)

C

Composition:		HS-No.: 28271000	
NH ₄ Cl (A0988)	53.49 g/L	Order-No.	Quantity
		A2809,0500	500 ml
		A2809,1000	1 L
Specification:			
pH (20°C)	4.5 - 5.5		

Ammonium chloride - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)		HS-No.: 38220000	
Specification:		Order-No.	Quantity
Factor limits	0.998 - 1.002	A0586,0500	500 ml
		A0586,1000	1 L

sec.-Ammonium citrate see di-Ammonium hydrogen citrate Page 96

Ammonium dihydrogen phosphate

prim.-Ammonium phosphate	H ₂ NO ₄ P	Storage: RT	WGK: 1
	M = 115.03 g/mol	LGK: 10 - 13	
Melting point	190°C (dec.)	Disposal: 14	
Solubility (20°C)	350 g/L (H ₂ O)		
	CAS-No.: 7722-76-1		
	HS-No.: 31054000		
	EC-No.: 231-764-5		

Ammonium dihydrogen phosphate p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.)	min. 99 %	A2308,0500	500 g
pH (5 %; H ₂ O)	4.0 - 5.0 (20°C)	A2308,1000	1 kg
Chloride	max. 0.0005 %	A2308,10006	6 x 1 kg
Nitrate	max. 0.001 %	A2308,5000	5 kg
Sulfate	max. 0.005 %		
Ca	max. 0.0005 %		
Fe	max. 0.001 %		
K	max. 0.005 %		
Mg	max. 0.005 %		
Na	max. 0.005 %		

Ammonium dihydrogen phosphate pure

C

Specification:		Order-No.	Quantity
Assay (titr.)	min. 99 %	A1865,1000	1 kg
pH (5 %; H ₂ O; 20°C)	4.0 - 5.5	A1865,10006	6 x 1 kg
Chloride	max. 0.001 %	A1865,5000	5 kg
Sulfate	max. 0.01 %	A1865,9010	10 kg
As	max. 0.0001 %	A1865,9025	25 kg
Fe	max. 0.001 %		

Ammonium heptamolybdate tetrahydrate see Ammonium molybdate tetrahydrate Page 100

Ammonium hydrogen carbonate

Ammonium bicarbonate	CH ₃ NO ₃ M = 79.06 g/mol CAS-No.: 1066-33-7 HS-No.: 28369917 EC-No.: 213-911-5	Storage: RT LGK: 10 - 13	WGK: 1 Warning H302 P301+P312-P264-P330
Melting point	 105°C (dec.)		
Solubility (20°C)	 176 g/L (H ₂ O)		



Ammonium hydrogen carbonate BioChemica

B

Specification:			Order-No.	Quantity
Assay (titr.)	 min. 99 %	Sulfate	 max. 0.005 %	
Heavy metals (as Pb)	 max. 0.001 %		A (1 cm/1 M in H ₂ O)	
Insoluble matter	 complies		260 nm	 max. 0.03
pH (1 M; H ₂ O)	 7.0 - 8.5		280 nm	 max. 0.02
Chloride	 max. 0.005 %			
			A3689,0500	500 g
			A3689,1000	1 kg
			A3689,5000	5 kg

Literature:		Elution of proteins from gels.
(1) Harrington, M.G. (1990) <i>Methods Enzymol.</i> 182 , 488-495		Localization of O-GlcNAc modification on the serum response transcription factor.
(2) Reason, A.J. et al. (1992) <i>J. Biol. Chem.</i> 267 , 16911-16921		A growth factor-induced kinase phosphorylates the serum response factor at sites that regulates its DNA-binding activity.
(3) Rivera, V.M. et al. (1993) <i>Mol. Cell. Biol.</i> 13 , 6260-6273		Identification of the sites of selective phosphorylation and dephosphorylation of the rat brain Na ⁺ channel a subunit by cAMP-dependent protein kinase and phosphoprotein phosphatases.
(4) Murphy, B.J. et al. (1993) <i>J. Biol. Chem.</i> 268 , 27355-27362		

Comment: Ammonium hydrogen carbonate (ammonium bicarbonate) is a volatile, basic buffer. This sort of buffers have to be prepared just before use (e. g. 50 mM NH₄HCO₃; pH 8.5; ref. 1). They are advantageous, when the buffer has to be removed from a protein after elution of a gel. Another typical application is the use as enzyme reaction buffer for the tryptic digest of proteins (50 mM NH₄HCO₃; pH 8.4; ref. 2, 3 or 25 mM NH₄HCO₃; pH 8.9; ref. 4).

Ammonium hydrogen carbonate p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.)	 min. 99 %		
Chloride	 max. 0.001 %	A3583,0500	500 g
Sulfate	 max. 0.005 %	A3583,1000	1 kg
As	 max. 0.00005 %	A3583,10006	6 x 1 kg
Cu	 max. 0.0005 %	A3583,5000	5 kg

Ammonium hydrogen carbonate pure Ph. Eur., BP, E 503

C

Specification:		Order-No.	Quantity
Assay (titr.)	 98.0 - 101.0 %	A0751,1000	1 kg
Heavy metals (as Pb)	 max. 0.001 %	A0751,10006	6 x 1 kg
Identity	 complies	A0751,5000	5 kg
Non-volatile matter	 max. 0.05 %	A0751,9010	10 kg
Chloride	 max. 0.001 %	A0751,9025	25 kg
Sulfate	 max. 0.005 %		

di-Ammonium hydrogen citrate

sec.-Ammonium citrate, Diammonium hydrogen citrate	C ₆ H ₁₄ N ₂ O ₇ M = 226.19 g/mol CAS-No.: 3012-65-5 HS-No.: 29181500 EC-No.: 221-146-3	Storage: RT LGK: 10 - 13 Disposal: 14	WGK: 1 Warning H319 P305+P351+P338
Solubility (20°C)	 readily soluble (H ₂ O)		



di-Ammonium hydrogen citrate p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.)	 min. 99 %		
Chloride	 max. 0.0005 %	A1667,0500	500 g
Oxalate	 max. 0.05 %	A1667,1000	1 kg
Phosphate	 max. 0.0005 %	A1667,10006	6 x 1 kg
Sulfate	 max. 0.01 %	A1667,5000	5 kg

di-Ammonium hydrogen citrate pure

C

Specification:		Order-No.	Quantity
Assay (titr.)	 min. 98 %		
Chloride	 max. 0.0005 %	A1798,0500	500 g
Sulfate	 max. 0.01 %	A1798,1000	1 kg
Fe	 max. 0.001 %	A1798,10006	6 x 1 kg
Pb	 max. 0.001 %	A1798,5000	5 kg
		A1798,9010	10 kg
		A1798,9025	25 kg

di-Ammonium hydrogen phosphate

Ammonium phosphate dibasic

$H_9N_2O_4P$
 $M = 132.06$ g/mol
 CAS-No.: 7783-28-0
 HS-No.: 31053000
 EC-No.: 231-987-8

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: 1

Melting point 155°C (dec.)
 Solubility (20°C) 690 g/L (H_2O)

di-Ammonium hydrogen phosphate p. A.

C

Specification:

Assay (titr.) min. 99 %	As max. 0.0001 %
pH (5 %; H_2O) 7.8 - 8.1 (20°C)	Fe max. 0.001 %
Chloride max. 0.0005 %	Mg max. 0.001 %
Nitrate max. 0.001 %	Na max. 0.001 %
Sulfate max. 0.005 %	Pb max. 0.0005 %

Order-No.	Quantity
A2291,0250	250 g
A2291,0500	500 g
A2291,1000	1 kg
A2291,10006	6 x 1 kg

di-Ammonium hydrogen phosphate pure

C

Specification:

Assay (titr.) 96 - 102 %
pH (1 %; H_2O) 7.6 - 8.2 (20°C)
Chloride max. 0.002 %
Sulfate max. 0.04 %
As max. 0.0002 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A2301,0500	500 g
A2301,1000	1 kg
A2301,10006	6 x 1 kg
A2301,5000	5 kg
A2301,9010	10 kg
A2301,9025	25 kg

Ammonium hydrogen sulfate

Ammonium bisulfate

H_3NO_4S
 $M = 115.10$ g/mol
 CAS-No.: 7803-63-6
 HS-No.: 28332980
 EC-No.: 232-265-5

Storage: RT
 LGK: 8 B
 Disposal: 14

Class / PG: 8/II
 UN2506
 WGK: 1
 Danger
 H314
 P305+P351+P338-P301+P330+P331-P280



Ammonium hydrogen sulfate p. A.

C

Specification:

Assay (titr.) min. 99.0 %	Fe max. 0.001 %
Chloride max. 0.005 %	Na max. 0.001 %
As max. 0.0001 %	Pb max. 0.001 %
Ca max. 0.001 %	Zn max. 0.001 %

Order-No.	Quantity
A3548,0100	100 g
A3548,0500	500 g
A3548,1000	1 kg

Ammonium hydrogen sulfate pure

C

Specification:

Assay (titr.) min. 98 %	Na max. 0.01 %
Chloride max. 0.005 %	Pb max. 0.005 %
As max. 0.0003 %	Zn max. 0.005 %
Ca max. 0.005 %	
Fe max. 0.005 %	

Order-No.	Quantity
A0752,0250	250 g
A0752,0500	500 g
A0752,1000	1 kg
A0752,10006	6 x 1 kg

Ammonium hydroxide - Solution see Ammonia - Solutions ≥ 25 % Page 90
 Ammonium hydroxide solutions see Ammonia - Solutions (Concentrations: ≥ 10 % - < 25 %) Page 91
 Ammonium hydroxide solution see Ammonia - Solution 3.5 % p. A. Page 92
 Ammonium hydroxide - Standard volumetric solution see Ammonia - Standard volumetric solutions Page 92
 Ammonium hyposulfite see Ammonium thiosulfate pure Page 104
 Ammonium ionophore see Nonactin BioChemica Page 576

Ammonium iron(II) sulfate hexahydrate

$(NH_4)_2Fe(SO_4)_2 \cdot 6H_2O$

$H_8FeN_2O_{16}S_2$
 $M = 392.14$ g/mol
 CAS-No.: 7783-85-9
 HS-No.: 28332980
 EC-No.: 233-151-8

Storage: RT
 LGK: 10 - 13
 Disposal: 15

WGK: 1

Melting point 100°C
 Solubility (20°C) 269 g/L (H_2O)

Ammonium iron(II) sulfate hexahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %	Cu max. 0.002 %	Pb max. 0.001 %
pH (5 %; H_2O) 3.0 - 5.0 (20°C)	Fe(II) max. 0.01 %	Zn max. 0.003 %
Chloride max. 0.001 %	K max. 0.01 %	
Phosphate max. 0.002 %	Mg max. 0.01 %	
Ca max. 0.01 %	Na max. 0.01 %	

Order-No.	Quantity
A2312,0500	500 g
A2312,1000	1 kg
A2312,10006	6 x 1 kg
A2312,5000	5 kg

Ammonium iron(II) sulfate hexahydrate pure

C

Specification:

Assay (titr.)	min. 98 %	Pb	max. 0.001 %
pH (5 %; H ₂ O)	3.0 - 5.0 (20°C)	Zn	max. 0.01 %
Chloride	max. 0.002 %		
Cu	max. 0.005 %		
Fe(III)	max. 0.01 %		
Na	max. 0.05 %		

Order-No.	Quantity
A2289,1000	1 kg
A2289,10006	6 x 1 kg
A2289,5000	5 kg
A2289,9010	10 kg
A2289,9025	25 kg

Ammonium iron(II) sulfate - Standard volumetric solutionsIn diluted H₂SO₄

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13WGK: 1
Danger
H314
P305+P351+P338-P280-
P301+P330+P331**Ammonium iron(II) sulfate - Standard volumetric solution (0.5 M)**

C

0.5 mol/L (0.5 N Solution)

Class / PG: 8/III
UN3264**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3281,1000	1 L
A3281,10006	6 x 1 L
A3281,5000	5 L
A3281,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.25 M) for COD - determination

C

0.25 mol/L (0.25 N Solution)

Class / PG: 8/III
UN3264**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3295,1000	1 L
A3295,5000	5 L
A3295,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.2 M) for COD - determination

C

0.2 mol/L (0.2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3286,1000	1 L
A3286,5000	5 L
A3286,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.12 M) for COD-determination

C

0.12 mol/L (0.12 N Solution)

DIN 38409 (H41) according to DEV H41

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3149,1000	1 L
A3149,10006	6 x 1 L
A3149,5000	5 L
A3149,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric Solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1467,1000	1 L
A1467,10006	6 x 1 L
A1467,5000	5 L

Ammonium iron(II) sulfat - Standard volumetric solution (0.06 M) for COD-determination

C

0.06 mol/L (0.06 N Solution)

DIN 38409 (H41) according to DEV H41

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3225,1000	1 L
A3225,5000	5 L
A3225,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.05 M) for COD - determination

C

0.05 mol/L (0.05 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3294,1000	1 L
A3294,5000	5 L
A3294,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.025 M) for COD-determination

C

0.025 mol/L (0.025 N Solution)

DIN 38409 (H41) according to DEV H41

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3317,1000	1 L
A3317,5000	5 L
A3317,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.02 M) for COD - determination

C

0.02 mol/L (0.02 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3300,1000	1 L
A3300,5000	5 L
A3300,9010	10 L

Ammonium iron(II) sulfate - Standard volumetric solution (0.015 M) for COD-determination

C

0.015 mol/L (0.015 N Solution)

DIN 38409 (H41) according to DEV H41

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3434,1000	1 L
A3434,5000	5 L
A3434,9010	10 L

Ammonium iron(III) sulfate dodecahydrate

Melting point 39 - 41°C
Solubility (25°C) 1240 g/L (H₂O)

H₄FeNO₆S₂ · 12H₂O
M = 482.19 g/mol
CAS-No.: 7783-83-7
HS-No.: 28333000
EC-No.: 233-382-4

Storage: RT
LGK: 10 - 13
Disposal: 15

WGK: 1

Ammonium iron(III) sulfate dodecahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
Insoluble matter max. 0.005 %
pH (5 %; H₂O) 1.5 - 2.5 (20°C)
Chloride max. 0.001 %
Cu max. 0.001 %

K max. 0.01 %
Mg max. 0.001 %
Na max. 0.01 %
Pb max. 0.001 %
Zn max. 0.003 %

Order-No.	Quantity
A3283,0500	500 g
A3283,1000	1 kg
A3283,10006	6 x 1 kg
A3283,5000	5 kg

Ammonium iron(III) sulfate dodecahydrate pure

C

Specification:

Assay (titr.) min. 99 %
pH (5 %; H₂O) 1.5 - 2.5 (20°C)
Chloride max. 0.002 %
Cu max. 0.005 %
Pb max. 0.002 %
Zn max. 0.01 %

Order-No.	Quantity
A3999,1000	1 kg
A3999,10006	6 x 1 kg
A3999,5000	5 kg
A3999,9010	10 kg
A3999,9025	25 kg

Ammonium iron(III) sulfate - Solution approx. 40 % p. A.

C

Aqueous solution

HS-No.: 38220000

Storage: RT
protected from light
Disposal: 15

Specification:

Assay (titr.) 39.0 - 41.0 %
Chloride max. 0.001 %
Cu max. 0.0005 %
K max. 0.01 %

Mg max. 0.0005 %
Na max. 0.01 %
Pb max. 0.0005 %
Zn max. 0.001 %

Order-No.	Quantity
A3629,0250	250 ml
A3629,0500	500 ml
A3629,1000	1 L

Ammonium iron(III) sulfate - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)
in Sulfuric acid (0.5 M) for Fe(II) -
determination

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 15

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3303,1000	1 L
A3303,10006	6 x 1 L
A3303,5000	5 L
A3303,9010	10 L

Ammonium isothiocyanate see Ammonium thiocyanate Page 103

Ammonium molybdate tetrahydrate

Ammonium heptamolybdate
tetrahydrate, (NH₄)₆Mo₇O₂₄ · 4H₂O

H₂₄Mo₇N₆O₂₄ · 4H₂O
M = 1235.86 g/mol
CAS-No.: 12054-85-2
HS-No.: 28417000
EC-No.: 234-722-4

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Solubility (20°C) 400 g/L (H₂O)**Ammonium molybdate tetrahydrate BioChemica**

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (0.05 M; H₂O) 4.0 - 5.5 (20°C)
Chloride max. 0.001 %

Nitrate max. 0.002 %
Phosphate max. 0.001 %
Sulfate max. 0.005 %
Fe max. 0.001 %

Order-No.	Quantity
A2246,0025	25 g
A2246,0100	100 g
A2246,0250	250 g
A2246,0500	500 g

Literature: (1) Lowry, O.H. (1957) *Methods Enzymol.* **4**, 366-381
(2) Rivera, V.M. et al. (1993) *Mol. Cell. Biol.* **13**, 6260-6273

(3) Wu, Y.Y. & Bradshaw, R.A. (1993) *J. Cell Biol.* **121**, 409-422

Micromethods for the assay of enzymes.

A growth factor-induced kinase phosphorylates the serum response factor at a site that regulates its DNA-binding activity.

Effect of nerve growth factor and fibroblast growth factor on PC12 cells: Inhibition by Orthovanadate.

Comment: Molybdate is a tyrosine phosphatase inhibitor. Its sodium or ammonium salts are added to the inhibitor cocktails in a working concentration ranging from 1 - 10 mM (e. g. ref. 3). Besides, molybdate is used as a reagent for the demonstration of inorganic phosphate, e. g. released by adenine triphosphatase (1).

Ammonium molybdate tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
Chloride max. 0.0005 %
Nitrate max. 0.002 %
Phosphate max. 0.0005 %
Sulfate max. 0.005 %
Cu max. 0.001 %

Fe max. 0.001 %
Mg max. 0.02 %
Pb max. 0.001 %

Order-No.	Quantity
A4000,0100	100 g
A4000,0250	250 g
A4000,0500	500 g
A4000,1000	1 kg
A4000,10006	6 x 1 kg

Ammonium molybdate tetrahydrate pure

C

Specification:

Assay (titr.) min. 99 %
Chloride max. 0.002 %
Phosphate max. 0.002 %
Sulfate max. 0.02 %
Fe max. 0.002 %

Order-No.	Quantity
A0836,0250	250 g
A0836,0500	500 g
A0836,1000	1 kg
A0836,10006	6 x 1 kg

Ammonium molybdate - Solutions

EC-No.: 234-722-4

Storage: RT

Ammonium molybdate - Solution 20 % pure

C

Aqueous solution

HS-No.: 28417000

LGK: 10 - 13
Disposal: 28

WGK: 1

Composition:

Ammonium molybdate 200 g/L

Specification:

Sulfate max. 0.02 %
Chloride max. 0.002 %
Phosphate max. 0.002 %
Fe max. 0.002 %

Order-No.	Quantity
A0650,0100	100 ml
A0650,0500	500 ml
A0650,1000	1 L

Ammonium molybdate - Solution 5 % p. A.

C

Aqueous solution

HS-No.: 38220000

LGK: 10 - 13
Disposal: 28

WGK: 1

Composition:

Ammonium molybdate 50 g/L

Specification:Chloride max. 0.0005 %
Sulfate max. 0.005 %
Cu max. 0.001 %
Fe max. 0.001 %

Pb max. 0.001 %

Order-No.
A3287,1000
A3287,10006
A3287,5000**Quantity**
1 L
6 x 1 L
5 L**Ammonium molybdate - Solution 4 % p. A.**

C

in diluted Sulfuric acid

HS-No.: 38220000

Class / PG: 8/II
UN3264
Warning
H315-H319
P309+P311-P305+P351+P338**Composition:**Ammonium molybdate 40 g/L
Sulfuric acid 95 - 97 % 40 g/L**Specification:**Chloride max. 0.0005 %
Sulfate max. 0.005 %
Cu max. 0.001 %Fe max. 0.001 %
Pb max. 0.001 %**Order-No.**
A0898,0500
A0898,1000**Quantity**
500 ml
1 L**Ammonium nitrate**Melting point 169°C (dec.)
Solubility (20°C) 1183 g/L (H₂O)H₄N₂O₃
M = 80.04 g/mol
CAS-No.: 6484-52-2
HS-No.: 31023090
EC-No.: 229-347-8Storage: RT
LGK: 5.1 C
Disposal: 14Class / PG: 5.1/II
UN1942
WGK: 1
Warning
H272
P210**Ammonium nitrate BioChemica**

B

Specification:Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Water (K.F.) max. 1 %pH (5 %; H₂O) 4.5 - 6.0 (20°C)
Chloride max. 0.0005 %
Nitrite max. 0.001 %
Sulfate max. 0.002 %Ca max. 0.003 %
Fe max. 0.0005 %**Order-No.**
A3645,0500
A3645,1000
A3645,5000**Quantity**
500 g
1 kg
5 kg**Ammonium nitrate p. A.**

C

Specification:Assay (titr.) min. 99 %
pH (5 %; H₂O; 20°C) 4.5 - 6.0
Chloride max. 0.0005 %
Nitrite max. 0.001 %
Sulfate max. 0.002 %As max. 0.0003 %
Ca max. 0.003 %
Cu max. 0.0005 %
Fe max. 0.0002 %
Na max. 0.005 %Pb max. 0.0005 %
Zn max. 0.0002 %**Order-No.**
A1031,0500
A1031,1000
A1031,10006
A1031,5000**Quantity**
500 g
1 kg
6 x 1 kg
5 kg**Ammonium nitrate pure**

C

Specification:Assay (titr.) min. 98.5 %
pH (5 %; H₂O; 20°C) 4.5 - 6.0
Chloride max. 0.002 %
Sulfate max. 0.01 %
As max. 0.0003 %
Ca max. 0.005 %Fe max. 0.001 %
Pb max. 0.001 %
Zn max. 0.002 %**Order-No.**
A1355,1000
A1355,10006
A1355,5000
A1355,9010
A1355,9025**Quantity**
1 kg
6 x 1 kg
5 kg
10 kg
25 kg**Ammonium nitrate Technical grade**

C

Specification:Assay (titr.) min. 98.5 %
Heavy metals (as Pb) max. 0.005 %
Chloride max. 0.005 %
Fe max. 0.002 %**Order-No.**
A6595,1000
A6595,10006
A6595,5000
A6595,9010
A6595,9025**Quantity**
1 kg
6 x 1 kg
5 kg
10 kg
25 kg

di-Ammonium oxalate monohydrate

Oxalic acid ammonium salt

$C_2H_8N_2O_4 \cdot H_2O$
 $M = 142.11 \text{ g/mol}$
 CAS-No.: 6009-70-7
 HS-No.: 29171100
 EC-No.: 214-202-3

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: 1
 Warning
 H312-H302
 P302+P352



Melting point 70°C (dec.)
 Solubility (20°C) approx. 45 g/L
 (H₂O)

di-Ammonium oxalate monohydrate p. A.

C

Specification:

Assay (titr.) min. 99.5 %	K max. 0.001 %
Insoluble matter max. 0.005 %	Na max. 0.001 %
Residue on ignition max. 0.02 %	Pb max. 0.0005 %
Chloride max. 0.005 %	
Sulfate max. 0.005 %	
Ca max. 0.001 %	

Order-No.	Quantity
A0428,0100	100 g
A0428,0250	250 g
A0428,0500	500 g
A0428,1000	1 kg
A0428,10006	6 x 1 kg

di-Ammonium oxalate monohydrate pure

C

Specification:

Assay (titr.) min. 99 %
Residue on ignition max. 0.1 %
Chloride max. 0.01 %
Sulfate max. 0.02 %
Fe max. 0.002 %
Pb max. 0.005 %

Order-No.	Quantity
A3500,0250	250 g
A3500,0500	500 g
A3500,1000	1 kg
A3500,10006	6 x 1 kg
A3500,5000	5 kg

Ammonium peroxodisulfate see Ammonium persulfate Page 102

Ammonium persulfate

APS, Ammonium peroxodisulfate

$H_2N_2O_8S_2$
 $M = 228.20 \text{ g/mol}$
 CAS-No.: 7727-54-0
 HS-No.: 28334000
 EC-No.: 231-786-5

Storage: RT
 LGK: 5.1 B
 Disposal: 22

Class / PG: 5.1/III
 UN1444
 WGK: 1
 Danger
 H302-H272-H334-H317-H319-H315-
 H335
 P305+P351+P338-P280-P342+P311-
 P304+P341-P302+P352



Melting point 120°C (dec.)
 Solubility (20°C) 582 g/L (H₂O)

Ammonium persulfate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable	pH (5 %; H ₂ O) 3.0 - 4.0 (20°C)	Mn max. 0.00005 %
Assay (titr.) min. 98 %	Chlorate max. 0.001 %	Pb max. 0.005 %
Free acid max. 0.1 %	Chloride max. 0.001 %	
Residue on ignition max. 0.05 %	Fe max. 0.001 %	

Order-No.	Quantity
A2941,0100	100 g
A2941,0250	250 g
A2941,0500	500 g

Ammonium persulfate BioChemica

B

Specification:

Assay (titr.) min. 98 %	Chlorate max. 0.001 %	Pb max. 0.005 %
Free acid max. 0.1 %	Chloride max. 0.001 %	
Residue on ignition max. 0.05 %	Fe max. 0.001 %	
pH (5 %; H ₂ O; 20°C) 3.0 - 4.0	Mn max. 0.00005 %	

Order-No.	Quantity
A1142,0250	250 g
A1142,0500	500 g
A1142,1000	1 kg

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87 Electrophoresis in agarose and acrylamide gels.
 (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
 (3) Gomes, A.V. & Barnes, J.A. (1998) *Anal. Biochem.* **260**, 106-108 Gel electrophoresis with mini gels.

Comment: Ammonium persulfate (APS) and Riboflavin serve as the initiators of the polymerisation of Acrylamide. Stock solutions of APS (10 % in water) are stable for several weeks at +4°C. Freezing of aliquots increase the shelf life (-20°C: stable for > 6 months; -70°C: stable for > 9 months).

Ammonium persulfate p. A.

C

Specification:

Assay (titr.) min. 98 %	Chloride max. 0.0005 %
Free acid max. 0.2 %	Fe max. 0.001 %
Residue on ignition max. 0.1 %	Mn max. 0.00005 %
pH (5 %; H ₂ O; 20°C) 3.0 - 4.0	Pb max. 0.005 %
Chlorate max. 0.002 %	

Order-No.	Quantity
A0834,0250	250 g
A0834,0500	500 g
A0834,1000	1 kg
A0834,10006	6 x 1 kg

Ammonium persulfate pure

C

Specification:

Assay (titr.) min. 98 %	Chloride max. 0.002 %
Free acid max. 0.2 %	Fe max. 0.001 %
Residue on ignition max. 0.1 %	Mn max. 0.002 %
pH (5 %; H ₂ O; 20°C) 3.0 - 4.0	Pb max. 0.005 %
Chlorate max. 0.002 %	

Order-No.	Quantity
A1356,0500	500 g
A1356,1000	1 kg
A1356,10006	6 x 1 kg
A1356,5000	5 kg

prim.-Ammonium phosphate see Ammonium dihydrogen phosphate Page 95
 Ammonium phosphate dibasic see di-Ammonium hydrogen phosphate Page 97

Ammonium sulfate

Melting point 280°C (dec.)
Solubility (20°C) 760 g/L (H₂O)

H₈N₂O₄S
M = 132.14 g/mol
CAS-No.: 7783-20-2
HS-No.: 31022100
EC-No.: 231-984-1

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Ammonium sulfate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
pH (5 %; H₂O) 5.0 - 6.0 (20°C)
Chloride max. 0.001 %
Nitrate max. 0.001 %

Phosphate max. 0.0005 %
As max. 0.0001 %
Ca max. 0.001 %
Cu max. 0.0005 %
Fe max. 0.0005 %

K max. 0.002 %
Mg max. 0.0005 %
Na max. 0.002 %
Pb max. 0.0005 %
Zn max. 0.0002 %

Order-No.	Quantity
A3485,0500	500 g
A3485,1000	1 kg
A3485,10006	6 x 1 kg
A3485,5000	5 kg

Ammonium sulfate BioChemica

B

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H₂O; 20°C) 5.0 - 6.0
Chloride max. 0.001 %

Nitrate max. 0.001 %
Phosphate max. 0.0005 %

A (1 cm/1 M in H₂O)
260 nm max. 0.4
280 nm max. 0.4

Order-No.	Quantity
A1032,0500	500 g
A1032,1000	1 kg
A1032,5000	5 kg
A1032,9010	10 kg

Literature: (1) Wood, W.I. (1976) *Anal. Biochem.* **73**, 250-257

Tables for the preparation of ammonium sulfate solutions.

Comment: Ammonium sulfate is used for the selective precipitation of proteins. This reference discusses the advantages of this method.

Ammonium sulfate p. A.

C

Specification:

Assay (titr.) min. 99.5 %
pH (5 %; H₂O) 5.0 - 6.0 (20°C)
Chloride max. 0.001 %
Nitrate max. 0.001 %
Phosphate max. 0.0005 %
As max. 0.0001 %
Ca max. 0.001 %

Cu max. 0.0005 %
Fe max. 0.0005 %
K max. 0.002 %
Mg max. 0.0005 %
Na max. 0.002 %
Pb max. 0.0005 %
Zn max. 0.0002 %

Order-No.	Quantity
A3598,0500	500 g
A3598,1000	1 kg
A3598,10006	6 x 1 kg
A3598,5000	5 kg
A3598,9010	10 kg
A3598,9025	25 kg

Ammonium sulfate pure

C

Specification:

Assay (titr.) min. 99 %
pH (5 %; H₂O; 20°C) 5.0 - 6.0
Chloride max. 0.002 %
Nitrate max. 0.002 %
As max. 0.0005 %
Ca max. 0.002 %

Fe max. 0.001 %
K max. 0.002 %
Na max. 0.002 %
Pb max. 0.001 %

Order-No.	Quantity
A1357,1000	1 kg
A1357,10006	6 x 1 kg
A1357,5000	5 kg
A1357,9010	10 kg
A1357,9025	25 kg

Ammonium sulfate - Solution 10 % pure

C

HS-No.: 38220000

Storage: RT

Composition:

Ammonium sulfate (A1357) . 100 g/L

Specification:

Assay min. 10 %
pH (H₂O) 4.5 - 6.0 (20°C)
Chloride max. 0.002 %
Fe max. 0.001 %

Pb max. 0.001 %
Zn max. 0.001 %

Order-No.	Quantity
A6580,1000	1 L
A6580,5000	5 L
A6580,9010	10 L

Ammonium thiocyanate

Ammonium isothiocyanate, NH₄SCN

H₄CN₂S
M = 76.12 g/mol
CAS-No.: 1762-95-4
HS-No.: 28429080
EC-No.: 217-175-6

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
Warning
EUH032-H412-H302-H312-H332
P273-P302+P352



Melting point 150°C (dec.)
Solubility (20°C) 1600 g/L (H₂O)

Ammonium thiocyanate BioChemica

B

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Solubility (10 %; H₂O) clear, colorless

pH (1 M; H₂O; 25°C) 4.0 - 5.5
Chloride max. 0.005 %
Sulfate max. 0.005 %

Order-No.	Quantity
A3020,0100	100 g
A3020,0500	500 g
A3020,1000	1 kg

Ammonium thiocyanate p. A.

C

Specification:

Assay (titr.)	min. 99 %	Sulfide	max. 0.001 %
Iodine consum. subst.	max. 0.02 %	Cu	max. 0.0005 %
Residue on ignition	max. 0.025 %	Fe	max. 0.0001 %
pH (5 %; H ₂ O)	4.8 - 5.8 (20°C)	Pb	max. 0.0005 %
Chloride	max. 0.005 %		
Sulfate	max. 0.005 %		

Order-No.**Quantity**

A3847,0250	250 g
A3847,0500	500 g
A3847,1000	1 kg
A3847,10006	6 x 1 kg
A3847,5000	5 kg

Ammonium thiocyanate pure

C

Specification:

Assay (titr.)	min. 98 %	Fe	max. 0.0005 %
Identity	complies		
Residue on ignition	max. 0.05 %		
Chloride	max. 0.01 %		
Sulfate	max. 0.02 %		
Sulfide	max. 0.005 %		

Order-No.**Quantity**

A3298,0500	500 g
A3298,1000	1 kg
A3298,10006	6 x 1 kg
A3298,5000	5 kg
A3298,9010	10 kg

Ammonium thiocyanate - Solutions

Aqueous solution

HS-No.: 38220000

Storage: RT

Ammonium thiocyanate - Solution 12 % p. A.

C

Composition:

Ammonium thiocyanate ... 120 g/L

Specification:

Density (d18°C/4°C)	1.026
Sulfate	max. 0.005 %
Chloride	max. 0.005 %

Fe	max. 0.0001 %
Pb	max. 0.0005 %

Order-No.**Quantity**

A0920,0250	250 ml
A0920,1000	1 L

Ammonium thiocyanate - Solution 6 % pure

C

Composition:

Ammonium thiocyanate ... 60 g/L

Specification:

Density (d18°C/4°C)	1.013
Sulfate	max. 0.02 %
Chloride	max. 0.01 %

Fe	max. 0.0005 %

Order-No.**Quantity**

A0931,1000	1 L
A0931,5000	5 L

Ammonium thiocyanate - Standard volumetric solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: nwg

Ammonium thiocyanate - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits ... 0.998 - 1.002

Order-No.**Quantity**

A5104,0500	500 ml
A5104,1000	1 L
A5104,10006	6 x 1 L

Ammonium thiocyanate - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

Specification:

Factor limits ... 0.998 - 1.002

Order-No.**Quantity**

A1298,0500	500 ml
A1298,1000	1 L

Ammonium thiosulfate pure

C

(NH₄)₂S₂O₃, Ammonium hyposulfite

H₃N₂O₃S₂
 M = 148.21 g/mol
 CAS-No.: 7783-18-8
 HS-No.: 28323000
 EC-No.: 231-982-0

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Decomposition 150°C

Specification:

Assay (titr.)	88 - 92 %
pH (10 %; H ₂ O)	6.0 - 7.0
Sodium sulfite	max. 0.001 %
Sodium thiosulfate	8 - 12 %
Loss on drying	max. 0.3 %

Fe	max. 0.001 %

Order-No.**Quantity**

A7243,1000	1 kg
A7243,10006	6 x 1 kg
A7243,5000	5 kg
A7243,9010	10 kg

Amoxicillin trihydrate *BioChemica*

B

<i>p</i> -Hydroxyampicillin, Amoxicillin trihydrate, α -Amino- <i>p</i> -hydroxybenzylpenicillin	$C_{16}H_{19}N_3O_5S \cdot 3H_2O$ $M = 419.50$ g/mol CAS-No.: 61336-70-7 HS-No.: 29411000 EC-No.: 248-003-8	Storage: 2-8°C protected from light	WGK: 2 Danger H334-H317 P280-P302+P352-P330-P301+P310	

Specification: Assay (titr.) min. 97 % Solubility (1 %; H ₂ O) clear	Order-No. A7680,0001 A7680,0005 A7680,0025	Quantity 1 g 5 g 25 g

Comment:Amoxicillin is the α -Amino-*p*-hydroxybenzylpenicillin and member of the β -Lactam antibiotics like Ampicillin. Amoxicillin is active against gram-positive and some gram-negative bacteria, such as enterobacteria. Its activity is comparable to Ampicillin and it is not resistant to Penicillinase as well.
Solubility and Stability: The trihydrate of Amoxicillin is soluble in water (4 mg/ml), methanol (7.5 mg/ml) and ethanol (3.4 mg/ml) (Merck Index 13. ed.; page 96; Monograph 582). Chemically, it is more stable than Ampicillin.

Amoxicillin trihydrate see Amoxicillin trihydrate *BioChemica* Page 105
AMP buffer see 2-Amino-2-methyl-1-propanol Buffer grade Page 89
AMPD buffer see 2-Amino-2-methyl-1,3-propanediol Buffer grade Page 88
AMP disodium salt dihydrate see Adenosine 5'-monophosphoric acid disodium salt *BioChemica* Page 68

Ampholyte

Carrier-Ampholyte	HS-No.: 38220000	Storage: 2-8°C

Ampholyte Electrophoresis grade, pH 2-4

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3444,0010 A3444,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 2-9

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3937,0010 A3937,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 2-11

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3456,0010 A3456,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 3-4

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3960,0010 A3960,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 3-5

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3929,0010 A3929,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 3-6

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3462,0010 A3462,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 3-7

B

<i>aqueous, sterile solutions</i> (40 %)	Order-No. A3454,0010 A3454,0025	Quantity 10 ml 25 ml

Ampholyte Electrophoresis grade, pH 3-10

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3433,0010	10 ml
A3433,0025	25 ml

Ampholyte Electrophoresis grade, pH 3-10 (2D)

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3438,0010	10 ml
A3438,0025	25 ml

Ampholyte, pH 3-10T technical grade

B

non sterile

Order-No.	Quantity
A3407,0025	25 ml
A3407,0100	100 ml

Comment: Ampholytes are used for isoelectric focussing. Their special advantages are:

High buffer capacity and solubility at the pI → sharp separation
 Good and uniform conductivity → no burn through
 Linear pH gradient → proportional protein distribution
 Low molecular weight → fast fixation, staining and destaining
 You will receive a users instruction with all deliveries!

Ampholyte Electrophoresis grade, pH 4-5

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3449,0010	10 ml
A3449,0025	25 ml

Ampholyte Electrophoresis grade, pH 4-6

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3458,0010	10 ml
A3458,0025	25 ml

Ampholyte Electrophoresis grade, Maize Standard

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3420,0010	10 ml
A3420,0025	25 ml

Ampholyte Electrophoresis grade, pH 4-7

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3425,0010	10 ml
A3425,0025	25 ml

Ampholyte Electrophoresis grade, pH 5-6

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3940,0010	10 ml
A3940,0025	25 ml

Ampholyte Electrophoresis grade, pH 5-7

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3428,0010	10 ml
A3428,0025	25 ml

Ampholyte Electrophoresis grade, pH 5-7 PGM

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3436,0010	10 ml
A3436,0025	25 ml

Ampholyte Electrophoresis grade, pH 5-8

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3957,0010	10 ml
A3957,0025	25 ml

Ampholyte Electrophoresis grade, pH 5-9

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3413,0010	10 ml
A3413,0025	25 ml

Ampholyte Electrophoresis grade, pH 6-7

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3416,0010	10 ml
A3416,0025	25 ml

Ampholyte Electrophoresis grade, pH 6-8

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3423,0010	10 ml
A3423,0025	25 ml

Ampholyte Electrophoresis grade, pH 6-9

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3446,0010	10 ml
A3446,0025	25 ml

Ampholyte Electrophoresis grade, pH 7-9

B

aqueous, sterile solutions (40 %)

Order-No.	Quantity
A3400,0010	10 ml
A3400,0025	25 ml

Amphotericin B

from *Streptomyces* ssp.

C₄₇H₇₃NO₁₇
M = 924.10 g/mol
CAS-No.: 1397-89-3
HS-No.: 29419000
EC-No.: 215-742-2

Storage: 2-8°C
protected from light

WGK: 3
Warning
H319-H335-H315
P305+P351+P338-P280



Amphotericin B BioChemica

B

Specification:

Activity	 min. 750 I.U./mg	Amphotericin A	 max. 15 %
Solubility	 clear, orange (10 %, DMF/1 M HCl 3 : 1)	Loss on drying	 max. 5 %
Sulfated ash	 max. 3 %		
UV spectrum	 complies		

Order-No.	Quantity
A1907,0050	50 mg
A1907,0250	250 mg
A1907,0500	500 mg
A1907,0001	1 g

Literature: (1) Holz, R.W. (1979) *Antibiotics V*, p. 313 (F.E.Hahn ed.) Springer-Verlag Berlin, Heidelberg, New York. Polyene antibiotics: Nystatin, Amphotericin B and Filipin.

(2) Medoff, G. et al. (1983) *Ann. Rev. Pharmacol. Toxicol.* **23**, 303-330

(3) Charak, B.S. et al. (1994) *Br. J. Haematol.* **88**, 693-698

Antifungal agents useful in therapy of systemic fungal infections.

Protecting effect of G-CSF against Amphotericin B-induced Myelosuppression *in vitro*.

Comment: The antibiotic amphotericin B was isolated from *Streptomyces nodosus*. It belongs to the macrocyclic lactones and its action is fungistatic. Amphotericin B binds to sterols (e. g. cholesterol, cholestanol) with planar structure and disturbs the membrane permeability. Ions, like K⁺, Na⁺ and H⁺ or other low molecular weight substances (e. g. amino acids, sugars, nucleotides) may cross the membrane (1). The cytotoxic concentration is approx. 30 µg/ml and the recommended working concentration at 2.5 µg/ml.

Stability: Amphotericin B is of low solubility in water at pH values from 6 - 7. At the pH 2 and 11, respectively, only 100 µg/ml can be dissolved. In DMSO, it is soluble at concentrations of 30 - 40 mg/ml, in propylene glycol 2 - 5 mg/ml, in acidified dimethyl formamide and acidic or alkaline methanol 60 - 80 mg/ml and 2 - 5 mg/ml, respectively. Store the dry substance protected from light and under argon. Under these conditions, the antibiotic is stable for more than 6 months. Aqueous solutions with a pH value of 5 - 7 are stable for 40 - 90 days, if stored at +4°C. Perform longer experiments protected from light, where possible, even if exposure to light for up to 8 hours has no negative influence. Amphotericin B is heat labile, but at 37°C it is stable for 3 days, nevertheless.

Amphotericin B pure Ph. Eur.

C

Specification:

Activity (dried subst.)	 min. 750 IU/mg	Related subst.	 complies
Bacterial endotoxins	 max. 1.0 I.U./mg	Sulfated ash	 max. 3.0 %
Identity	 complies		
Loss on drying (60°C)	 max. 5.0 %		

Order-No.	Quantity
A7009,0050	50 mg
A7009,0250	250 mg
A7009,0001	1 g

Ampicillin sodium salt

Melting point	212 - 215°C (dec.)	$C_{16}H_{18}N_3NaO_4S$ $M = 371.39$ g/mol CAS-No.: 69-52-3 HS-No.: 29411000 EC-No.: 200-708-1	Storage: RT LGK: 10 - 13	Danger H334-H317 P342+P311-P280-P261	

Ampicillin sodium salt BioChemica

B

Specification:		Order-No.	Quantity
Assay (titr.)	 min. 98 %	A0839,0010	10 g
α 20°C/D; 0.2 %, H ₂ O	 +258° - +287°	A0839,0025	25 g
Heavy metals	 max. 0.002 %	A0839,0100	100 g
pH (10 %; H ₂ O; 20°C)	 8.0 - 10.0		
Literature: (1) Nguyen-Distèche, M. et al. (1974) <i>Eur. J. Biochem.</i> 41 , 457-463		Sensitivity to Ampicillin and Cephalothin of enzymes involved in wall peptide crosslinking in <i>E. coli</i> K12, strain 44.	
Comment: Ampicillin is a half-synthetic penicillin (β -lactam antibiotic), known to interfere with the wall peptide crosslinking in growing bacteria. It inhibits the enzyme activity of transpeptidase, carboxypeptidase and endopeptidase. Its action is bactericidal and the pH optimum for its action ranges from pH 5.5 - 6. At this pH value, its activity against <i>E. coli</i> is 10x higher in comparison to pH 8. Ampicillin sodium salt is readily watersoluble and stock solutions are prepared at concentrations of 50 mg/ml, stored at -20°C in aliquots. The working concentration in LB-ampicillin plates, LB or TB medium is 50 μ g/ml (dilution 1 : 1000). Stability: The activity of a 10 % aqueous solution of ampicillin, if stored at +4°C (pH 7), is reduced by 15 % after 24 hours, 33 % after 48 hours and 65 % after 7 days. At room temperature, the corresponding loss of activity is 28 %, 45 % and 81 %, respectively.			

Ampicillin sodium salt pure Ph. Eur.

C

Specification:		Order-No.	Quantity
Assay	 91.0 - 102.0 %	A6352,0025	25 g
α 20°C/D; 0.25 %, Potassium hydrogen phthalate sol. 4 g/L	+258° - +287°	A6352,0100	100 g
Appearance of solution	 complies	A6352,0250	250 g
Bacterial endotoxins	 max. 0.15 I.U./mg		
Heavy metals (as Pb)	 max. 0.002 %		
Identity	 complies		
Related subst.	 complies		
pH (10 %; H_2O)	 8.0 - 10.0		
2-Ethylhexanoic acid	 max. 0.8 %		
Dichloromethane (GC)	 max. 0.2 % (m/m)		
N,N-Dimethylaniline	 max. 0.002 %		
Water (K.F.)	 max. 2 %		

Ampicillin trihydrate Molecular biology grade

B

<i>p</i> -Hydroxyampicillin, D(-)- α -Aminobenzylpenicillin	$C_{16}H_{19}N_3O_4S \cdot 3H_2O$ $M = 403.45$ g/mol CAS-No.: 7177-48-2 HS-No.: 29411000 EC-No.: 200-709-7	Storage: 2-8°C	WGK: 2 Danger H317-H335-H315-H334-H319 P280-P305+P351+P338-P261-P342+P311	 

Specification:		Order-No.	Quantity
Assay (titr.)	 min. 96 %	A7492,0010	10 g
α 20°C/D; 0.25 %, H_2O	+280° - +305°	A7492,0025	25 g
Loss on drying	 12.0 - 15.0 %	A7492,0100	100 g
pH (0.25 %; H_2O)	 3.5 - 5.5		

AMP-Na₂ see Adenosine 5'-monophosphoric acid disodium salt BioChemica Page 68

AMPSO Buffer grade

B

<i>N</i> -(1,1-Dimethyl-2-hydroxyethyl)-3-amino-2-hydroxypropanesulfonic acid	$C_7H_{17}NO_5S$ $M = 227.28$ g/mol CAS-No.: 68399-79-1 HS-No.: 29221985 EC-No.: 269-991-7	Storage: RT
Melting point	215 - 225°C	
Useful pH range	pH 8.3 - 9.7	
pK _a (20°C)	9.1	

Specification:		Order-No.	Quantity
Assay (titr.)	 min. 99 %	A1075,0025	25 g
Heavy metals (as Pb)	 max. 0.001 %	A1075,0100	100 g
Loss on drying	 max. 0.5 %	A1075,0250	250 g
A (1 cm/0.1 M in H_2O)	260 nm max. 0.06	A1075,0500	500 g
	280 nm max. 0.05		

Literature: (1) Szewczyk, B. & Kozłof, L.M. (1985) *Anal. Biochem.* **150**, 403-407

A method for the efficient blotting of strongly basic proteins from SDS-polyacrylamide gels to nitrocellulose.

Comment: The most common buffer for the blotting of proteins to nitrocellulose is the Tris-Glycine buffer (pH 8.3). The transfer of strongly basic proteins is very poor (~20 %). The use of more alkaline transfer buffers (e. g. 25 mM CAPSO, pH 10.0 with 20 % Ethanol or 25 mM AMPSO, pH 9.5) allows for the almost complete transfer of strongly basic proteins from gels to nitrocellulose without lowering the transfer efficiency for other proteins.

Amygdalose see β -D-Gentiobiose Page 372

***n*-Amyl alcohol**

Boiling point 138°C
Melting point -79°C
Solubility (20°C) 27 g/L (H₂O)
n 20°C/D 1.4100

C₅H₁₂O
M = 88.15 g/mol
CAS-No.: 71-41-0
HS-No.: 29051900
EC-No.: 200-752-1

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1105
WGK: 1
Warning
H315-H226-H332-H335
P302+P352



***n*-Amyl alcohol p. A.**

C

Specification:

Assay (HPLC) min. 99 %
Loss on drying max. 0.1 %
Al max. 0.00005 %
Ba max. 0.00001 %
Ca max. 0.00005 %
Cd max. 0.00001 %

Co max. 0.00001 %
Cr max. 0.00001 %
Fe max. 0.00001 %
Mg max. 0.00001 %
Mn max. 0.00001 %
Na max. 0.00002 %

Ni max. 0.00001 %
Pb max. 0.00001 %
Sn max. 0.00001 %
Zn max. 0.00001 %

Order-No.	Quantity
A0754,0500	500 ml
A0754,1000	1 L
A0754,10006	6 x 1 L
A0754,2500	2.5 L
A0754,25004	4 x 2,5 L

***n*-Amyl alcohol pure**

C

Specification:

Assay (HPLC) min. 99 %
Loss on drying max. 0.3 %
Cr max. 0.0005 %
Fe max. 0.0005 %
Ni max. 0.0005 %
Pb max. 0.0005 %

Zn max. 0.0005 %

Order-No.	Quantity
A3605,0500	500 ml
A3605,1000	1 L
A3605,10006	6 x 1 L
A3605,2500	2.5 L
A3605,25004	4 x 2,5 L

***n*-Amyl alcohol for synthesis**

C

Specification:

Assay (HPLC) min. 98 %
Loss on drying max. 0.5 %

Order-No.	Quantity
A2316,1000	1 L
A2316,10006	6 x 1 L
A2316,2500	2.5 L
A2316,25004	4 x 2,5 L

α-Amylase from Pancreas, human

B

1,4-α-D-Glucan-glucanohydrolase
[EC 3.2.1.1]
lyophilized from 100 mM Tris · HCl, 150 mM NaCl, 1 mM CaCl₂, 1 mM Benzamidine, 1 mM AEBSE · HCl; pH 7.5
from human pancreas

CAS-No.: 9000-90-2
HS-No.: 35079090

Storage: 2-8°C

Danger
H334
P262-P304+P341-P260



Specification:

Activity (37°C) approx. 400 U/ml
Protein min. 1 mg/ml

Order-No.	Quantity
A6949,0010	10 U
A6949,0100	100 U

Comment: Unit Definition: One unit will catalyze the hydrolysis of one micromole of maltopentaose, which through coupled reactions results in the formation of 5 micromoles of glucose 6-phosphate per minute at 37°C. Measured at 340 nm as an equimolar amount of NADH produced by a coupled reaction.

CERTIFICATION: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

α-Amylase from Saliva, human

B

1,4-α-D-Glucan-glucanohydrolase
[EC 3.2.1.1]
lyophilized from 150 mM NaCl, 20 mM Tris, 1 mM CaCl₂, pH 7.2
from human saliva

CAS-No.: 9000-90-2
HS-No.: 35079090

Storage: -20°C

Danger
H334
P304+P341-P262-P260



Specification:

Assay Control Grade
Activity (37°C) typ. min. 100 U/mg
Appearance off-white powder

Order-No.	Quantity
A6948,0500	500 U
A6948,5000	5000 U

Comment: Unit Definition: One unit will catalyze the hydrolysis of one micromole of maltopentaose, which through coupled reactions results in the formation of 5 micromoles of glucose 6-phosphate per minute at 37°C. Measured at 340 nm as an equimolar amount of NADH produced by a coupled reaction.

CERTIFICATION: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Amylum soluble see Starch Page 772

Aneurine hydrochloride see Thiamine hydrochloride Page 811

Aneurine monophosphate chloride see Thiamine monophosphate chloride dihydrate BioChemica Page 811

Aneurinepyrophosphoric acid see Thiamine pyrophosphate Page 811

rHu Angiogenin-1 bioconfident grade



B

Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 16.4 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin max. 0.05 EU/µg
Pyrogen test complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8922,0010	10 µg
A8922,0050	50 µg
A8922,0100	100 µg
A8922,1000	1 mg

Comment: Recombinant human Angiogenin-1 contains 124 amino acids and a 16 amino acid histidine-based tag for a total length of 140 amino acids and has a predicted molecular mass of 16.4 kDa including his-tag. The recombinant protein migrates with an apparent molecular mass of 21 kDa in SDS-PAGE.

Angiotensin forming enzyme see Renin, human Page 684
Anguidin see Diacetoxyscirpenol *BioChemica* Page 272
Anguidine see Diacetoxyscirpenol *BioChemica* Page 272
Aniline blue water-soluble see Acid blue 93 (C.I. 42780) Page 50
p-Anilinesulfonic acid see Sulfanilic acid for synthesis Page 778

8-Anilidonaphthalene-1-sulfonic acid ammonium salt *BioChemica*

B

ANS-NH₄, Ammonium-8-anilino-1-naphthalene sulfonate

C₁₆H₁₆N₂O₃S
M = 316.37g/mol
CAS-No.: 28836-03-5
HS-No.: 29214900
EC-No.: 249-265-6

Storage: RT
LGK: 10-13
Disposal: 3

WGK: 3
Warning
H319-H335-H315
P305+P351+P338



Specification:

Assay min. 98 %
UV spectrum complies
¹H-NMR spectrum complies
S_{416 nm} (0.3 % in H₂O) max. 0.06
Solubility (1 %; H₂O) clear
Water (K.F.) max. 5 %

Order-No.	Quantity
A5350,0005	5 g
A5350,0025	25 g
A5350,0100	100 g

3-(4-Anilinophenylazo)-benzenesulfonic acid sodium salt see Metanil yellow Page 532

Anisomycin *BioChemica*

B

(2R,3S,4S)-2-(4-Methoxybenzyl)-3,4-pyrolidinediol-3-acetate, Flagecidin
from *Streptomyces griseolus*

C₁₄H₁₉NO₄
M = 265.30 g/mol
CAS-No.: 22862-76-6
HS-No.: 29419000
EC-No.: 245-269-7

Storage: 2-8°C
protected from light

Class / PG: 6.1/III
UN3462
Danger
H301
P301+P310



Melting point 139 - 141°C

Specification:

Assay min. 98 %
Elemental analysis result must conform

Order-No.	Quantity
A7650,0005	5 mg
A7650,0025	25 mg

- Literature:** (1) Sobin, B.A. & Tanner, F.W. (1954) *J. Am. Chem. Soc.* **76**, 4053
(2) Grollman, A.P. (1967) *J. Biol. Chem.* **242**, 3226-3233
(3) Kardalinos, E. et al. (1994) *Mol. Cell. Biol.* **14** 1066-1074
(4) Chen, D. et al. (1996) *J. Biol. Chem.* **271**, 6328-6332
(5) Hazzalin, C.A. et al. (1998) *Mol. Cell. Biol.* **18**, 1844-1854
(6) Cano, E. et al. (1994) *Mol. Cell. Biol.* **14**, 7352-7362
(7) Chung, K.C. et al. (2000) *Eur. J. Biochem.* **267**, 4676-4684

Anisomycin, A New Anti-Protozoan Antibiotic.
Inhibitors of Protein Biosynthesis.
Anisomycin and Rapamycin define an Area Upstream of p70/S6^{96k} Containing a Bifurcation to Histone H3-HMG-Like Protein Phosphorylation and *c-fos*-*c-jun* Induction. SOS Phosphorylation and Disassociation of the Grb2-SOS Complex by the ERK and JNK Signaling Pathways.
Anisomycin Selectively Desensitizes Signalling Components Involved in Stress Kinase Activation and *fos* and *jun* Induction.
Anisomycin-Activated Protein Kinases p45 and p55 but Not Mitogen-Activated Protein Kinases ERK-1 and -2 Are Implicated in the Induction of *c-fos* and *c-jun*.
Expression of immediate early gene *pip92* during anisomycin-induced cell death is mediated by the JNK- and p38-dependent activation of Elk-1.

Comment: Anisomycin is an antibiotic produced by *Streptomyces griseolus* (1), active against protozoa but inactive against bacteria. Anisomycin inhibits protein synthesis by inhibiting peptidyl transferase (blocking of peptide bond formation) and to a lesser extend DNA synthesis (2). Anisomycin is widely used as a potent activator of kinase cascades in mammalian cells. It can activate stress-activated protein kinases, MAP kinase and other signal transduction pathways, leading to the induction of e.g. *c-fos* and *c-jun* (3-6). Induction of apoptosis was described as well (7).

Stability and solubility: Crystalline anisomycin is extremely stable. Aqueous solutions are stable over a wide pH range at room temperature. The free base of anisomycin is moderately soluble in water, but soluble in lower alcohols and DMSO. Stock solutions can be prepared at a concentration of 100 µg/ml in DMSO and stored at +4°C. The working concentration may vary depending on the application from 50 ng/ml to 1 µg/ml, but higher concentrations are described as well (10 to 50 µg/ml ref. 3,4).

ANS-NH₄ see 8-Anilidonaphthalene-1-sulfonic acid ammonium salt *BioChemica* Page 110
Antibiotic 69895 A see Chromomycin A3 *BioChemica* Page 211
Antibiotic A300 see Trichostatin A *BioChemica* Page 830
Antibiotic AM-2282 see Staurosporine *BioChemica* Page 773
Antibiotic AY 22989 see Rapamycin *BioChemica* Page 683
Antibiotic B 599 see Chromomycin A3 *BioChemica* Page 211
Antibiotic G418 see G418 disulfate *BioChemica* Page 366
Antibiotic G418 - Solution see G418 disulfate - Solution, sterile Page 367
Antibiotic K178 see Nigericin sodium salt *BioChemica* Page 567
Antibiotic U-22324 see Alamethicin *BioChemica* Page 73
Antibody dilution buffer (detergent-free) see Immunoassay Buffer Page 446

Antibody dilution buffer (with detergent) see Immunoassay Buffer Page 446

Antibody stabilizer (PBS-based) see Immunoassay Buffer Page 446

Antibody Stabilizer (Tris-based) see Immunoassay Buffer Page 446

Antichlor see Sodium thiosulfate anhydrous Page 755

α_1 -Antichymotrypsin, human

B

α_1 -ACT
reconstitution: use of deionized water is recommended from human serum

$M = 68,000$ daltons
CAS-No.: 141176-92-3
HS-No.: 30021095

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A6946,0100	100 µg
A6946,0001	1 mg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Antifade

B

HS-No.: 38220000 Storage: -20°C

Composition:

DABCO 2 %
Glycerol 90 %
PBS 1X

Order-No.	Quantity
A4619,00005	0.5 ml
A4619,0001	1 ml

Antimycin see Citrinin *BioChemica* Page 215

Antipain dihydrochloride *BioChemica*

B

$C_{27}H_{44}N_{10}O_6 \cdot 2HCl$
 $M = 677.63$ g/mol
CAS-No.: 37682-72-7
HS-No.: 29419000

Storage: -20°C

Specification:

Inhibitory activity (Trypsin, L-BAPA)
..... > 30 U/mg (pH 7.8,
25°C)

Order-No.	Quantity
A2129,0005	5 mg
A2129,0010	10 mg
A2129,0025	25 mg

Literature: (1) Umezawa, S. *et al.* (1972) *J. Antibiotics* **25**, 267-270
(2) Ikezawa, H. *et al.* (1972) *J. Antibiotics* **25**, 738-740
(3) Umezawa, H. (1976) *Methods Enzymol.* **45**, 678-695

Structure of Antipain.
Effect of Antipain on lysosomal Peptide-Hydrolases from Swine liver.
Structures and activities of protease inhibitors of microbial origin.

Comment: Antipain was isolated from different actinomycetes (e. g. *Streptomyces michigaensis*, *Streptomyces yokosukaensis*). It is an inhibitor of trypsin-like proteases (e. g. trypsin, papain, cathepsin B; ref. 2, 3). Cathepsin A, a carboxypeptidase, is inhibited too, which is not true for other inhibitors from actinomycetes (2). The name is derived from anti-papain. The working concentration in the commonly used inhibitor cocktails ranges from 10 - 50 µg/ml. A stock solution can be prepared in water, DMSO or methanol at concentrations of 10 mg/ml.

Antirhinin see Cyanidin-3-rutinoside HPLC grade Page 249

α_1 -Antitrypsin, human

B

α_1 -Proteinase Inhibitor
lyophilized from 20 mM sodium bicarbonate. May contain traces of buffer salts.
from human serum

CAS-No.: 9041-92-3
HS-No.: 30021095

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 95 %
Protein min. 1 mg/ml dispensing solution

Order-No.	Quantity
A6936,0100	100 µg
A6936,0001	1 mg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

(+)-Aphidicolin BioChemica

B

from *Nigrospora oryzae*
 $C_{20}H_{34}O_4$
 $M = 338.48$ g/mol

CAS-No.: 38966-21-1

HS-No.: 29061900

Storage: 2-8°C

protected from light

Melting point 226 - 233°C

Specification:

Assay (TLC) min. 98 %

Solubility (10 mg/ml MeOH) clear, colorless

Order-No.
A7633,0001
A7633,0005
Quantity

1 mg

5 mg

Literature: (1) Lönn, U. & Lönn, S. (1983) *Proc. Natl. Acad. Sci. U.S.A.* **80**, 3996-3999

(2) Arabshahi, L. *et al.* (1988) *Nucleic Acids Res.* **16**, 5107-5113

(3) Pedrali-Noy, G. & Spadari, S. (1980) *J. Virol.* **36**, 457-464

(4) Defilippes, F.M. (1984) *J. Virol.* **52**474-482

(5) Pedrali-Noy, G. *et al.* (1980) *Nucleic Acids Res.* **8**377-387

(6) Yin, D.X. & Schimke, R.T. (1995) *Cancer Res.* **55**4922-4928

Aphidicolin inhibits the synthesis and joining of short DNA fragments but not the union of 10 kb DNA replication intermediates.

Inhibition of DNA polymerase alpha by aphidicolin derivatives.

Mechanism of Inhibition of Herpes Simplex Virus and Vaccinia Virus DNA Polymerases.

Effect of Aphidicolin on Vaccinia Virus: Isolation of an Aphidicolin-Resistant Mutant.

Synchronization of HeLa cell cultures by inhibition of DNA polymerase alpha with aphidicolin.

BCL-2 Expression Delays Drug-induced Apoptosis but Does Not Increase Clonogenic

Survival after Drug Treatment in HeLa Cells.

Comment: Aphidicolin is a tetracyclic diterpene antibiotic, originally isolated from *Cephalosporium aphidicola* as (+)-form. It shows both antiviral and antimitotic activity and reversibly inhibits DNA polymerase α and δ (1,2), and viral DNA polymerases such as Vaccinia Virus and Herpes simplex Virus, respectively (3,4). It serves to synchronize cells, since it blocks the cell cycle at early S-phase (5). In addition, it induces apoptosis in HeLa cells (6).
Aphidicolin is soluble in DMSO, ethanol and methanol. Stock solutions (2 mg/ml) are stored at +4°C. The working concentration is 0.5 to 100 µg/ml.

Apicidin BioChemica

B

from *Fusarium sp.*
 $C_{34}H_{49}N_5O_6$
 $M = 623.78$ g/mol

CAS-No.: 183506-66-3

HS-No.: 29419000

Storage: -20°C

Shipment: wet ice

Class / PG: 6.1/II

UN2811

Danger

H330-H310-H300

P302+P350-P284-P280-P264-P310-

P260


Specification:

Assay approx. 98 %

Order-No.
A7861,0001
A7861,0005
Quantity

1 mg

5 mg

Comment: The cyclic peptide antibiotic Apicidin, commonly misspelled as *Apidicin*, is a mycotoxin with broad spectrum antiparasitic and antiprotozoan activity. It induces apoptosis and shows anti-angiogenic activity. The cell-permeable antibiotic inhibits histone deacetylase. Apicidin is soluble in ethanol, DMSO and dichloromethane. Is is slightly soluble in water and methanol.

Apigenin

4',5,7-Trihydroxyflavone
from *Chamomilla romana*
 $C_{15}H_{10}O_5$
 $M = 270.23$ g/mol

CAS-No.: 520-36-5

HS-No.: 29329900

Storage: 2-8°C

LGK: 10 - 13

Warning

H319-H335-H315

P261-P305+P351+P338



Apigenin HPLC Grade

B

Specification:

Assay min. 99 %

Order-No.
A3388,0020
A3388,0050
Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Apigenin pure

B

Specification:

Assay min. 97 %

Order-No.
A3641,0050
Quantity

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Apigenin-7-apiosylglucoside see Apiin HPLC grade Page 113

Apigenin-7-glucoside

Apigetrin, 7-Glucosylapigenin,
Cosmosiin
from *Chamomillae romana*

$C_{21}H_{20}O_{10}$
 $M = 432.38$ g/mol
CAS-No.: 578-74-5
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Apigenin-7-glucoside HPLC grade

B

Specification:

Assay min. 99 %

Order-No.	Quantity
A3432,0010	10 mg
A3432,0010DOC	10 mg
A3432,0020	20 mg
A3432,0020DOC	20 mg
A3432,0050	50 mg
A3432,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Apigenin-7-glucoside pure

B

Specification:

Assay min. 97 %

Order-No.	Quantity
A6744,0100	100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Apigenin-4'-methyl ether see Acacetin HPLC grade Page 38
Apigetrin see Apigenin-7-glucoside Page 113

Apiin HPLC grade

B

Apiosid, Apigenin-7-apiosylglucoside
from *Petroselinum crispum*

$C_{26}H_{28}O_{14}$
 $M = 564.50$ g/mol
CAS-No.: 26544-34-3
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A2053,0010	10 mg
A2053,0010DOC	10 mg
A2053,0020	20 mg
A2053,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Apiosid see Apiin HPLC grade Page 113

APMBT ultrapure

B

2-(p-Aminophenyl)-6-methylbenzothiazole, Dehydrothio-p-toluidine, 4-(6-Methylbenzothiazole-2-yl)anilin

$C_{14}H_{12}N_2S$
 $M = 240.33$ g/mol
CAS-No.: 92-36-4
HS-No.: 29342080
EC-No.: 202-150-4

Storage: RT

WGK: 1

Specification:

Assay min. 99 %
Loss on drying max. 0.5 %

Order-No.	Quantity
A7507,0010	10 mg
A7507,0025	25 mg
A7507,0050	50 mg

Literature: (1) Hampf, M. & Gossen, M. [2006] *Anal. Biochem.* **356**, 94-99

A protocol for combined Photinus and Renilla luciferase quantification compatible with protein assays.

APMSF hydrochloride *BioChemica*

B

4-Amidinophenylmethanesulfonyl
fluoride hydrochloride, *p*-APMSF

$C_8H_9FN_2O_2S \cdot HCl$
 $M = 252.69 \text{ g/mol}$
CAS-No.: 74938-88-8
HS-No.: 29252900

Storage: -20°C
LGK: 10 - 13

Melting point 190 - 192°C (dec.)

Specification:

Assay min. 97 %

Order-No.	Quantity
A0998,0010	10 mg
A0998,0050	50 mg
A0998,0100	100 mg

Comment: APMSF is an irreversible inhibitor of plasma serine proteases (trypsin-like proteases), which are specific for the basic amino acid side chains lysine and arginine. If applied in equimolar ratios of enzyme and inhibitor, immediate, complete inhibition of trypsin and thrombin occurs. At a 5 to 10fold excess of inhibitor, factor Xa (bovine) and plasmin (human) will be inhibited. Acetylcholine esterase is insensitive.

APMSF is a more potent inhibitor than PMSF. Its effective concentration is 10 - 50 µM or 2.5 µg/ml, respectively (e. g. ref. 2). Stock solutions are prepared in water at concentrations of 1 - 5 mM. It is stable, when stored aliquoted at -20°C.

AppliClear-Water

C

Water bath disinfection

HS-No.: 38220000

Storage: RT

- ◆ bio-degradable, non-toxic
- ◆ Concentrate for the prevention of growth of algae and moulds in water baths
- ◆ germ-killing effect on microorganisms
- ◆ 1 ml sufficient for 1 liter
- ◆ with color indicator (blue to colorless)

Order-No.	Quantity
A7004,0100	100 ml
A7004,0250	250 ml

Comment: AppliClear-Water is fully active, when the color indicator is blue. As soon as the color turns to colorless, refill with AppliClear-Water.

AppliClear (Xylene substitute)

C

Xylene substitute

CAS-No.: 64742-49-0
HS-No.: 27101121
EC-No.: 265-151-9

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN3295
WGK: 1
Danger
H304-H225-H336-H411
P273-P403+P235-P210-P301+P310-
P240-P331



Specification:

Boiling range 140 - 165°C
Density (15°C) 0.746 - 0.765 g/cm³
 n_{D20}^{20}/D 1.413 - 1.471
Aromates max. 0.01 %
Benzene max. 0.0002 %

Order-No.	Quantity
A4632,2500	2.5 L
A4632,5000	5 L
A4632,9010	10 L
A4632,9025	25 L

Comment: AppliClear (xylene substitute) is used instead of xylene in histological work. It may be used as an intermediate for paraffin embedding, in the preparation for mounting, or in dewaxing of paraffin sections. AppliClear evaporates considerably faster compared to xylene. Thus, the solution is particularly suitable for automated use. When slides are operated by hand a rapid mode of operation is necessary; jars or glass chambers should be kept covered whenever possible.

AppliFect



B

Transfection reagent *AppliFect*
Reagent for transfection of eukaryotic
cells with nucleic acids

HS-No.: 38220000

Storage: 2-8°C

- for transient or stable transfection
- no serum inhibition
- for adherent or suspension cells
- applicable for sensitive cells
- polycationic reagent
- sufficient for approx. 200 (6-well) transfections per ml

Order-No.	Quantity
A8886,00002	0.2 ml
A8886,0001	1 ml

AppliFect Insect



B

Transfection reagent optimized for insect cells
Reagent for transfection insect cells

HS-No.: 38220000

Storage: 2-8°C
Do NOT freeze!

- no inhibition by serum
- approx. 100 (6-well plates) or approx. 50 (60 mm plates) transfections per 1 ml
- very high expression rate especially in combination with the baculo virus expression system

Order-No.	Quantity
A9002,00005	0.5 ml
A9002,0001	1 ml

Comment: The transfection reagent for insect cells AppliFect Insect is a formulation of cationic lipids in water (concentration 1 mg/ml). The reagent is shipped at ambient temperature. Please refrigerate at 2-8°C upon arrival - do NOT freeze.

AppliFect LowTox



B

Transfection reagent for very sensitive cells
Reagent for transfection of very sensitive, eukaryotic cells.

HS-No.: 38220000

Storage: -20°C

- lowest toxicity
- approx. 500 (24-well) or approx. 200 (6-well) transfections per 1 ml
- very high expression rate

Order-No.	Quantity
A9027,0001	1 ml

Comment: AppliFect LowTox is an improvement of AppliFect. While developing this new reagent, the goal was to achieve highest compatibility with many cell lines and highest transfections efficiency. The transfected DNA is rapidly released within the cytosol from the lipoplex of cationic lipids and colipids. The reagent is supplied as a sterile, aqueous solution. AppliFect LowTox is shipped at ambient temperature. Please freeze upon arrival.

AppliFect SI



B

siRNA or miRNA transfection of eukaryotic cells

HS-No.: 38220000

Storage: -20°C

- high knock-down rates
- simple and rapid protocol
- lowest RNA concentration sufficient
- cationic lipid-colipid formulation in water
- sufficient for approx. 1000 (96-well) or 250 (24-well) transfections per 1 ml

Order-No.	Quantity
A8899,00002	0.2 ml
A8899,0001	1 ml

Comment: The AppliFect SI transfection reagent is suited for screening assays. There is no optimization of the RNA/AppliFect SI ratio required. It was optimized for extremely low toxicity and a high transfection efficiency of RNA. Results are obtained after 48 h only, allowing for two subsequent experiments per week. The reagent is shipped at ambient temperature. Freeze upon arrival. It is supplied with a 10X SI buffer.

AppliQUA™ MBH see Mixed-bed resin MBH 100 (AppliQUA™) Page 547

AppliSorb - Chemicals absorber

C

non flammable, non sensitive to impact, non explosive, no static electrification

HS-No.: 25120000
EC-No.: 310-127-6

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: nwg

Specification:
Granular material (<100 µm) max. 2 %

Order-No.	Quantity
A2292,0800	800 g
A2292,4000	4 kg

AppliXchange-G25 M



B

Size-exclusion chromatography matrix,
Gel Filtration Matrix Dextran-based

CAS-No.: 9041-35-4
HS-No.: 39139000

Storage: RT
Do not freeze!

◆ Properties

- Fractionation range (globular proteins) - M_r 1000 - 5000
- Fractionation range (dextrans) - M_r 100 - 5000
- pH stability 2.0 to 13.0
- Autoclavable at 121°C, pH 7 for 30 minutes

Specification:

Bead size (dry particle size) . 50 - 150 μ m
Bead size (wet) 82 - 260 μ m
Bed volume in H₂O 4 - 6 ml/g

Order-No.	Quantity
A8507,0100	100 g
A8507,0250	250 g
A8507,0500	500 g

Apramycin sulfate BioChemica

B

Nebramycin II

C₂₁H₄₁N₅O₁₁
M = 637.66 g/mol
CAS-No.: 65710-07-8
HS-No.: 29419000
EC-No.: 265-890-7

Storage: 2-8°C
protected from light

WGK: 3
Danger
H315-H360D-H319
P308+P313-P305+P351+P338-P201



Specification:

Assay (TLC) ca. 95 %
Solubility (1 %; H₂O) clear

Order-No.	Quantity
A7682,0001	1 g
A7682,0005	5 g
A7682,0025	25 g

- Literature:** (1) Perzynski, S. *et al.* (1979) *Eur. J. Biochem.* **99**, 623-628
(2) Woodcock, J. *et al.* (1991) *EMBO J.* **10**, 3099-3103
(3) Gehring, A.M. *et al.* (2001) *J. Bacteriol.* **183**, 5991-5996
(4) Healy, F.G. *et al.* (2002) *J. Bacteriol.* **184**, 2019-2029
(5) Zhang, X. *et al.* (2003) *Appl. Environ. Microbiol.* **69**, 2201-2208
(6) Kodani, S. *et al.* (2004) *Proc. Natl. Acad. Sci. USA* **101**, 11448-11453

Effects of Apramycin, a Novel Aminoglycoside Antibiotic on Bacterial Protein Synthesis. Interaction of antibiotics with A- and P-site-specific bases in 16S ribosomal RNA. RNA Polymerase Sigma Factor That Blocks Morphological Differentiation by *Streptomyces coelicolor*. Involvement of a Cytochrome P450 Monooxygenase in Thaxtomin A Biosynthesis. Interstrain Inhibition in the Sweet Potato Pathogen *Streptomyces ipomoeae*. The SapB morphogen is a lantibiotic-like peptide derived from the product of the developmental gene *ramS* in *Streptomyces coelicolor*.

Comment: Apramycin is an aminocyclitol antibiotic and component of the nebramycin complex of *Streptomyces tenebrarius*. It is similar to the aminoglycoside antibiotics, but differs that much that it is not inactivated by aminoglycoside-inactivating enzymes. Apramycin is a strong inhibitor of the bacterial protein synthesis. It inhibits the translocation step in protein synthesis and leads to translation errors (1,2). Therefore, Apramycin interacts with the A-site-specific bases of the 16S rRNA. Under normal conditions, tRNA-molecules would bind at this site (2). In practice, Apramycin sulfate is used as a selection marker in cloning. The working concentration is 25 or 50 μ g/ml (3-6). Stock solutions of the watersoluble substance are prepared as 1 mg/ml to 50 mg/ml and stored at -20°C.

Aprotinin BioChemica

B

Trasylo®
from bovine lung

C₂₈₄H₄₃₂N₈₄O₇₉S₇
M = 6511.52 g/mol
CAS-No.: 9087-70-1
HS-No.: 35040090

Storage: 2-8°C
LGK: 10 - 13

WGK: 1

Specification:

Assay (Protein) min. 90 %
Activity (KIU/mg) min. 6000
pH (1 %; H₂O) 5.0 - 7.5
Water (K.F.) max. 6 %

® registered trademark of Bayer AG

Order-No.	Quantity
A2132,0010	10 mg
A2132,0025	25 mg
A2132,0100	100 mg

- Literature:** (1) Kassell, B. & Laskowski, Sr., M. (1965) *Biochem. Biophys. Res. Com.* **20**, 463-468.
(2) Kassell, B. (1970) *Methods Enzymol.* **19**, 844-852
(3) Fritz, H. & Wunderer, G. (1983) *Drug Res.* **33**, 479-494

The basic Trypsin inhibitor of bovine pancreas: V. The disulfide linkages. Bovine Trypsin-Kallikrein inhibitor (Kunitz Inhibitor, Basic Pancreatic Trypsin Inhibitor, Polyvalent Inhibitor from Bovine Organs). Biochemistry and application of Aprotinin, the Kallikrein inhibitor from bovine organs.

Comment: Aprotinin was isolated independently from two laboratories and originally named *Bovine Pancreatic Trypsin Inhibitor* (BPTI) and *Trypsin-kallikrein Inhibitor* (TKI). It is a strongly basic protein (58 amino acids; ref. 1, 2). Aprotinin inhibits trypsin, chymotrypsin, kallikrein from different sources and plasmin. Its recommended working concentration is 2 - 10 μ g/ml (approx. 1 μ M). The working concentration given in ref. 3 (500 KIU/ml; approx. 10 μ M) seems to be very high.

Stability: Aprotinin may be stored indefinite at +4°C in lyophilized form. Dissolved in saline or buffer solutions (e. g. 10 mg/ml) at pH 5 - 8, it may be stored aliquoted at +4°C at least for one month or frozen at -20°C for several years. Thawed aliquots of the stock solutions should not be frozen again, because repeated freeze-thawing will lead to aggregation of the polypeptide aprotinin. Solutions with a pH value below 4 or above 9 should be used immediately. Protect from direct sunlight, UV light and reducing agents. It is stable in water, 70 % methanol, 70 % ethanol or 50 % acetone, too (2, 3).

Unit-Definition: One Trypsin Inhibitor Unit (TIU) will decrease the activity of 2 trypsin units by 50 %, where one trypsin unit will hydrolyze 1.0 μ mole $N\alpha$ -benzoyl-DL-arginine p-nitroanilide (BAPNA) per minute at pH 7.8 and 25°C. 1 TIU (Trypsin Inhibitor Unit) corresponds to approx. 1300 KIU (Kallikrein Inhibitor Units) and 1 TIU corresponds to one Ph. Eur. Unit.

APS see Ammonium persulfate Page 102

Aquabator-Clean™

B

Waterbath disinfection reagent

HS-No.: 38220000

Storage: 2-8°C
protected from light

Class / PG: 9/III
UN3082
Warning
H319-H410
P280-P302+P352-P305+P351+P338-
P273



- Disinfectant solution for ordinary water baths (not for CO₂-incubators!)
- 500X concentrated solution (Use 2 ml per 1 liter of water.)
- for the prevention of microbial growth in water baths

Order-No.	Quantity
A5225,0050	50 ml

◆ Aquabator-Clean™ is a registered trademark of AppliChem GmbH.

Comment: Aquabator-Clean™ is intended for disinfecting various kinds of water baths from bacteria and fungi. It is recommended to use 2 ml Aquabator-Clean™ for each liter of water in the bath, and to repeat the procedure every 1 - 2 weeks. After 4 - 6 weeks, the bath should be emptied and refilled with water containing Aquabator-Clean™. The active ingredient in Aquabator-Clean™ is safe to humans and does not cause any irritating effects to the skin when used in the recommended concentration. It is biodegradable.

D-Arabinose BioChemica

B

C₅H₁₀O₅
M = 150.13 g/mol
CAS-No.: 10323-20-3
HS-No.: 29400000
EC-No.: 233-708-5

Storage: RT

Specification:

Assay min. 99 %	Residue on ignition max. 0.1 %
α20°C/D; 10 %, H ₂ O; 24 h 104° ± 2°	Water (K.F.) max. 0.5 %
Heavy metals (as Pb) max. 0.001 %	

Order-No.	Quantity
A5025,0025	25 g
A5025,0100	100 g

Archiv see Emodin HPLC grade Page 326

L-Arginine base

L-2-Amino-5-guanidino-n-valerianic acid

C₆H₁₄N₄O₂
M = 174.20 g/mol
CAS-No.: 74-79-3
HS-No.: 29224985
EC-No.: 200-811-1

Storage: RT
LGK: 10 - 13

WGK: nwg
Warning
H319
P305+P351+P338



Melting point > 225°C (dec.)
Solubility (25°C) 150 g/L (H₂O)

L-Arginine base Cell culture grade

B

Specification:

Pyrogen test complies	Chloride max. 0.02 %
Assay (titr.) min. 99 %	Sulfate max. 0.02 %
α20°C/D; 8 %, 6 M HCl +26.3° - +27.7°	As max. 0.0001 %
Other amino acids max. 0.5 %	Fe max. 0.001 %
Ammonium max. 0.1 %	Pb max. 0.001 %

Order-No.	Quantity
A3653,0100	100 g
A3653,0250	250 g
A3653,0500	500 g
A3653,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Arginine base BioChemica

B

Specification:

Assay (titr.) min. 99 %	Chloride max. 0.02 %	A (1 cm/0.5 M in H ₂ O)
α20°C/D; 8 %, 6 M HCl +26.3° - +27.7°	Sulfate max. 0.02 %	260 nm max. 0.2
Heavy metals (as Pb) max. 0.001 %		280 nm max. 0.1
Other amino acids max. 0.5 %		
Ammonium max. 0.1 %		

Order-No.	Quantity
A3675,0100	100 g
A3675,0250	250 g
A3675,0500	500 g
A3675,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Arginine base pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %	Loss on drying max. 0.5 %	Sulfate max. 0.03 %
α20°C/D; 8 %, HCl 250 g/L +25.5° - +28.5°	Organic vol. impurities complies	Fe max. 0.001 %
α25°C/D; 8 %, 6 M HCl +26.3° - +27.7°	Sulfated ash max. 0.1 %	
Appearance of solution complies	Other amino acids max. 0.5 %	
Heavy metals (as Pb) max. 0.001 %	Ammonium max. 0.02 %	
Identity complies	Chloride max. 0.02 %	

Order-No.	Quantity
A1345,0100	100 g
A1345,0250	250 g
A1345,0500	500 g
A1345,1000	1 kg
A1345,10006	6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Arginine hydrochloride

L-2-Amino-5-guanidino-*n*-valerianic acid hydrochloride

$C_6H_{14}N_4O_2 \cdot HCl$
 $M = 210.66 \text{ g/mol}$
 CAS-No.: 1119-34-2
 HS-No.: 29224985
 EC-No.: 214-275-1

Storage: RT
 LGK: 10 - 13

WGK: nwg

Melting point 220°C (dec.)
 Solubility (25°C) 900 g/L (H₂O)

L-Arginine hydrochloride Cell culture grade

B

Specification:

Pyrogen test complies	Sulfate max. 0.02 %
Assay (titr.) min. 99 %	As max. 0.0001 %
α 20°C/D; 8 %, 6 M HCl +21.4° - +23.5°	Fe max. 0.001 %
Other amino acids max. 0.5 %	Pb max. 0.001 %
Ammonium max. 0.1 %	

Order-No.	Quantity
A3680,0100	100 g
A3680,0250	250 g
A3680,0500	500 g
A3680,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Arginine hydrochloride BioChemica

B

Specification:

Assay (titr.) min. 99 %	Sulfate max. 0.02 %	A (1 cm/0.1 M in H ₂ O)
α 20°C/D; 8 %, 6 M HCl +21.4° - +23.5°		260 nm max. 0.2
Heavy metals (as Pb) max. 0.001 %		280 nm max. 0.1
Ammonia max. 0.1 %		
Other amino acids max. 0.5 %		

Order-No.	Quantity
A3709,0100	100 g
A3709,0250	250 g
A3709,0500	500 g
A3709,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Arginine hydrochloride pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %	Loss on drying max. 0.2 %	Sulfate max. 0.03 %
α 20°C/D; 8 %, 6 M HCl +21.4° - +23.6°	Organic vol. impurities complies	Fe max. 0.001 %
α 20°C/D; 8 %, HCl 250 g/L +21.0° - +23.5°	Sulfated ash max. 0.1 %	
Appearance of solution complies	Other amino acids max. 0.5 %	
Heavy metals (as Pb) max. 0.001 %	Ammonium max. 0.02 %	
Identity complies	Chloride 16.5 - 17.1 %	

Order-No.	Quantity
A1700,0100	100 g
A1700,0250	250 g
A1700,0500	500 g
A1700,1000	1 kg
A1700,10006	6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

Aristolochic acid I

Aristolochin
 from *Aristolochia clematitis*

$C_{17}H_{11}NO_7$
 $M = 341.28 \text{ g/mol}$
 CAS-No.: 313-67-7
 HS-No.: 29349990

Storage: 2-8°C
 LGK: 10 - 13

Class / PG: 6.1/III
 UN1544
 Danger
 H335-H301-H340
 P280-P264-P301+P310-P270-
 P302+P352



Aristolochic acid I HPLC grade

B

Specification:

Assay min. 99 %

Order-No.	Quantity
A3687,0020	20 mg
A3687,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Aristolochic acid I pure

B

Specification:

Assay min. 96 %

Order-No.	Quantity
A3391,0250	250 mg
A3391,0500	500 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Aristolochic acid II

Noraristolochic acid
from *Aristolochia clematidis*

$C_{16}H_9NO_6$
 $M = 311.25$ g/mol
CAS-No.: 475-80-9
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Class / PG: 6.1/III
UN1544
Danger
H340-H335-H301
P280-P302+P352-P301+P310-P264-
P270



Aristolochic acid II HPLC grade

B

Specification:

Assay min. 99 %

Order-No.	Quantity
A3879,0020	20 mg
A3879,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Aristolochic acid II pure

B

Specification:

Assay min. 96 %

Order-No.	Quantity
A3774,0250	250 mg
A3774,0500	500 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Aristolochic acid - Mixture of I and II

B

Aristolochin
from *Aristolochia clematidis*

$C_{17}H_{11}NO_7$ and $C_{16}H_9NO_6$
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Class / PG: 6.1/III
UN1544
Danger
H335-H340-H301
P302+P352-P280-P270-P301+P310-
P264



Specification:

Assay min. 96 %

Order-No.	Quantity
A4508,0500	500 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Aristolochic acid sodium salt

B

mixture of isomers I and II from *Aristolochia clematidis*

CAS-No.: 10190-99-5
HS-No.: 38220000

Storage: 2-8°C
LGK: 10 - 13

Class / PG: 6.1/III
UN1544
Danger
H335-H301-H340
P301+P310-P270-P264-P280-
P302+P352



Specification:

Assay min. 96 %

Order-No.	Quantity
A4527,0250	250 mg
A4527,0500	500 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Aristolochin see Aristolochic acid I Page 118

ASAT see Glutamate Oxaloacetate Transaminase (GOT), human Page 379

Ascomycin BioChemica

B

Immunomycin, FK520
from *Streptomyces hygroscopicus* var.
ascomyceticus

$C_{43}H_{69}NO_{12}$
 $M = 792.01$ g/mol
CAS-No.: 104987-12-4
HS-No.: 29419000

Storage: -20°C
protected from light

Warning
H332-H302-H312
P280



Melting point 159 - 164°C
Solubility (10 mg/ml DMSO)
..... clear, colorless

Specification:

Assay min. 90 %

Order-No.	Quantity
A7759,0001	1 mg

Comment: Ascomycin is a 21-ethyl analog of FK506. The antibiotic is a potent immunosuppressant. It inhibits the allogenic T-lymphocyte proliferation. Ascomycin is an inhibitor of the Calcineurin phosphatase. It is soluble in DMSO, ethanol and methanol.

L-Ascorbat : oxygen oxidoreductase see Ascorbate oxidase from *Cucurbita spec.* Page 120

Ascorbate oxidase from *Cucurbita spec.*

B

L-Ascorbat : oxygen oxidoreductase
stabilized, freeze-dried
E.C. 1.10.3.3

$M = \sim 140000$ g/mol
CAS-No.: 9029-44-1
HS-No.: 35079090
EC-No.: 232-852-6

Storage: -20°C

Specification:

Activity min. 200 U/mg
Appearance light-blue powder
Catalase max. 0.2 %
Stabilizer Sucrose

Order-No.	Quantity
A3377,0250	250 U
A3377,1000	1000 U
A3377,5000	5000 U

Comment:One unit of activity is defined as that amount of enzyme which catalyses the oxidation of one micromole of L-ascorbic acid per minute at 25°C and pH 5.6.

L(+)-Ascorbic acid powdered

Vitamin C
 $C_6H_8O_6$
 $M = 176.13$ g/mol
CAS-No.: 50-81-7
HS-No.: 29362700
EC-No.: 200-066-2

Storage: RT
LGK: 10 - 13

WGK: 1

Melting point 192°C (dec.)
Solubility (20°C) 333 g/L (H₂O)

L(+)-Ascorbic acid powdered *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
 $\alpha 20^\circ\text{C/D; 10 \% , H}_2\text{O}$ +20.5° - +21.5°
Heavy metals (as Pb) max. 0.0005 %
Insoluble matter complies
pH (5 %; H₂O; 20°C) 2.2 - 2.5
Oxalic acid max. 0.2 %

Chloride max. 0.005 %
Sulfate max. 0.002 %

Order-No.	Quantity
A1052,0100	100 g
A1052,0250	250 g
A1052,0500	500 g
A1052,1000	1 kg
A1052,5000	5 kg

Literature:(1) Kanfer, J.N. & Spielvogel, C.H. (1973) *Biochim. Biophys. Acta* **327**, 405-411
(2) Omaye, S.T. et al. (1979) *Methods Enzymol.* **62**, 3-11
(3) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193
(4) Hager-Braun, C. et al. (1995) *Biochemistry* **34**, 9617-9624

The inhibition of β -N-acetylhexosaminidase by lactones.
Methods for the determination of ascorbic acid in animal cells, tissues and fluids.
Preparation of extracts from plants.
Stable photobleaching of P480 in *Chlorobium* reaction center preparations: presence of the 42-kDa bacteriochlorophyll a protein and a 17-kDa polypeptide.

Comment:An important function of ascorbic acid (vitamin C) in the organism is the protection of Fe²⁺ in oxygenases from the oxidation to Fe³⁺ or as a reducing agent in hydroxylation reactions, like the conversion of proline to hydroxyproline in collagen. Oxygen irreversibly oxidizes ascorbic acid in aqueous solution to L-diketogulonic acid and other biologically inactive substances.

For the preparation of plant cell and tissue extracts, high concentrations of reducing agents have to be added to the homogenisation buffers. Especially for the preparation of chloroplasts, the physiological reducing agents ascorbic acid and glutathione will be applied (3, 4). The ascorbate stock solution (100X) is composed of 50 mM HEPES-NaOH (pH 7.6) with 0.5 M ascorbate and stored at -20°C. The working concentration is 2 mM (4) to 5 mM (3) ascorbate.

L(+)-Ascorbic acid powdered, pure Ph. Eur., BP, USP, Food grade

C

Specification:

Assay (titr.) 99.0 - 100.5 %
 $\alpha 20^\circ\text{C/D; 10 \% , H}_2\text{O}$ +20.5° - +21.5°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on drying max. 0.1 %
Sulfated ash max. 0.05 %
Volatile org. impurities complies
pH (5 %; H₂O) 2.2 - 2.5 (20°C)

Impurity C (HPLC) max. 0.15 %
Impurity D (HPLC) max. 0.15 %
Largest unspecified impurity max. 0.10 %
Oxalic acid max. 0.2 %
Related substances impurities (total) max. 0.2 %
Chloride max. 0.005 %
Sulfate max. 0.002 %

As max. 0.0003 %
Cu max. 0.0005 %
Fe max. 0.0002 %
Hg max. 0.0001 %
Pb max. 0.0005 %

Order-No.	Quantity
A3604,0100	100 g
A3604,0250	250 g
A3604,0500	500 g
A3604,1000	1 kg
A3604,10006	6 x 1 kg
A3604,5000	5 kg
A3604,9010	10 kg

Ascorbic acid - Solution (40 g/L)

C

Aqueous solution
HS-No.: 38220000
Storage: RT
WGK: nwg

Composition:

Ascorbic acid 40 g/L

Specification:

Heavy metals (as Pb) max. 0.0005 %
Chloride max. 0.005 %
Sulfate max. 0.002 %

Order-No.	Quantity
A1167,0500	500 ml
A1167,1000	1 L
A1167,5000	5 L

L-Ascorbic acid calcium salt dihydrate see Calcium L-ascorbate dihydrate pure Ph. Eur. Page 177

L-Asparagine monohydrate

L-2-Aminosuccinic acid-4-amide

 $C_4H_8N_2O_3 \cdot H_2O$

Storage: RT

WGK: 1

Melting point 235°C

Solubility (25°C) 30 g/L (H₂O)

M = 150.14 g/mol

CAS-No.: 5794-13-8

HS-No.: 29241900

EC-No.: 200-735-9

LGK: 10 - 13

L-Asparagine monohydrate Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
α20°C/D; 10 %, 3 N HCl +33.7° - +36°
Other amino acids max. 0.5 %

Ammonium max. 0.1 %
Chloride max. 0.02 %
Sulfate max. 0.02 %
As max. 0.0001 %

Fe max. 0.001 %
Pb max. 0.001 %

Order-No.

A3669,0100

A3669,0500

A3669,1000

Quantity

100 g

500 g

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Asparagine monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
α20°C/D; 10 %, 3 N HCl +33.7° - +36°
Heavy metals (as Pb) max. 0.001 %
Other amino acids max. 0.5 %
Ammonium max. 0.1 %

Chloride max. 0.02 %
Sulfate max. 0.02 %

A (1 cm/0.1 M in HCl)
260 nm max. 0.2
280 nm max. 0.1

Order-No.

A3721,0100

A3721,0500

A3721,1000

Quantity

100 g

500 g

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Asparagine monohydrate pure Ph. Eur.

C

Specification:

Assay (titr.) 99.0 - 101.0 %
α20°C/D; 10 %, 3 N HCl +33.7° - +36.0°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on drying 10.5 - 12.5 %

Other amino acids complies
Sulfated ash max. 0.1 %
pH (2 %; H₂O) 4.0 - 6.0
Ammonium max. 0.1 %
Chloride max. 0.02 %
Sulfate max. 0.02 %

Fe max. 0.001 %

Order-No.

A1668,0100

A1668,0250

A1668,0500

A1668,1000

A1668,10006

Quantity

100 g

250 g

500 g

1 kg

6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

Aspartate Aminotransferase see Glutamate Oxaloacetate Transaminase (GOT), human Page 379

L-Aspartate : 2-Oxoglutarate Aminotransferase see Glutamate Oxaloacetate Transaminase (GOT), human Page 379

Aspartate Transaminase see Glutamate Oxaloacetate Transaminase (GOT), human Page 379

L-Aspartic acid

L-2-Aminosuccinic acid

 $C_4H_7NO_4$

Storage: RT

WGK: nwg

Melting point 270°C

Solubility (25°C) 5 g/L (H₂O)

M = 133.10 g/mol

CAS-No.: 56-84-8

HS-No.: 29224985

EC-No.: 200-291-6

LGK: 10 - 13

L-Aspartic acid Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
α20°C/D; 8 %, 6 M HCl +24° - +26°
Other amino acids max. 0.5 %

Ammonium max. 0.1 %
Chloride max. 0.02 %
Sulfate max. 0.02 %
As max. 0.0001 %

Fe max. 0.001 %
Pb max. 0.001 %

Order-No.

A3702,0250

A3702,0500

A3702,1000

Quantity

250 g

500 g

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Aspartic acid BioChemica

B

Specification:

Assay (titr.) min. 99 %
α20°C/D; 8 %, 6 M HCl +24° - +26°
Heavy metals (as Pb) max. 0.001 %
Other amino acids max. 0.5 %
Ammonium max. 0.1 %

Chloride max. 0.02 %
Sulfate max. 0.02 %

A (1 cm/0.1 M in 1 M HCl)
260 nm max. 0.2
280 nm max. 0.1

Order-No.

A3715,0250

A3715,0500

A3715,1000

Quantity

250 g

500 g

1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Aspartic acid pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.5 %
α20°C/D; 80 g/L, 6 M HCl +24.0° - +26.0°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on drying max. 0.5 %

Organic vol. impurities complies
Sulfated ash max. 0.1 %
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.03 %

Fe max. 0.001 %

Order-No.

A1701,0100

A1701,0250

A1701,0500

A1701,1000

A1701,10006

Quantity

100 g

250 g

500 g

1 kg

6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Aspartic acid magnesium salt pure Ph. Eur.

C

Magnesium-L-aspartate

$C_8H_{12}MgN_2O_8$
 $M = 324.54 \text{ g/mol}$
CAS-No.: 2068-80-6
HS-No.: 29224985
EC-No.: 218-191-6

Storage: RT

Specification:

Assay (titr., calc. anhydrous subst.)
..... 98.0 - 102.0 %
 α 20°C/D; 5 %, 18 % HCl 18 +20.5° + 23.0°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %

Identity complies
With ninhydrine detect. subst. (TLC)
..... complies
pH (2.5 %; H_2O) 6.0 - 8.0
Water (K.F.) 10.0 - 14.0 %

Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.05 %
Fe max. 0.005 %

Order-No.	Quantity
A4738,0100	100 g
A4738,0500	500 g
A4738,1000	1 kg

AST see Glutamate Oxaloacetate Transaminase (GOT), human Page 379
Astragalin see Kaempferol-3-glucoside Page 469
ATA see Aurintricarboxylic acid triammonium salt (C.I. 43810) *BioChemica* Page 122
ATEE see N-Acetyl-L-tyrosine ethyl ester monohydrate (ATEE) *BioChemica* Page 50
ATP disodium salt see Adenosine 5'-triphosphoric acid disodium salt *BioChemica* Page 68
ATP- Na_2 see Adenosine 5'-triphosphoric acid disodium salt *BioChemica* Page 68
ATRA see Retinoic acid pure Ph. Eur. Page 685

Aucubin HPLC grade

B

Aucubosid, Rhinanthin from *Aucuba japonica*

$C_{15}H_{22}O_9$
 $M = 346.33 \text{ g/mol}$
CAS-No.: 479-98-1
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A2054,0020	20 mg
A2054,0020DOC	20 mg
A2054,0050	50 mg
A2054,0050DOC	50 mg

Comment:When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Aucubosid see Aucubin HPLC grade Page 122
Aureine see Senecionin HPLC grade Page 708
Aureomycin see Chlorotetracycline hydrochloride *BioChemica* Page 207

Aurintricarboxylic acid triammonium salt (C.I. 43810) *BioChemica*

B

Chrome Violet CG, Alizarol cyanine R, ATA, 4,4'-Dihydroxyfuchson-3,3',3''- tricarboxylic acid triammonium salt, Aluminon, Eriochrome Cyanine R

$C_{22}H_{23}N_3O_9$
 $M = 473.44 \text{ g/mol}$
CAS-No.: 569-58-4
HS-No.: 29189990
EC-No.: 209-319-1

Storage: RT
LGK: 10 - 13
Disposal: 3

Warning
H315-H319
P305+P351+P338



Solubility (20°C) approx. 800 g/L
(H_2O)

Specification:

Assay (titr.) min. 98 %
IR-Spectrum complies
Water (K.F.) max. 7 %

Order-No.	Quantity
A3768,0010	10 g
A3768,0050	50 g

- Literature:** (1) Stewart, M.L. *et al.* (1971) *Proc. Natl. Acad. Sci. USA* **68**, 97-101
(2) Siegleman, F. & Apirion, D. (1971) *J. Bacteriol.* **105**, 902-907
(3) Liao, L.L. *et al.* (1975) *J. Med. Chem.* **18**, 117-120
(4) Givens, J.F. & Manly, K.F. (1976) *Nucleic Acids Res.* **3**, 405-418
(5) Shresta, S. *et al.* (2004) *Bull. Korean Chem. Soc.* **25**, 1303-1304
(6) Tsi, C.-J. *et al.* (2002) *Mol. Pharmacol.* **25**, 1303-1304
(7) Hallick, R.B. *et al.* (1977) *Nucleic Acids Res.* **4**, 3055-3064

Aurintricarboxylic acid: Inhibitor of Initiation of Protein Synthesis.
Aurintricarboxylic acid, a Preferential Inhibitor of Initiation of Protein Synthesis.
Gewebe und Flüssigkeiten.
Triphenylmethane dyes as inhibitors of reverse transcriptase, ribonucleic acid polymerase and protein synthesis.
Inhibition of RNA-directed DNA polymerase by aurintricarboxylic acid.
Inhibition of PTP 1B by Aurintricarboxylic Acid and Methylenedisalicilic Acid; Polymer versus Monomer.
Aurintricarboxylic acid Protects against Cell Death Caused by Lipopolysaccharides in Macrophages.
Use of aurintricarboxylic acid as an inhibitor of nucleases during nucleic acid purification.

Comment:Aurintricarboxylic acid (ATA) is a red triphenylmethane dye with an absorption maximum at 525 nm. This substance is known to inhibit a number of enzymatic reactions in biological systems. ATA inhibits the initiation of protein synthesis (Ref. 1, 2; complete inhibition at 80 μ M), the RNA polymerase of several organisms, reverse transcriptase (3), RNA-directed DNA polymerase (4), Protein-Tyrosin-Phosphatase 1B (Ref. 5; $IC_{50} = 0.5 \mu$ M), and protects macrophages against cell death caused by lipopolysaccharides (6). In addition ATA has been shown to be useful as an inhibitor of nucleases during nucleic acid isolation, since it is a general inhibitor of nucleases. ATA inhibits the following enzymes: *in vitro*: DNase I (10 μ M), RNase A (10 μ M), S1-Nuclease ($IC_{50} = 50 \mu$ M), Exonuclease III (0.1 mM), and several restriction endonucleases (7). The inhibitory activity depends on the nucleic acid concentration (7). Use at a working concentration (nucleic acid purification) of 1 mM.

Autoclave-ExitusPlus™

B

Nucleic acid decontamination in autoclaves

HS-No.: 38220000

Storage: RT

◆ **Additive for autoclaving**

- removes DNA and RNA contaminations from culture media waste
- for cleaning of culture vessels (e.g. Mini and Maxi prep)
- bottled *ready-to-use*
- delivered as powder mixture

◆ **special, new features**

- non-enzymatic degradation of DNA and RNA by catalytic and cooperative effects of the components
- All components of Autoclave-ExitusPlus™ are readily biologically degradable and not harmful or toxic for humans.
- Does not contain aggressive chemicals

Order-No.	Quantity
A7600,0100	1.2 L
A7600,0250	3 L
A7600,0500	6 L
A7600,1000	6 L

◆ Autoclave-ExitusPlus™ is a registered trademark of AppliChem GmbH.

Literature: (1) Elhafi, G. *et al.* (2004) *Avian Pathology* **33**, 303-306(2) Espy, M.J. *et al.* (2002) *Mayo Clin. Proc.* **77**, 624-628(3) Simmon, K.E. *et al.* (2004) *J. Microbiol. Methods* **56**, 143-149

Microwave or autoclave treatments destroy the infectivity of infectious bronchitis virus and avian pneumovirus but allow detection by reverse transcriptase-polymerase chain reaction.

Detection of Vaccinia Virus, Herpes Simplex Virus, Varicella-Zoster Virus, and Bacillus anthracis DNA by LightCycler Polymerase Chain Reaction After Autoclaving: Implications for Biosafety of Bioterrorism Agents.

Autoclave method for rapid preparation of bacterial PCR-template DNA.

Comment: The common view that autoclaving destroys nucleic acids completely shall be a thing of the past. For many researchers it is surprising to read that the autoclave is a major source of DNA contamination! As good the autoclave is suited to inactivate microorganism, as bad it is suited to remove and destroy nucleic acids (ref. 1-3). During autoclaving DNA molecules in recombinant microorganism become fragmented only and when opening the autoclave, DNA fragments are released with the vapour in large quantities. The statistic fragment size distribution is 1 to 2 kb, ideal for amplification in PCR reactions or for transformation. Certain laboratories, especially those contamination-free working plays a decisive role, removed the autoclave from this working area. Addition of Autoclave-ExitusPlus™ to culture broth or buffer solutions will destroy nucleic acids effectively while autoclaving.

1.) Catalytic and cooperative effects of the reagent components lead to a very fast, non-enzymatic, non-sequence-specific degradation of DNA and RNA molecules.

2.) All component of the Autoclave-ExitusPlus™ solution are biodegradable and not harmful or toxic for humans.

3.) No aggressive mineralic acids or bases are used. Thus, equipment and other materials won't be damaged or destroyed even after prolonged incubation.

4.) Aqueous solution: does not contain organic solvents or volatile components, no toxic fumes generated.

5.) Temperatures above approx. 50°C increase the reaction rate and effectiveness.

Investigations have shown that at high temperatures, especially during autoclaving, the reaction rate is multiplied. DNA degradation and an "additional" sterilisation effect is achieved, even if the autoclaving temperature is not reached, e.g. because the autoclave is broken, settings are wrong, or if large quantities of liquid won't be heated to 120°C (e.g. missing temperature sensor within the liquid). In such cases, the additive provides additional security.

Delivery form: Autoclave-ExitusPlus™ is prepacked to 12 x 100 ml (corresponds to 1.2 L), 12 x 250 ml (corresponds to 3 L), 12 x 500 ml (corresponds to 6 L), and 6 x 1 L, respectively. Larger quantities are available on request.**Avidin BioChemica**

B

purified by chromatography, low content of nucleotides from eggs, lyophilized

M = approx. 68000 g/mol

Storage: 2-8°C

CAS-No.: 1405-69-2

HS-No.: 29420000

EC-No.: 296-516-0

Specification:

Activity approx. 12 U/mg

Loss on drying max. 5 %

Sulfated ash max. 2 %

Order-No.	Quantity
A2568,0010	10 mg
A2568,0050	50 mg
A2568,0100	100 mg

Azadirachtin

B

from *Azadirachta indica* semen (Neem tree seeds)C₃₅H₄₄O₁₆

M = 720.72 g/mol

CAS-No.: 11141-17-6

HS-No.: 29329900

Storage: 2-8°C

LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.	Quantity
A3419,0001	1 mg
A3419,0005	5 mg

Comment: Documents included: HPLC-DAD with UV spectrum.Azalomycin M see Nigericin sodium salt *BioChemica* Page 567
Azidin yellow 5 G see Titan yellow (C.I. 19540) Page 818

3'-Azido-3'-deoxythymidine 5'-triphosphate tri(triethylammonium) salt

B

aqueous solution

$C_{28}H_{57}N_8O_{13}P_3$
 $M = 803.72 \text{ g/mol}$
 HS-No.: 38220000

Storage: -20°C

Specification:

Assay min. 96 %
 Concentration 100 mM

Order-No.	Quantity
A5210,0100	100 µl
A5210,0500	500 µl

Comment: AZT is a widely used antiviral agent. AZT penetrates the cell membrane and is converted into AZT triphosphate which inhibits the reaction of reverse transcription. AZT triphosphate can be used for inhibition of reverse transcription in vitro and for the investigation of polymerase-substrate interactions.

2,2'-Azino-bis-(3-ethylbenzthioazoline-6-sulfonic acid) diammonium salt see ABTS® BioChemica Page 37

Azure B (C.I. 52010)

B

Azure I, N,N,N'-Trimethylthionin,
 Methyleneazure

$C_{15}H_{16}ClN_3S$
 $M = 305.83 \text{ g/mol}$
 CAS-No.: 531-55-5
 HS-No.: 29343090
 EC-No.: 208-511-2

Storage: RT

Melting range 205 - 210°C (dec.)

Specification:

Assay (TLC) min. 85 %
 λ_{max} (H₂O) 640 - 655 nm
 Loss on drying max. 5 %

Order-No.	Quantity
A6775,0005	5 g
A6775,0010	10 g
A6775,0025	25 g

Literature: (1) Feder, N. & Wolf, M.K. (1965) *J. Cell Biol.* **27**, 327-336

(2) Ehrig, T. et al. (2001) *J. Mol. Diag.* **3**, 22-25

Metachromatic and Orthochromatic Staining by Toluidine blue of Nucleic Acids in Tissue Sections.
 Quantitative Amplification of Genomic DNA from Histological Tissue Sections after Staining with Nuclear Dyes and Laser Capture Microdissection.

Comment: Paraffin-embedded and frozen tissue sections were stained with different nuclear dyes. Nucleic acids isolated from these samples were amplified in PCR reactions. Staining of Paraffin-embedded and frozen section was carried out for 30 seconds in an aqueous 0.5 % Azure B solution (2).

Azure I see Azure B (C.I. 52010) Page 124

6-BA see 6-Benzylaminopurine BioChemica Page 136

BAA see N α -Benzoyl-L-arginineamide hydrochloride monohydrate Page 134

BAC see N,N'-Bisacryloyl cystamine BioChemica Page 145

BACH see (+)-Biotinamidohexanoic acid hydrazide Page 140

Bacillus cereus (PREP) Agar Base

C

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

Composition:

Agar 15.0 g/L
 Mannitol 10.0 g/L
 Peptones 11.0 g/L
 Phenol red 0.025 g/L
 Sodium chloride 10.0 g/L

Specification:

pH before autoclaving . . . approx. 7.2 (20°C)

Order-No.	Quantity
A5639,0500	500 g
A5639,5000	5 kg

◆ **Attention:** Please note that a supplement (A6782) exists for this agar. Please order separately.

Literature: (1) Mossel et al. (1967) *Appl. Microbiol.* **15**, 650

Comment: This medium is a selective and differential medium for the enumeration of *Bacillus cereus*.

Directions: Suspend 46 g in 900 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 100 ml of Egg Yolk Polymyxin PREP Emulsion (A6782). Mix well before pouring. Store the prepared medium in the dark at 2-8°C.



**Production of
 cell culture powdered media
 following the customers recipe.**

Bacitracin BioChemica

B

from *Bacillus licheniformis*

$C_{66}H_{103}N_{17}O_{16}S$
 $M = 1422.72$ g/mol
 CAS-No.: 1405-87-4
 HS-No.: 29419000
 EC-No.: 215-786-2

Storage: 2-8°C
 LGK: 10 - 13

Melting point approx. 222°C

Specification:

Activity min. 60 IU/mg
 Loss on drying max. 5 %
 Solubility (1 %; H₂O) clear, yellow
 pH (1 %; H₂O; 20°C) 6.0 - 7.0

Order-No.	Quantity
A0623,0005	5 g
A0623,0010	10 g
A0623,0025	25 g

Literature: (1) Scogin, D.A. *et al.* (1980) *Biochemistry* **19**, 3348-3352
 (2) Roth, R.A. (1981) *Biochem. Biophys. Res. Com.* **98**, 431-438
 (3) Daly, D.J. *et al.* (1985) *Biochem. Soc. Trans.* **13**, 1161-1162
 (4) Pick, L. & Hurwitz, J. (1986) *J. Biol. Chem.* **261**, 6684-6693
 (5) Anastasi, A. *et al.* (1993) *Biochem. J.* **290**, 601-607

Binding of nickel and zinc ions to bacitracin A.
 Bacitracin: Inhibitor of the Insulin-degrading activity of glutathione-insulin transhydrogenase.
 Purification of the proline endopeptidase from human muscle.
 Purification of the rRNA ligase from wheat germ.
 Characterisation of the bacterial metalloendopeptidase Pitrilysin.

Comment: *Antibiotic:* The antibiotic bacitracin from *Bacillus licheniformis* is composed of several peptides (A, B, C, D, E, F₁₋₃). Bacitracin A is a cyclic dodecapeptide and with 70 % the most important component of bacitracin. For its bactericidal action, it requires divalent cations (e. g. zinc), forming stable complexes (1). It inhibits, like vancomycin, the biosynthesis of the cell wall, preferentially gram positive bacteria and cocci, by binding to bactoprenyl pyrophosphate.
Protease inhibitor: Bacitracin is employed as a protease inhibitor, too. The insulin-degrading activity of the glutathione-insulin transdehydrogenase is inhibited by 90 µM bacitracin by 50 % (2). The proline endopeptidase is inhibited by a concentration of 0.1 mM (3), the bacterial metalloendopeptidase pitrilysin by 0.5 - 0.7 mM (5). It was part of the protease inhibitor cocktail for the preparation of wheat germ extracts in a concentration of 100 µg/ml and in a reduced concentration of 10 µg/ml in the following purification steps (4).
Stability: Bacitracin is very stable as a dry substance at room temperature (moisture < 1 %) or at 37°C for at least 15 months. At higher temperatures (> 55°C) it is unstable. Bacitracin is readily soluble in water or alcohols (1 mg/ml) and forms stable salts with zinc. In aqueous solutions, it is quite stable at pH 4 - 5, but will be inactivated quite fast at pH 5 - 8 at 25°C. Above pH 8, it is completely unstable. A 10 % loss of activity in solutions is observed after approx. two months.

BaCO₃ see Barium carbonate Page 126

Bacterial Alkaline Phosphatase see Phosphatase, alkaline bacterial (BAP) Page 622

BAEE see Nα-Benzoyl-L-arginine ethyl ester hydrochloride (BAEE) BioChemica Page 134

rHu BAFF



B

recombinant Human B-cell Activating Factor

$M = 17.0$ kDa
 HS-No.: 29371900

Storage: -20°C

Each mg substance contains 1.6 mg mannitol and 1.2 mg HSA.
 from *E. coli*

Specification:

Assay (RP-HPLC) min. 98 %
 Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8540,0005	5 µg
A8540,0020	20 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

Bafilomycin A1 BioChemica

B

NSC 381866

from *Streptomyces griseus*

$C_{35}H_{58}O_9$
 $M = 622.83$ g/mol
 CAS-No.: 88899-55-2
 HS-No.: 29419000

Storage: -20°C
 protected from light

Warning
 H335-H319-H315
 P261-P305+P351+P338



Solubility (5 mg/ml in MeOH or DMSO)
 clear, yellow

Specification:

Assay min. 95 %

Order-No.	Quantity
A7823,0001	1 mg

Baicalein HPLC grade

B

5,6,7-Trihydroxyflavone

from *Scutellaria baicalensis*

$C_{14}H_{10}O_5$
 $M = 270.24$ g/mol
 CAS-No.: 491-67-8
 HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5264,0020	20 mg
A5264,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Baicalein-7-β-D-glucopyranosiduronate see Baicalin HPLC grade Page 126

B

Storage: 2-8°C

20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

C

Storage: RT
LGK: 10 - 13

5 kg

◆ **Attention:** Please note that a supplement (A6783) exists for this agar. Please order separately.

Literature: (1) Baird-Parker (1962) *J. Appl. Bact.* **25**, 12

Comment: This medium is a selective and diagnostic medium for the isolation and enumeration of *Staphylococcus aureus*.

Directions: Suspend 60 g in 950 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 50 ml of Egg Yolk Tellurite Emulsion (A6783). Mix well before pouring. Store the prepared medium in the dark at 2-8°C. It is recommended to prepare the medium fresh before use.

BAL in EtOH see 2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol Page 282

Ba(OH)₂ · 8H₂O see Barium hydroxide octahydrate p. A. Page 129

BAP see 1,4-Diacryloylpiperazine *BioChemica* Page 272

L-BAPA see α -Benzoyl-DL-arginine p-nitroanilide hydrochloride *BioChemica* Page 134

Baptitoxin see Cytisine HPLC grade Page 256

BaCO ₃	CBaO ₃	Storage: RT	Class / PG: 6.1/III
	<i>M</i> = 197.35 g/mol	LGK: 10 - 13	UN1564
Melting point	CAS-No.: 513-77-9	Disposal: 15	Warning
Solubility (20°C)	HS-No.: 28366000		H302
	EC-No.: 208-167-3		P262

C

1 kg

C

6 x 1 kg

Barium chloride dihydrate

Boiling point 1560°C
 Melting point 963°C
 Solubility (20°C) 375 g/L (H₂O)

BaCl₂ · 2H₂O
M = 244.28 g/mol
 CAS-No.: 10326-27-9
 HS-No.: 28273985
 EC-No.: 233-788-1

Storage: RT
 LGK: 6.1 B
 Disposal: 15

Class / PG: 6.1/III
 UN1564
 Danger
 H301-H332
 P301+P310

**Barium chloride dihydrate p. A.**

C

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O) 5.0 - 8.0
 Ca max. 0.005 %
 Co max. 0.0005 %
 Cr max. 0.0005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Ni max. 0.0005 %
 Pb max. 0.0005 %

Sr max. 0.01 %
 Zn max. 0.0005 %

Order-No.	Quantity
A2580,0250	250 g
A2580,0500	500 g
A2580,1000	1 kg
A2580,10006	6 x 1 kg
A2580,5000	5 kg
A2580,9010	10 kg
A2580,9025	25 kg

Barium chloride dihydrate pure

C

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O) 5.0 - 8.0
 Ca max. 0.05 %
 Co max. 0.0005 %
 Cu max. 0.005 %
 Fe max. 0.005 %
 Ni max. 0.005 %

Pb max. 0.005 %
 Sr max. 0.5 %

Order-No.	Quantity
A3518,0500	500 g
A3518,1000	1 kg
A3518,10006	6 x 1 kg
A3518,5000	5 kg
A3518,9010	10 kg
A3518,9025	25 kg

Barium chloride - Solutions

Storage: RT

Barium chloride - Solution (61 g/L) p. A.

C

HS-No.: 28273985

LGK: 10 - 13
 Disposal: 15

Class / PG: 6.1/III
 UN3287
 WGK: 1
 Warning
 H332-H302
 P308+P378

**Composition:**

Barium chloride dihydrate . . 61 g/L (A2580)

Specification:

Ca max. 0.005 %	Ni max. 0.0005 %
Co max. 0.0005 %	Pb max. 0.0005 %
Cr max. 0.0005 %	Sr max. 0.01 %
Cu max. 0.0005 %	Zn max. 0.0005 %
Fe max. 0.0005 %	

Order-No.	Quantity
A3284,1000	1 L
A3284,5000	5 L

Barium chloride - Solution 30 % pure

C

HS-No.: 28273985

LGK: 10 - 13
 Disposal: 15

Class / PG: 6.1/III
 UN3287
 WGK: 1
 Danger
 H301-H332
 P301+P310

**Composition:**

Barium chloride dihydrate . . 300 g/L (A3518)

Specification:

Heavy metals (as Pb) . . max. 0.001 %
 Fe max. 0.001 %

Order-No.	Quantity
A5438,1000	1 L
A5438,10006	6 x 1 L
A5438,5000	5 L
A5438,9025	25 L

Barium chloride - Solution 25 % pure

HS-No.: 28273985

LGK: 10 - 13
Disposal: 15Class / PG: 6.1/III
UN3287
WGK: 1
Danger
H332-H301
P301+P310**Composition:**

Barium chloride dihydrate . . . 250 g/L (A3518)

Specification:Heavy metals (as Pb) . . . max. 0.001 %
Fe max. 0.001 %

Order-No.	Quantity
A4748,1000	1 L
A4748,5000	5 L
A4748,9025	25 L

Barium chloride - Solution 20 % p. A.

HS-No.: 28273985

LGK: 10 - 13
Disposal: 15Class / PG: 6.1/III
UN3287
WGK: 1
Warning
H302-H332
P308+P378**Composition:**

Barium chloride dihydrate . . . 200 g/L (A2580)

Specification:Ca max. 0.005 %
Co max. 0.0005 %
Cr max. 0.0005 %
Cu max. 0.0005 %
Fe max. 0.0005 %Ni max. 0.0005 %
Pb max. 0.0005 %
Sr max. 0.01 %
Zn max. 0.0005 %

Order-No.	Quantity
A5616,1000	1 L
A5616,10006	6 x 1 L
A5616,5000	5 L

Barium chloride - Solution 10 % p. A.

HS-No.: 28273985

LGK: 10 - 13
Disposal: 15Class / PG: 6.1/III
UN3287
WGK: 1
Warning
H302-H332
P308+P378**Composition:**

Barium chloride dihydrate . . . 100 g/L (A2580)

Specification:Ca max. 0.005 %
Co max. 0.0005 %
Cr max. 0.0005 %
Cu max. 0.0005 %
Fe max. 0.0005 %Ni max. 0.0005 %
Pb max. 0.0005 %
Sr max. 0.01 %
Zn max. 0.0005 %

Order-No.	Quantity
A6433,1000	1 L
A6433,10006	6 x 1 L
A6433,5000	5 L

Barium chloride - Standard volumetric solution (0.1 M)

0.1 mol/L (0.2 N Solution)

HS-No.: 38220000

LGK: 10 - 13
Disposal: 15Class / PG: 6.1/III
UN3287
WGK: 1
Warning
H302-H332
P308+P378**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0953,0100	100 ml
A0953,0500	500 ml
A0953,1000	1 L

Barium chloride - Standard volumetric solution (0.05 M)

0.05 mol/L (0.1 N Solution)

HS-No.: 38220000

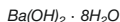
LGK: 10 - 13
Disposal: 15Class / PG: 6.1/III
UN3287
WGK: 1
Warning
H332-H302
P308+P378**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3297,1000	1 L
A3297,10006	6 x 1 L
A3297,5000	5 L

Barium hydroxide octahydrate p. A.

C



$\text{BaH}_2\text{O}_2 \cdot 8\text{H}_2\text{O}$
 $M = 315.48 \text{ g/mol}$
 CAS-No.: 12230-71-6
 HS-No.: 28164000
 EC-No.: 241-234-5

Storage: RT
 LGK: 8 B
 Disposal: 28

Class / PG: 8(6.1)/II
 UN2923
 WGK: 1
 Danger
 H302-H314-H332
 P305+P351+P338-P280-
 P301+P330+P331



Specification:

Assay (titr.) min. 98 %
 Heavy metals (as Pb) max. 0.0005 %
 Insol. matter (in diluted HCl) max. 0.01 %
 Barium carbonate max. 2 %
 Chloride max. 0.002 %

Ca max. 0.002 %
 Fe max. 0.0005 %
 S: max. 0.0005 %
 Sr max. 0.5 %

Order-No.	Quantity
A2923,0250	250 g
A2923,0500	500 g
A2923,1000	1 kg
A2923,10006	6 x 1 kg

Barium sulfate pure Ph. Eur.

C

BaSO_4
 $M = 233.40 \text{ g/mol}$
 CAS-No.: 7727-43-7
 HS-No.: 28332700
 EC-No.: 231-784-4

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: nwg

Specification:

Identity complies
 Acid soluble substances max. 0.3 %
 Acidic/alk. react. subst. complies
 Heavy metals (as Pb) max. 0.001 %
 Loss on ignition max. 2.0 %
 Oxid. sulfur comp. complies

Soluble barium salts max. 0.001 %

Order-No.	Quantity
A4911,1000	1 kg
A4911,10006	6 x 1 kg
A4911,5000	5 kg
A4911,9010	10 kg
A4911,9025	25 kg

Basic Brown 1 see Bismarck brown Y (C.I. 21000) Page 147
 Basic Brown 4 see Bismarck brown R (C.I. 21010) Page 146
 recombinant Human basic Fibroblast Growth Factor see rHu bFGF bioconfident grade Page 348
 Basic Fuchsin see Fuchsin basic (C.I. 42510) Microscopy grade Page 364
 Basic Green 1 see Brilliant green (C.I. 42040) Page 158
 Basic Green 4 see Malachite green oxalate (C.I. 42000) Page 508
 Basic Orange 14 see Acridine orange (C.I. 46005) Page 51
 Basic Red 1 see Rhodamine 6G (C.I. 45160) Page 687
 Basic Red 5 see Neutral red (C.I. 50040) Page 564
 Basic Rhodamine Yellow see Rhodamine 6G (C.I. 45160) Page 687
 Basic Violet 1 see Methyl violet (C.I. 42535) Page 543

BCECF BioChemica

B

2',7'-Bis-(carboxyethyl)-5(6)-
 carboxyfluorescein

$\text{C}_{27}\text{H}_{20}\text{O}_{11}$
 $M = 520.45 \text{ g/mol}$
 CAS-No.: 85138-49-4
 HS-No.: 29329900

Storage: 2-8°C
 protected from light

Specification:

Assay (TLC) min. 90 %
 Residue on ignition max. 2.5 %

Order-No.	Quantity
A1160,0001	1 mg
A1160,0005	5 mg

Literature: (1) Rink, T.J. *et al.* (1982) *J. Cell Biol.* **95**, 189-196
 (2) Cardullo, R.A. & Dandala, S. (1999) *Anal. Biochem.* **267**, 351-356

Cytoplasmic pH and free Mg^{2+} in lymphocytes.
 Correction of artifacts in complex aqueous solutions with BCECF.

Comment: BCECF is an analogue of carboxyfluorescein with better properties for the determination of the pH value in lymphocytes, since it will be hold back much better inside the cell. The efficient uptake of the indicator in intact lymphocytes requires the use of the acetoxymethylester (BCECF-AM). The excitation maximum of a solution containing 70 nM BCECF is 500 nm, the emission maximum at 530 nm. Different reagents, like glycerol, sucrose, polyethyleneglycol or polyvinylpyrrolidone influence the fluorescence intensity of the pH-sensitive fluorescence indicator (2).

BCECF-AM BioChemica

B

2',7'-Bis-(carboxyethyl)-5(6)-carboxy-
 fluorescein acetoxymethylester

$\text{C}_{42}\text{H}_{40}\text{O}_{19}$
 $M = 848.77 \text{ g/mol}$
 CAS-No.: 117464-70-7
 HS-No.: 29329900

Storage: -20°C
 protected from light

Warning
 H319-H335-H315
 P305+P351+P338



Specification:

Assay min. 90 %
 Solubility (1 %; DMSO) clear (yellow - or-
 orange)

Order-No.	Quantity
A1003,0001	1 mg
A1003,0005	5 mg

Literature: (1) Rink, T.J. *et al.* (1982) *J. Cell Biol.* **95**, 189-196

Cytoplasmic pH and free Mg^{2+} in lymphocytes.

Comment: The efficient uptake of the indicator in intact lymphocytes requires the use of the acetoxymethylester (BCECF-AM). Inside the cell, the ester group will be hydrolysed, resulting in an almost complete "capture" of the indicator, but within 10 - 20 minutes, approx. 10 % will be liberated. Usually, cells are loaded with 10 μM BCECF-AM/L.

recombinant Human B-cell Activating Factor see rHu BAFF Page 125

BCIP BioChemica

B

5-Bromo-4-chloro-3-indolyl phosphate
p-toluidine salt, X-Phos p-toluidine salt,
X-Phos-pT

C₈H₆BrClNO₄P · C₇H₉N
M = 433.64 g/mol
CAS-No.: 6578-06-9
HS-No.: 29339980
EC-No.: 229-506-1

Storage: -20°C
protected from light

Warning
H335-H319-H315
P305+P351+P338



Solubility (20°C) 20 mg/ml (DMF)

Specification:

λ_{max} (buffer pH 7.0) 286 - 294 nm
E 1 %, 1 cm, λ_{max} min. 5800 (pH 7.0)
Water (K.F.) max. 1 %

Order-No.	Quantity
A1117,0250	250 mg
A1117,0500	500 mg
A1117,0001	1 g
A1117,0005	5 g

Literature: (1) Horwitz, J.P. *et al.* (1966) *J. Med. Chem.* **9**, 447

(2) Gossrau, R. (1978) *Histochemistry* **58**, 203-218

(3) Leary, J.J. *et al.* (1983) *Proc. Natl. Acad. Sci. USA* **80**, 4045-4049

(4) Ey, P.L. & Ashman, L.K. (1986) *Methods Enzymol.* **121**, 497-509

(5) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Supplement 66, Page 10.8.17. Greene Publishing & Wiley-Interscience, New York.

Substrate for cytohistochemical determination of enzyme activities: Dihalo-3-indolylphosphates.

Comparison of the sensitivity of different hydrolase substrates for their histochemical determination.

Bio-blots for DNA and RNA with BCIP as a substrate/phosphatase linked antibody.

Determination of alkaline phosphatase connected antibodies in immunoblots.

Comment: BCIP (X-Phos p-Toluidine salt) is a substrate of the alkaline phosphatase, which releases the blue stain 5-Bromo-4-chloro-3-indoxyl (X) by cleaving the substrate. The enzymatically released indoxyl will be oxidized by NBT (A1243) to reveal the insoluble indigo. Depending on the author, BCIP is dissolved in anhydrous dimethylformamide (DMF) or DMSO in concentrations ranging from 5 to 50 mg/ml and stored at -20°C or +4°C. Solutions of BCIP are stable for approx. 1 year at +4°C.

BCP see 1-Bromo-3-chloropropane BioChemica Page 159

rHu BDNF



B

recombinant Human Brain-Derived
Neurotrophic Factor
lyophilized without additives
from *E. coli*

M = 26.98 kD
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 96 %
Assay (SDS-PAGE) min. 96 %

Order-No.	Quantity
A8286,0002	2 µg
A8286,0010	10 µg
A8286,0100	100 µg

Comment: BDNF is a member of the nerve growth factor family of trophic factors. In the brain BDNF has a trophic action on retinal, cholinergic, and dopaminergic neurons, and in the peripheral nervous system it acts on both motor and sensory neurons. Some protein domains of BDNF are identical with those of NGF and another neurotrophic factor, designated NT-3 (neurotrophin-3). Polyclonal antibodies raised against murine NGF have been shown to cross-react with both NT-3 and BDNF. Recombinant Human Brain-Derived Neurotrophic Factor produced in *E. coli* is a homodimer, non-glycosylated, polypeptide chain containing 2 x 119 amino acids and having a total molecular mass of 26.98 kDa.

Benedict's Reagent for the qualitative determination of sugars

C

HS-No.: 38220000

Storage: RT

Warning
H302-H332-H312
P280-P308+P313



Specification:

Density (d 20°C/4°C) approx. 1.19

Order-No.	Quantity
A4488,0100	100 ml
A4488,0500	500 ml
A4488,1000	1 L
A4488,10006	6 x 1 L

Bengale rose see Rose Bengal (C.I. 45440) Page 691

Bentonite

CAS-No.: 1302-78-9
HS-No.: 25081000
EC-No.: 215-108-5

Storage: RT

Bentonite pure Ph. Eur.

C

Montmorillonite

Specification:

Alkaline reacting subst. complies
Heavy metals (as Pb) max. 0.005 %
Identity complies
Larger particles max. 0.5 %
Loss on drying (105°C) max. 15 %

Microbial impurities complies
Sedimentation volume complies
Swelling property in H₂O complies

Order-No.	Quantity
A5063,0500	500 g
A5063,1000	1 kg
A5063,5000	5 kg
A5063,9025	25 kg

Bentonite pure

Specification:
Heavy metals (as Pb) max. 0.005 %
Identity complies
Loss on drying (105°C) max. 15 %

Order-No.	Quantity
A6918,1000	1 kg
A6918,10006	6 x 1 kg
A6918,5000	5 kg

C

Benzaldehyde for synthesis

Boiling point 179°C
Density (d 20°C/4°C) .. 1.045
Melting point -56°C
n 20°C/D 1.5450

C₇H₆O
M = 106.13 g/mol
CAS-No.: 100-52-7
HS-No.: 29122100
EC-No.: 202-860-4

Storage: RT
LGK: 3 B
Disposal: 1

Class / PG: 9/II
UN1990
WGK: 2
Warning
H302
P262



Specification:
Assay (HPLC) min. 99 %

Order-No.	Quantity
A0753,1000	1 L
A0753,10006	6 x 1 L
A0753,2500	2.5 L
A0753,25004	4 x 2,5 L

Benzalkonium chloride

Melting point 29 - 34°C
Solubility (20°C) 4000 g/L (H₂O)

CAS-No.: 63449-41-2
HS-No.: 34021200
EC-No.: 264-151-6

Storage: RT
LGK: 8 A

Class / PG: 8/II
UN3261
WGK: 3
Danger
H312-H400-H302-H314
P280-P309+P311-P273



Benzalkonium chloride NF



Specification:
Assay (titr.) 97.0 - 103.0 %
Identity complies
In H₂O soluble matter complies
Residue on ignition max. 2.0 %
Other alkyl components complies
Other amines complies
Water (K.F.) max. 15 %

Order-No.	Quantity
A8517,0250	250 g
A8517,0500	500 g
A8517,1000	1 kg

C

Benzalkonium chloride pure

Alkylbenzyltrimethylammonium chloride

Specification:
Assay (titr.) min. 95 %
Identity complies
Loss on ignition max. 2 %
Water (K.F.) max. 10 %

Order-No.	Quantity
A6919,0500	500 g
A6919,1000	1 kg
A6919,10006	6 x 1 kg
A6919,5000	5 kg

C

Benzamide BioChemica

B

Benzoic acid amide

Density (20°C) 1.34
Melting point 125 - 128°C
Solubility (25°C) 13 g/L (H₂O)

C₇H₇NO
M = 121.14 g/mol
CAS-No.: 55-21-0
HS-No.: 29242998
EC-No.: 200-227-7

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H341-H302
P281-P308+P313



Specification:
Assay min. 98 %

Order-No.	Quantity
A2158,0100	100 g
A2158,0250	250 g

- Literature:** (1) Southan, G.J. & Szabo, C. (2003) *Curr. Med. Chem.* **10**, 321-340
(2) Putt, K.S. & Hergenrother, P.J. (2003) *Anal. Biochem.* **326**, 78-86
(3) Kun, E. *et al.* (2004) *Int. J. Mol. Med.* **11**, 191-193
(4) McLick, J. *et al.* (1987) *Biochim. Biophys. Acta.* **909**, 71-83

Poly(ADP-Ribose) Polymerase Inhibitors.
An enzymatic assay for PARP-1 via the chemical quantitation of NAD⁺: application to the high-throughput screening of small molecules as potential inhibitors.
Synergistic anticancer action of reversibly and irreversibly acting ligands of poly (ADP-ribose) polymerase.
Benzamide-DNA interactions: deductions from binding, enzyme kinetics and from X-ray structural analysis of a 9-ethyladenine-benzamide adduct.

Comment: Benzamide is a potent poly(ADP-ribose) polymerase (PARP) inhibitor. It is assumed that benzamide inhibits PARP by interfering with the binding of NAD to the enzyme's active site (1). In addition, it interacts with DNA by forming a 9-ethyladenine-benzamide adduct (4). This may prevent the recognition of DNA breaks by PARP - breaks activates the enzyme - and thus prevention of the activation by PARP (1). Benzamide may be dissolved in water (1 g dissolves in 74 ml, higher concentrations require boiling) or ethanol (max. solubility 1 g / 6 ml). Stock solutions may be prepared at concentrations of 5 mM (2). The recommended working concentration is in the range of 100 to 500 µM.

Benzamidine hydrochloride BioChemica

B

Melting range 80 - 85°C

$C_7H_8N_2 \cdot HCl$
 $M = 156.62 \text{ g/mol}$
 CAS-No.: 1670-14-0
 HS-No.: 29252900
 EC-No.: 216-795-4

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

WGK: 1
 Warning
 H341-H302
 P308+P313-P281

**Specification:**

Assay (titr.) min. 99 %
 Water (K.F.) max. 15 %

Order-No.	Quantity
A1380,0005	5 g
A1380,0010	10 g
A1380,0025	25 g

Literature: (1) Mares-Guia, M. & Shaw, E. (1965) *J. Biol. Chem.* **240**, 1579-1585
 (2) Markwardt, F. *et al.* (1968) *Eur. J. Biochem.* **6**, 502-506
 (3) Ensink, J.W. *et al.* (1972) *J. Clin. Endocrinol. Metab.* **35**, 463-467
 (4) Jeffcoate, S.L. & White, N. (1974) *J. Clin. Endocrinol. Metab.* **38**, 155-157

Studies on the active center of trypsin.
 Comparative studies on the inhibition of trypsin, plasmin and thrombin by derivatives of benzylamine and benzamidine.
 Use of benzamidine as proteolytic inhibitor in the RIA of glucagon in plasma.
 Use of benzamidine to prevent the destruction of thyrotropin-releasing hormone (TRH) by blood.

Comment: Benzamidine is an amide derivative of benzene. It is an effective, competitive inhibitor of trypsin, thrombin, acrosin and plasmin. The K_i -value for trypsin is 3.5 M and for thrombin at 220 μM (2). The working concentration in the protease inhibitor cocktails of benzamidine is 1 mM or 5 mM. A good inhibition of proteases from blood/plasma is observed at final concentrations of 50 mM. Stock solutions can be prepared as 1 M aqueous solutions (3, 4).

Benzamine blue see Trypan blue (C.I. 23850) Page 842

Benzene

Cyclohexatriene

C_6H_6
 $M = 78.11 \text{ g/mol}$
 CAS-No.: 71-43-2
 HS-No.: 29022000
 EC-No.: 200-753-7

Storage: RT
 LGK: 3 A
 Disposal: 9

Class / PG: 3/II
 UN1114
 WGK: 3
 Danger
 H340-H319-H350-H304-H372-H225-H315
 P308+P313-P201-P301+P310-P305+P351+P338-P302+P352-P210-P331



Boiling point 80°C
 Density (d 20°C/4°C) .. 0.88
 Melting point 5.5°C
 Solubility (20°C) 1.77 g/L (H_2O)
 n 20°C/D 1.5011

Benzene p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
 Free acid max. 0.0004 %
 Free alkali max. 0.0002 %
 Thiophene max. 0.0001 %
 Loss on drying max. 0.05 %
 Al max. 0.00005 %

Cr max. 0.00001 %
 Cu max. 0.00001 %
 Fe max. 0.00001 %
 Mg max. 0.00001 %
 Mn max. 0.00001 %
 Ni max. 0.00001 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A0763,0500	500 ml
A0763,1000	1 L
A0763,10006	6 x 1 L
A0763,2500	2.5 L
A0763,25004	4 x 2,5 L

Benzene for synthesis

C

Specification:

Assay (HPLC) min. 99 %

Order-No.	Quantity
A0863,0500	500 ml
A0863,1000	1 L
A0863,2500	2.5 L
A0863,25004	4 x 2,5 L
A0863,5000	5 L

Benzene D₆

C

Cyclohexatriene deuterated

C_6D_6
 $M = 84.15 \text{ g/mol}$
 CAS-No.: 1076-43-3
 HS-No.: 28459010
 EC-No.: 214-061-8

Storage: RT
 LGK: 3 A
 Disposal: 9

Class / PG: 3/II
 UN1114
 WGK: 3
 Danger
 H304-H225-H319-H340-H350-H315-H372
 P302+P352-P301+P310-P331-P305+P351+P338-P201-P210-P308+P313



Boiling point 79°C
 Density (d 20°C/4°C) .. 0.95
 Melting point 6.7°C
 Solubility insoluble (H_2O)

Specification:

Deuteration degree min. 99.6 %

Order-No.	Quantity
DS-4,0005	5 ml
DS-4,0025	25 ml
DS-4,0100	100 ml

Benzeneazo-1-(2-naphthalene-6,8-disulfonic acid) disodium salt see Orange G (C.I. 16230) Page 585
 Benzene carboxylic acid see Benzoic acid Page 133
 1,4-Benzenediamine dihydrochloride see p-Phenylenediamine dihydrochloride BioChemica Page 621

Benzethonium chloride

*Diisobutylphenoxethoxyethyl*dimethyl-
benzyl ammonium chloride

C₂₇H₄₂ClNO₂
M = 448.08 g/mol
CAS-No.: 121-54-0
HS-No.: 29239000
EC-No.: 204-479-9

Storage: RT
LGK: 8 A

Class / PG: 8(6.1)/III
UN2923
WGK: 2
Danger
H411-H302-H314-H410
P273-P301+P330+P331-
P305+P351+P338-P280



Classification: cationic detergent
Melting point 164 - 166°C

Benzethonium chloride BioChemica

B

Specification:

Assay (titr.) min. 99 %
Heavy metals max. 0.001 %
Loss on drying max. 5 %
pH (10 %; H₂O) 5.0 - 7.5

Sulfate max. 0.01 %

Order-No.	Quantity
A6834,0100	100 g
A6834,0250	250 g
A6834,0500	500 g

Comment: Benzethonium chloride is a quaternary ammonium salt with antimicrobial activity. In cosmetics, dairies and food industries it is used as a preservative and disinfectant. In clinical diagnosis it serves as a reagent for the determination of total protein in urine and cerebrospinal fluid (CSF). In addition, this cationic detergent is used in biochemistry as a **protease inhibitor**. Benzethonium chloride is part of inhibitor cocktails at a concentration of 0.1 mM. Besides, the enzymes acetylcholine esterase and choline esterase are completely inhibited. It is readily soluble in water. Benzethonium chloride is incompatible with anionic detergents.

Benzethonium chloride pure Ph. Eur.

C

Specification:

Assay (titr.) 97.0 - 103.0 %
Acidic/alk. react. subst. ... complies
Appearance of solution ... complies
Identity complies

Loss on drying max. 5 %
Sulfated ash max. 0.1 %
Volatile bases & their salts complies

Order-No.	Quantity
A4438,0250	250 g
A4438,0500	500 g
A4438,1000	1 kg

Benzethonium chloride - Solution (0.004 M)

C

HS-No.: 38220000

Storage: RT

Composition:

Benzethonium chloride 1.807 g/L

Order-No.	Quantity
A4818,1000	1 L
A4818,10006	6 x 1 L
A4818,5000	5 L
A4818,9010	10 L

Benzoic acid

Benzene carboxylic acid

C₇H₆O₂
M = 122.12 g/mol
CAS-No.: 65-85-0
HS-No.: 29163100
EC-No.: 200-618-2

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1
Warning
H319-H302
P305+P351+P338



Boiling point (13 hPa) 132°C
Solubility (20°C) 2.9 g/L (H₂O)

Benzoic acid p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Loss on drying max. 0.25 %
Halogenides max. 0.008 %
Sulfate max. 0.002 %
As max. 0.0003 %
Cu max. 0.002 %

Fe max. 0.001 %
Pb max. 0.001 %
Zn max. 0.001 %

Order-No.	Quantity
A2296,0100	100 g
A2296,0500	500 g
A2296,1000	1 kg
A2296,10006	6 x 1 kg
A2296,5000	5 kg

Benzoic acid pure Ph. Eur., USP

C

Phenyl formic acid

Specification:

Assay (titr.) 99.5 - 100.5 %
Appearance of solution ... complies
Behaviour against H₂SO₄ ... complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Melting point 121 - 123°C
Oxidizable substances ... complies

Sulfated ash max. 0.05 %
Halogen compounds (as Cl) max. 0.01 %
Water (K.F.) max. 0.7 %
Halogen compounds, halogenides max. 0.03 %

Order-No.	Quantity
A2317,0500	500 g
A2317,1000	1 kg
A2317,10006	6 x 1 kg
A2317,5000	5 kg
A2317,9010	10 kg
A2317,9025	25 kg

Benzoic acid grained pure Ph. Eur. USP



C

Specification:

Assay (titr.) 99.5 - 100.5 %
Appearance of solution ... complies
Behaviour against H₂SO₄ ... complies
Heavy metals (as Pb) max. 0.001 %

Identity complies
Melting point 121 - 124°C
Oxidizable substances ... complies
Sulfated ash max. 0.05 %

Water (K.F.) max. 0.7 %
Halogen compounds, halogenides max. 0.03 %

Order-No.	Quantity
A8060,0500	500 g
A8060,1000	1 kg
A8060,5000	5 kg

Benzoic acid amide see Benzamide BioChemica Page 131

Benzoic acid chloride see Benzoyl chloride Page 135

Benzoic acid lithium salt see Lithium benzoate pure Page 492

Benzoic acid sodium salt see Sodium benzoate pure Ph. Eur., NF Page 723

1,4-Benzoquinone see p-Benzoquinone for synthesis Page 134

p-Benzoquinone for synthesis

C

1,4-Cyclohexadiene-3,6-dione, 1,4-Benzoquinone, p-Quinone

$C_6H_4O_2$
 $M = 108.10$ g/mol
 CAS-No.: 106-51-4
 HS-No.: 29146990
 EC-No.: 203-405-2

Storage: RT
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/II
 UN2587
 WGK: 3
 Danger
 H400-H319-H335-H331-H315-H301
 P304+P340-P302+P352-P273-
 P305+P351+P338



Density (d 20°C/4°C) .. 1.32
 Melting point 112 - 115°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A0394,0100	100 g
A0394,0500	500 g
A0394,1000	1 kg

1 H-Benzotriazole see 1,2,3-Benzotriazole for synthesis Page 134

1,2,3-Benzotriazole for synthesis

C

1 H-Benzotriazole

$C_6H_5N_3$
 $M = 119.13$ g/mol
 CAS-No.: 95-14-7
 HS-No.: 29339980
 EC-No.: 202-394-1

Storage: RT
 LGK: 10 - 13

Class / PG: 6.1/III
 UN2811
 WGK: 2
 Danger
 H302-H319-H412-H228-H332
 P273-P305+P351+P338-P210

**Specification:**

Assay min. 99 %
 Ash max. 0.1 %
 pH (10 %; H_2O) 5 - 6
 Water (K.F.) max. 0.1 %

Order-No.	Quantity
A4727,0250	250 g
A4727,0500	500 g
A4727,1000	1 kg

N α -Benzoyl-DL-arginine p-nitroanilide hydrochloride BioChemica

B

L-BAPA

$C_{19}H_{22}N_6O_4 \cdot HCl$
 $M = 434.89$ g/mol
 CAS-No.: 911-77-3
 HS-No.: 29252900
 EC-No.: 213-011-2

Storage: 2-8°C

Melting point 268 - 275°C (dec.)

Specification:

Assay min. 99 %
 IR spectrum complies

Order-No.	Quantity
A5030,0001	1 g
A5030,0005	5 g

N α -Benzoyl-L-arginineamide hydrochloride monohydrate

B

BAA

$C_{13}H_{19}N_5O_2 \cdot HCl \cdot H_2O$
 $M = 331.80$ g/mol
 CAS-No.: 965-03-7
 HS-No.: 29252900

Storage: 2-8°C

Specification:

Assay (TLC) min. 99 %
 Identity (IR) complies

Order-No.	Quantity
A6273,0001	1 g
A6273,0005	5 g
A6273,0010	10 g

Comment: N α -Benzoyl-L-arginine amide (BAA) is a synthetic amino acid substrate. It is a competitive inhibitor of urokinase and substrate of cathepsin, papain, trypsin and other trypsin-like enzymes. Trypsin hydrolyzes arginine and lysine bonds.

N α -Benzoyl-L-arginine ethyl ester hydrochloride (BAEE) BioChemica

B

BAEE

$C_{15}H_{22}N_4O_3 \cdot HCl$
 $M = 342.83$ g/mol
 CAS-No.: 2645-08-1
 HS-No.: 29252900
 EC-No.: 220-157-0

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1

Melting point 128 - 130°C

Specification:

Assay (TLC) min. 98 %
 α 20°C/D; 2 %, H_2O -18° - -15°
 Water (K.F.) max. 1 %

Order-No.	Quantity
A3770,0001	1 g
A3770,0005	5 g
A3770,0010	10 g

Comment: N α -Benzoyl-L-arginine ethyl ester (BAEE) is a synthetic amino acid substrate. It is used as a substrate for papain and other cysteine proteinases and trypsin. The cleavage of the ester bond results in an increase of absorption at 253 nm. BAEE is watersoluble. Stock solutions may be prepared in a concentration of 250 mM.

Benzoyl chloride

Benzoic acid chloride

Boiling point 198°C
Melting point -1°C

C₇H₅ClO
M = 140.57 g/mol
CAS-No.: 98-88-4
HS-No.: 29163200
EC-No.: 202-710-8

Storage: RT
LGK: 3 B

Class / PG: 8/II
UN1736
WGK: 1
Danger
H317-H314-H302-H332-H312
P305+P351+P338-P280-
P301+P330+P331-P302+P352



Benzoyl chloride p. A.

C

Specification:

Assay (titr.) min. 99 %
Sulfated ash max. 0.005 %
Al max. 0.0005 %
Cd max. 0.0005 %

Cr max. 0.0005 %
Cu max. 0.0005 %
Fe max. 0.0005 %
Ni max. 0.0005 %

Pb max. 0.0005 %
Zn max. 0.0005 %

Order-No.	Quantity
A4579,1000	1 L
A4579,10006	6 x 1 L
A4579,2500	2.5 L

Benzoyl chloride pure

C

Specification:

Assay min. 99 %
Benzotrichloride max. 0.01 %
Benzyl chloride max. 0.01 %
Benzylidene chloride max. 0.01 %
Other aromatic comp. max. 0.07 %

Order-No.	Quantity
A4746,1000	1 L
A4746,10006	6 x 1 L
A4746,2500	2.5 L
A4746,25004	4 x 2.5 L

3β-Benzoyl-5-cholestene see Cholesteryl benzoate *BioChemica* Page 209
Benzoylstauroporine see PKC412 *BioChemica* Page 629
4-N-Benzoylstauroporine see PKC412 *BioChemica* Page 629
N⁶-Benzyladenine see 6-Benzylaminopurine *BioChemica* Page 136

Benzyl alcohol

Phenylcarbinol

Boiling point 205°C
Density (d 20°C/4°C) .. 1.046
Melting point -15°C
n 20°C/D 1.540

C₇H₈O
M = 108.14 g/mol
CAS-No.: 100-51-6
HS-No.: 29062100
EC-No.: 202-859-9

Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1
Warning
H332-H302
P271-P305+P351+P338



Benzyl alcohol p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
Free acid max. 0.005 %
Non-volatile matter max. 0.001 %
Sulfated ash max. 0.005 %
Benzaldehyde max. 0.1 %

Loss on drying max. 0.1 %
Chloride max. 0.0005 %
Al max. 0.0005 %
Cu max. 0.000002 %
Fe max. 0.00001 %

Pb max. 0.00001 %

Order-No.	Quantity
A1740,0500	500 ml
A1740,1000	1 L
A1740,10006	6 x 1 L
A1740,2500	2.5 L

Benzyl alcohol pure Ph. Eur., NF

C

Specification:

Assay (titr.) 98.0 - 100.5 %
Acidic reacting subst. complies
Acidity complies
Appearance of solution complies
Identity (IR) complies
Non-volatile matter max. 0.05 %
Peroxide number max. 5

Related subst. complies
n₂₀^o/D 1.538 - 1.541

Order-No.	Quantity
A0765,0500	500 ml
A0765,1000	1 L
A0765,10006	6 x 1 L
A0765,2500	2.5 L
A0765,25004	4 x 2.5 L
A0765,5000	5 L

6-Benzylaminopurine *BioChemica*

B

BAP, Cytokinin B, 6-BA, N⁶-Benzyladenine

C₁₂H₁₁N₅
M = 225.25 g/mol
CAS-No.: 1214-39-7
HS-No.: 29335995

Storage: RT

Warning
H315-H319-H335
P305+P351+P338



Melting point 230 - 233°C

Specification:

Plant cell culture tested
Assay min. 99 %
Heavy metals (as Pb) max. 0.005 %

Order-No.	Quantity
A7685,0001	1 g
A7685,0005	5 g
A7685,0025	25 g

Literature: (1) Crosby, K.E. *et al.* (1981) *Plant Physiol.* **68**, 985-988

(2) Dyer, D.J. *et al.* (1991) *Plant Physiol.* **84**, 240-243

(3) Sano, H. & Youssefian, S. (1994) *Proc. Natl. Acad. Sci. USA* **91**, 2582-2586

(4) Tuli, V. *et al.* (1964) *Science* **146**, 1477-1479

(5) Ishii, Y. *et al.* (2002) *Cell Growth Differ.* **13**, 19-26

Influence of 6-Benzylaminopurine on Fruit-Set and Seed Development in Two Soybean Genotypes.

Soybean Pod Set Enhancement with Synthetic Cytokinin Analogs.

Light and nutritional regulation of transcripts encoding a wheat protein kinase homolog is mediated by cytokinins.

N⁶-Benzyladenine: Inhibitor of Respiratory Kinases.

Control of Differentiation and Apoptosis of Human Myeloid Leukemia Cells by Cytokinins.

Comment: 6-Benzylaminopurine (BAP) is one of the most active synthetic cytokinin used in plant breeding and tissue culture. Several physiological effects are observed: regeneration of plants from callus, fruit-set and seed development, soybean pod set enhancement, hypocotyl elongation by elongation of cells and cell division, retarded senescence. Some of the effects observed are based on the stimulation of cell division. The transcription of the *wpk4* gene, coding for a wheat protein kinase homolog, is upregulated by BAP (3). Otherwise, the activity of respiratory kinases is inhibited (4). Assays with mammalian cells have shown that human myeloid leukemia cells are induced to differentiate into granulocytes upon treatment with BAP (5).

Solubility: Stock solutions of 6-Benzylaminopurine are prepared at a concentration of 1 mg/ml. The solvents of choice are e.g. 25 % (v/v) aqueous DMSO (2) or dissolving BAP in a small volume of 2 N NaOH and subsequent dilution to 1 mg/ml with water. A more complex buffered solution is described in ref. 1.

Benzyl carbinol see 2-Phenylethanol for synthesis Page 621

Benzyl coelenterazine see Coelenterazine H *BioChemica* Page 220

Benzylglucosinolate see Glucotropaeolin HPLC grade Page 379

Benzylpenicillin potassium salt see Penicillin G potassium salt Page 601

Benzylsulfonyl fluoride see PMSF *BioChemica* Page 630

Bergamottin HPLC grade

B

5-Geranyloxypsoralen
from *Oleum bergamottae*

C₂₁H₂₂O₄
M = 338.42 g/mol
CAS-No.: 7380-40-7
HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A7843,0020	20 mg
A7843,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum

BES

N,N-Bis-(2-hydroxyethyl)-2-aminoethane
sulfonic acid

C₆H₁₃NO₅S
M = 213.26 g/mol
CAS-No.: 10191-18-1
HS-No.: 29221985
EC-No.: 233-465-5

Storage: RT
Disposal: 4

WGK: 1

Melting point 152 - 156°C
Useful pH range pH 6.4 - 7.8
pK_a (20°C) 7.15

BES Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay min. 99 %
pH (1 %; H₂O) 4.1 - 4.5
Loss on drying max. 1 %
As max. 0.0001 %
Ca max. 0.0005 %

Cd	 max. 0.0001 %
Cu	 max. 0.0002 %
Fe	 max. 0.0001 %
Mg	 max. 0.0001 %
Pb	 max. 0.0001 %

A (1 cm/10 % in H₂O)
260 nm max. 0.05
280 nm max. 0.03

Order-No.	Quantity
A4637,0025	25 g
A4637,0100	100 g
A4637,0250	250 g

BES Buffer grade

B

Specification:

Assay (titr) min. 99 %
Heavy metals (as Pb) max. 0.0005 %
pH (1 %; H₂O) 4.1 - 4.5
Loss on drying max. 1 %

A (1 cm/10 % in H ₂ O)	
260 nm	 max. 0.05
280 nm	 max. 0.03

Order-No.	Quantity
A1062,0025	25 g
A1062,0100	100 g
A1062,0250	250 g
A1062,0500	500 g
A1062,1000	1 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477

(2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68

(3) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

(4) Chen, C. & Okayama, H. (1987) *Mol. Cell. Biol.* **7**, 2745-2752

Hydrogen ion buffers for biological research.

Hydrogen ion buffers.

Hydrogen ion buffers for biological research.

High-efficiency transformation of mammalian cells by plasmid DNA.

Comment: Reference (4) describes a simple calcium phosphate transfection protocol that achieves highly efficient transformation of mammalian cells with a BES-buffered salt solution (50 mM BES, pH 6.95; 280 mM NaCl; 1.5 mM Na₂HPO₄). This buffer substitutes for the commonly used Hepes-buffered saline. One of the crucial factors for obtaining efficient transformation is the pH (6.95) of the buffer.

Bestatin hydrochloride *BioChemica*

B

N-[(2*S*,3*R*)-3-Amino-2-hydroxy-4-phenylbutyryl]-L-leucine hydrochloride

$C_{16}H_{24}N_2O_4 \cdot HCl$
 $M = 344.84$ g/mol
 CAS-No.: 65391-42-6
 HS-No.: 29242998

Storage: -20°C

hygroscopic

Melting point 216 - 218°C

Specification:

Assay min. 98 %
 Solubility (2 %; H_2O) clear, colorless

Order-No.	Quantity
A2137,0005	5 mg
A2137,0010	10 mg
A2137,0025	25 mg

Literature: (1) Umezawa, H. *et al.* (1976) *J. Antibiotics* **29**, 97-99
 (2) Umezawa, H. (1982) *Ann. Rev. Microbiol.* **36**, 75-99
 (3) Mumford, R.A. *et al.* (1981) *Biochem. Biophys. Res. Com.* **103**, 565-572
 (4) Taylor, A. *et al.* (1993) *Biochemistry* **32**, 784-790

Bestatin, an inhibitor of aminopeptidase B, produced by actinomycetes. Low-molecular-weight enzyme inhibitors of microbial origin. Protease activities present in wheat germ and rabbit reticulocyte lysates. Inhibition of bovine lens Leucine Aminopeptidase by Bestatin: Number of binding sites and slow binding of this inhibitor.

Comment: Bestatin was isolated from *Streptomyces olivoreticuli* and is a competitive inhibitor of aminopeptidases (aminopeptidase B, leucine aminopeptidase, tripeptide aminopeptidase and aminopeptidase from the cell surface; ref. 1, 2, 4). These peptidases cleave the aminoterminal amino acids from peptides / proteins ('exopeptidases'). Bestatin (40 µg/ml) inhibits the aminopeptidase activity from wheat germ extracts and reticulocyte extracts by 95 % (3). The aminopeptidase activity in reticulocyte lysates is 100-300X lower, than in wheat germ extracts (3). At a concentration of 100 µg/ml, Bestatin does not show bactericidal and fungicidal activity and is very little toxic. An intraperitoneal injection of 300 mg/kg (mice) will not kill the animals (1).

The recommended working concentration is approx. 40 µg/ml (approx. 130 µM). Stock solutions are set up in methanol (1 - 5 mg/ml).

Betaine hydrochloride pure

B

(Carboxymethyl)trimethylammonium chloride, Acidol

$C_6H_{12}ClNO_2$
 $M = 153.61$ g/mol
 CAS-No.: 590-46-5
 HS-No.: 29239000
 EC-No.: 209-683-1

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1
 Danger
 H318
 P305+P351+P338-P313



Specification:

Assay (titr.) 98.0 - 100.5 %
 Heavy metals (as Pb) max. 0.001 %
 Identity (IR) complies
 Residue on ignition max. 0.1 %
 pH (2.5 %; H_2O ; 20°C) .. 1.0 - 2.0
 Loss on drying max. 0.5 %

Order-No.	Quantity
A7282,0250	250 g
A7282,1000	1 kg

beta-NGF see rHu NGF-β Page 564

Betululin HPLC grade

B

Lup-20(29)-en-3,28-diol, Betulinol
 from *Betula pendula*

$C_{30}H_{50}O_2$
 $M = 442.73$ g/mol
 CAS-No.: 473-98-3
 HS-No.: 29061900

Storage: 2-8°C

Warning
 H335
 P312-P261-P304+P340



Specification:

Assay min. 98 %

Order-No.	Quantity
A6745,0001	1 g

Comment: Documents included: HPLC-DAD with UV spectrum.

Betulinic acid HPLC grade

B

3β-Hydroxy-lup-20(29)-en-28-oic
 from *Platanus acerifolia*

$C_{30}H_{48}O_3$
 $M = 456.73$ g/mol
 CAS-No.: 472-15-1
 HS-No.: 29181998

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A5283,0020	20 mg
A5283,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Betululinol see Betulin HPLC grade Page 137

rM bFGF see rM bFGF Page 349

rHu bFGF see rHu bFGF (147) Page 348

rHu bFGF (154) see rHu bFGF (154) Page 348

BHL see rHu Galectin-1 Page 368

BHT 1 % in EtOH abs. see Butylated hydroxytoluene - Solution 1 % (in Ethanol) Page 173

Bicine

N,N-Bis-(2-hydroxyethyl)-glycine

C₆H₁₃NO₄

Storage: RT

WGK: 1

Melting range 185 - 192°C
Solubility (20°C) 100 g/L (H₂O)
Useful pH range pH 7.6 - 9.0
pK_a (20°C) 8.35

M = 163.17 g/mol
CAS-No.: 150-25-4
HS-No.: 29225000
EC-No.: 205-755-1

LGK: 10 - 13
Disposal: 4

Bicine Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.0005 %
Loss on drying max. 1 %

pH (1 %; H₂O) 4.0 - 5.0 (20°C)

260 nm max. 0.08
280 nm max. 0.05

Order-No.	Quantity
A3988,0100	100 g
A3988,0250	250 g
A3988,0500	500 g

Bicine Buffer grade

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.0005 %
pH (1 %; H₂O; 20°C) 4.0 - 5.0
Loss on drying max. 1 %

A (1 cm/0.1M in H₂O)
260 nm max. 0.08
280 nm max. 0.05

Order-No.	Quantity
A1024,0100	100 g
A1024,0250	250 g
A1024,0500	500 g
A1024,1000	1 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477

(2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68

(3) Werb, Z. *et al.* (1974) *Biochem. J.* **139**, 359-368

(4) Vodicka, P. *et al.* (1995) *Carcinogenesis* **16**, 1473-1481

(5) Eide, I. *et al.* (1995) *Carcinogenesis* **16**, 1603-1609

(6) Peterkofsky, A. *et al.* (1995) *Biochemistry* **34**, 8950-8959

Hydrogen ion buffers for biological research.

Hydrogen ion buffers.

Interaction of α₂-Macroglobulin with Proteinases.

DNA damage by styrene.

Uptake of hemoglobin and DNA adducts after inhalation of C2-C8 1-Alkanes (Olefines) in rats.

The *E. coli* adenylate cyclase complex: Requirements of the PTS protein for the stimulation by nucleotides.

Comment: Bicine is a versatile buffer. Its applications last from enzyme reaction buffers (T4 polynucleotide kinase ref. 4; Micrococcus nuclease ref. 5; adenylate cyclase ref. 6) to electrophoresis buffers (3). Bicine interferes with the BCA and Lowry protein assay. Ferricyanide slowly oxidizes bicine. In addition, its strong binding of copper ions may be disturbing. The working concentration lasts from 3 to 100 mM.

Bicinchoninic acid Protein Assay

B

Quantitation of proteins, Protein determination with Bicinchoninic acid

HS-No.: 38220000

Storage: RT

◆ Application

- for photometric protein determination in the range of 20 - 2000 µg/ml protein
- sufficient for determination in either 500 test tubes or 5000 micro plate assays

◆ Kit components

- Reagent A 1 L (BCA/tartrate in alkaline carbonate buffer)
- Reagent B 25 ml (4 % CuSO₄ · 5H₂O)

Order-No.	Quantity
A7787,0500	500 Tests

Comment: The Bicinchoninic assay for determination of proteins is a simple and sensitive photometric assay for proteins. It is faster and easier to handle than the Lowry assay, with greater tolerance to interference from non-ionic detergents and simple buffer salts. Proteins reduce alkaline Cu(II) to Cu(I). Bicinchoninic acid forms an intense purple complex with cuprous ions with an absorbance maximum at 562 nm. The absorbance is directly proportional to protein concentration.

Bicinchoninic acid Protein Assay Micro

B

Quantitation of proteins, Protein determination with Bicinchoninic acid Micro Scale

HS-No.: 38220000

Storage: RT

◆ Application

- for photometric protein determination in the micro range of 0.5 - 20 µg/ml protein
- sufficient for determination in either 480 test tubes or 3200 micro plate assays

◆ Kit components

- Reagent C 12 ml (4 % CuSO₄ · 5H₂O in H₂O)
- Reagent A 240 ml (tartrate in alkaline carbonate buffer)
- Reagent B 240 ml (4 % BCA in H₂O)

Order-No.	Quantity
A7845,0480	480 Tests

Bile Esculin Agar

C

HS-No.: 38220000		Storage: RT	
		LGK: 10 - 13	
Composition:		Specification:	
Agar 15.0 g/L		pH before autoclaving ... approx. 7.1 (20°C)	
Bacteriological Bile 20.0 g/L			
Esculin 1.0 g/L			
Ferric citrate 0.5 g/L			
Peptones 8.5 g/L			
		Order-No.	Quantity
		A5652,0500	500 g
		A5652,5000	5 kg

Literature: (1) Swan (1954) *J. Clin. Pathol.* **7**, 160

Comment: This differential medium is intended for the isolation and identification of enterococci / group D streptococci.
Directions: Suspend 45 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Bilirubin

from porcine	C ₃₃ H ₃₆ N ₄ O ₆	Storage: -20°C	WGK: 1
	M = 584.68 g/mol	LGK: 10 - 13	
	CAS-No.: 635-65-4		
	HS-No.: 29337900		
	EC-No.: 211-239-7		

Bilirubin BioChemica

B

Specification:		Order-No.	Quantity
Assay (photometr.) min. 98 %		A1392,0250	250 mg
Mol. Extinction coefficient (453 nm)		A1392,0001	1 g
..... min. 61000 cm ⁻¹ L		A1392,0005	5 g
mol ⁻¹ (CHCl ₃)			
Solubility (H ₂ O; 20°C) ... nearly insoluble			
Water (K.F.) max. 1 %			

Bilirubin pure

B

Specification:		Order-No.	Quantity
Ash max. 0.2 %		A1561,0001	1 g
Loss on drying max. 2 %		A1561,0005	5 g
Solubility (H ₂ O; 20°C) nearly insoluble			
Total N 8.5 - 9.8 %			

Literature: (1) Petryka, Z.J. & Watson, C.J. (1968) *J. Chromatography* **37**, 76-82
(2) Khan, M.M. et al. (1998) *J. Biochem. Biophys. Methods* **37**, 47-52

Separation of bile pigments by thin layer chromatography.
Visualization of serum albumin in electrophoresis gels with bilirubin.

Comment: Bilirubin specifically binds to serum albumin. This allows the visualization of albumin as a yellow band without further staining during electrophoresis. The sensitivity is approx. 20 µg albumin. The mobility will not be influenced (2). A stock solution of bilirubin has been prepared in 5 mM NaOH/1 mM EDTA and diluted with 25 mM Tris-Glycine buffer (pH 8.3). The bilirubin concentration has been determined by spectrophotometry with the molar absorption coefficient of 47500 M⁻¹ cm⁻¹ at 440 nm.

Bilobalid HPLC grade

B

from <i>Ginkgo biloba</i>	C ₁₅ H ₁₈ O ₈	Storage: 2-8°C
	M = 326.30 g/mol	LGK: 10 - 13
	CAS-No.: 33570-04-6	
	HS-No.: 29322985	

Specification:		Order-No.	Quantity
Assay min. 98 %		A6746,0010	10 mg
		A6746,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Binding silane see 3-Methacryloxypropyl trimethoxysilane Page 532
NHS-Biotin see (+)-Biotin-N-hydroxysuccinimide ester *BioChemica* Page 142

D(+)-Biotin

<i>Vitamin H</i>	$C_{10}H_{16}N_2O_3S$ $M = 244.31 \text{ g/mol}$ CAS-No.: 58-85-5 HS-No.: 29369000 EC-No.: 200-399-3	Storage: 2-8°C LGK: 10 - 13	WGK: 1
Melting point	 229 - 233°C		
Solubility (20°C)	 0.2 g/L (H ₂ O)		

D(+)-Biotin BioChemica

B

Specification:	Order-No.	Quantity
Assay (titr.) min. 99 %	A0969,0250	250 mg
α 25°C/D; 2 %, 0.1 N NaOH . +89° - +93°	A0969,0500	500 mg
Heavy metals (as Pb) max. 0.001 %	A0969,0001	1 g
Loss on drying max. 1 %		

Literature: (1) Knappe, J. (1970) *Ann. Rev. Biochem.* **39**, 757-776
(2) Bayer, E. & Wilchek, M. (1974) *Methods Enzymol.* **34 B**, 265-267
Review article: Mechanism of Biotin action.
Insolubilized Biotin for the purification of Avidin.

Comment: The highly specific affinity of Biotin to Avidin is used for the purification of Avidin from albumins. For affinity chromatography Biotin is often fixed on a Sepharose matrix with a Poly-L-Lysin spacer (ref. 2). The Biotin Avidin (Streptavidin) system has many advantages for the purification of factors, if one of the components is coupled to the factor.
Biotin is soluble in hot water, diluted acids and bases. It is insoluble in cold water, ethanol, ether and chloroform.

D(+)-Biotin pure Ph. Eur.

C

Specification:	Order-No.	Quantity
Assay (titr.) 98.5 - 101.0 %	A6417,0001	1 g
α 20°C/D; 1 %, 0.1 N NaOH . +89° - +93°	A6417,0005	5 g
Appearance of solution complies	A6417,0010	10 g
Heavy metals (as Pb) max. 0.001 %		
Identity complies		
Loss on drying max. 1 %		
Related subst. complies		
Sulfated ash max. 0.1 %		

Biotin-11-deoxyuridine 5'-triphosphate tetralithium salt see Biotin-11-dUTP Page 140

Biotin-11-dUTP

B

<i>Biotin-11-deoxyuridine 5'-triphosphate tetralithium salt</i> aqueous solution	$C_{28}H_{39}Li_4N_9O_{17}P_3S$ $M = 884.39 \text{ g/mol}$ HS-No.: 38220000	Storage: -20°C

Specification:	Order-No.	Quantity
Assay (NMR) min. 96 %	A5227,0100	100 µl
Concentration 1 mM		

Comment: Biotin-11-dUTP (Biotin-11-2'-deoxyuridine 5'-triphosphate tetralithium salt) is a widely used compound for non-radioactive DNA labeling. Biotin-11-dUTP can be enzymatically incorporated into DNA via nick-translation, random priming, 3'-end terminal labeling or in the process of PCR. The number '11' is the number of carbon atoms in the backbone of the linker between dUTP and biotin. The longer the linker is, the more effective interaction of biotin with avidin occurs. From the other side, the shorter the linker is, the more effective incorporation of dUTP into DNA can be provided. But it turned out that the length of linker '11' is optimal for the majority of applications. The product will be supplied as a 1 mM solution in 10 mM Tris - HCl, pH 7.5, 1 mM EDTA.

(+)-Biotinamidocaproate N-hydroxysuccinimidyl ester see Biotinamidohexanoic acid N-hydroxysuccinimide ester Page 141
6-(Biotinamidocaproylamido)caproic acid N-hydroxysuccinimide ester see Biotinamidohexanoyl-6-aminohexanoic acid N-hydroxysuccinimide ester Page 141
Biotinamidocaproyl hydrazide see (+)-Biotinamidohexanoic acid hydrazide Page 140

(+)-Biotinamidohexanoic acid hydrazide

B

<i>BACH, Hydrazide-LC-Biotin,</i> <i>Biotinamidocaproyl hydrazide, (+)-</i> <i>Biotin-X-hydrazide</i>	$C_{16}H_{29}N_5O_3S$ $M = 371.50 \text{ g/mol}$ CAS-No.: 109276-34-8 HS-No.: 29349990	Storage: -20°C Store with dessicant!	hygroscopic

Melting point	 195 - 199°C
Solubility	 DMSO, DMF

Specification:	Order-No.	Quantity
Assay min. 97 %	A7821,0025	25 mg
Identity (NMR) complies	A7821,0050	50 mg
	A7821,0100	100 mg

Comment: This biotinylation reagent Hydrazide-LC-Biotin differs from Hydrazide-Biotin only by the spacer arm. Applications are identical for both reagents.

Biotinamidohexanoic acid N-hydroxysuccinimide ester

B

(+)-Biotinamidocaproate N-hydroxysuccinimidyl ester, NHS-LC-Biotin, Succinimidyl 6-(biotinamido)hexanoate

$C_{20}H_{30}N_4O_6S$
 $M = 454.54$ g/mol
CAS-No.: 72040-63-2
HS-No.: 29349990

Storage: -20°C

Melting point 173 - 176°C
Solubility DMSO, DMF

Specification:

Assay min. 98 %
Identity (NMR) complies

Order-No.	Quantity
A7836,0025	25 mg
A7836,0050	50 mg
A7836,0100	100 mg

Comment: NHS-Biotin was modified resulting in NHS-LC-Biotin containing an aminocaproyl spacer to reduce the steric hindrance in binding avidin. This biotinylation reagent reacts with primary amines in the pH range 7 - 9.

6-(Biotinamidohexanoylamido)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt

B

Sulfo-NHS-LC-LC-Biotin

$C_{26}H_{40}N_5NaO_{10}S_2$
 $M = 669.74$ g/mol
HS-No.: 29349990

Storage: -20°C

hygroscopic

Solubility Water, DMSO, DMF

Specification:

Assay min. 92 %
Identity (NMR) complies

Order-No.	Quantity
A7930,0010	10 mg
A7930,0025	25 mg
A7930,0050	50 mg

Comment: The water-soluble biotinylation reagent Sulfo-NHS-LC-LC-Biotin has a longer spacer arm. Therefore, it is useful for labeling proteins on the outer surface of membranes. It forms a stable amide bond with primary amines in the pH range 7 - 9.

Biotinamidohexanoyl-6-amino hexanoic acid N-hydroxysuccinimide ester

B

Biotin-X-X-NHS, NHS-LC-LC-Biotin, 6-(Biotinamidocaproylamido)caproic acid N-hydroxysuccinimide ester, N-Succinimidyl N-[(biotinylamino)caproyl]-6-aminocaproate

$C_{26}H_{41}N_5O_7S$
 $M = 567.70$ g/mol
CAS-No.: 89889-52-1
HS-No.: 29349990

Storage: -20°C

Melting point 145 - 152°C
Solubility DMSO, DMF

Specification:

Assay min. 95 %
Identity (NMR) complies

Order-No.	Quantity
A7856,0010	10 mg
A7856,0025	25 mg
A7856,0050	50 mg

Comment: Another modification of NHS-Biotin resulted in NHS-LC-LC-Biotin containing a 14 atom spacer to further reduce the steric hindrance in binding avidin. This biotinylation reagent reacts with primary amines in the pH range 7 - 9 as well.

Biotin-cadaverine see N-(5-Aminopentyl)biotinamide trifluoroacetate salt Page 89

(+)-Biotin hydrazide

B

Hydrazide-biotin

$C_{10}H_{18}N_4O_2S$
 $M = 258.34$ g/mol
CAS-No.: 66640-86-6
HS-No.: 29349990

Storage: -20°C

Melting point 242 - 244°C
Solubility DMSO, DMF

Specification:

Assay min. 97 %
Identity (NMR) complies

Order-No.	Quantity
A7809,0050	50 mg
A7809,0100	100 mg

Comment: This carbohydrate-reactive reagent is used for labeling biologically active molecules such as glycoproteins, antibodies, nucleic acids or molecules with free carboxylic or keto groups. It reacts in the pH range of 4 - 6.

(+)-Biotin N-hydroxysuccinimide ester *BioChemica*

B

N-Hydroxysuccinimidobiotin, (+)-Biotin
N-succinimidyl ester, N-Succinimidyl D-
biotinate

C₁₄H₁₉N₃O₅S
M = 341.38 g/mol
CAS-No.: 35013-72-0
HS-No.: 29349990

Storage: -20°C

WGK: 3
P262-P260

Melting point 212 - 214°C

Specification:

Assay min. 95 %

Order-No.	Quantity
A7702,0025	25 mg
A7702,0100	100 mg
A7702,0250	250 mg
A7702,0001	1 g

Comment: NHS-Biotin is used in biotinylation of proteins and peptides. It forms a stable amide bond with primary amines in the pH range from 7 to 9.

Biotin pentafluorophenyl ester

B

FPF-Biotin

C₁₆H₁₅F₅N₂O₃S
M = 410.36 g/mol
HS-No.: 29349990

Storage: -20°C

Melting point 191 - 193°C

Solubility DMSO, DMF

Specification:

Assay min. 95 %

Identity (NMR) complies

Order-No.	Quantity
A7912,0025	25 mg
A7912,0050	50 mg
A7912,0100	100 mg
A7912,0250	250 mg

Comment: PFP-Biotin is a more reactive biotinylation reagent than NHS-Biotin, and it is easier to handle and store. It reacts with primary and secondary amines in the pH range from 7 - 9.

(+)-Biotin N-succinimidyl ester see (+)-Biotin-N-hydroxysuccinimide ester *BioChemica* Page 142

(+)-Biotin-3-sulfo-N-hydroxysuccinimide ester sodium salt *BioChemica*

B

*Sulfosuccinimidyl biotin, Sulfo-NHS-
Biotin*

C₁₄H₁₈N₃NaO₈S₂
M = 443.43 g/mol
CAS-No.: 119616-38-5
HS-No.: 29349990

Storage: -20°C

WGK: 3
hygroscopic
Warning
H361f-H335-H302-H332-H315-H312-
H319
P305+P351+P338-P280-P308+P313-
P261



Solubility (1 %; H₂O) . clear

Specification:

Assay (TLC) min. 95 %

Order-No.	Quantity
A7750,0010	10 mg
A7750,0050	50 mg

Comment: The water-soluble biotinylation reagent Sulfo-NHS-Biotin forms a stable amide bond with primary amines in the pH range 7 - 9.

(+)-Biotin-X-hydrazide see (+)-Biotinamidohexanoic acid hydrazide Page 140

Biotin-X-X-NHS see Biotinamidohexanoyl-6-amino hexanoic acid N-hydroxysuccinimide ester Page 141

9-Biotinylamino-4,7-dioxanonanoic acid N-hydroxysuccinimidyl ester

B

NHS-PEO3-Biotin

C₂₁H₃₂N₄O₈S
M = 500.58 g/mol
HS-No.: 29349990

Storage: -20°C

hygroscopic

Solubility Water, DMSO,
DMF

Specification:

Assay min. 95 %

Identity (NMR) complies

Order-No.	Quantity
A7867,0010	10 mg
A7867,0025	25 mg
A7867,0050	50 mg

Comment: This water-soluble amine reactive biotinylation reagent forms a stable amide bond with primary amines in the pH range 7 - 9. NHS-PEO3-Biotin is ideal for labeling antibodies and other biological materials eliminating aggregation and precipitation.

3-[[2-(Biotinylamino)ethyl]dithio]propanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt B

Sulfo-NHS-SS-Biotin $C_{19}H_{27}N_4NaO_9S_4$ Storage: -20°C hygroscopic
 $M = 606.70$ g/mol
 Solubility Water, DMSO, DMF HS-No.: 29349990

Specification:

Assay min. 85 %
 Identity (NMR) complies

Order-No.	Quantity
A7937,0025	25 mg
A7937,0050	50 mg
A7937,0100	100 mg

Comment: Sulfo-NHS-SS-Biotin is a water-soluble and cleavable biotinylating reagent similar to NHS-LC-Biotin. It forms stable amide bonds. The disulfide bond in the spacer arm is cleavable by TCEP (Tris(2-carboxyethyl)phosphine hydrochloride) and DTT (1,4-Dithiothreitol), respectively.

6-(Biotinylamino)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt B

Sulfo-NHS-LC-Biotin $C_{20}H_{29}N_4NaO_9S_2$ Storage: -20°C hygroscopic
 $M = 556.60$ g/mol
 Solubility Water, DMSO, DMF CAS-No.: 127062-22-0
HS-No.: 29349990

Specification:

Assay min. 90 %
 Identity (NMR) complies

Order-No.	Quantity
A7923,0010	10 mg
A7923,0025	25 mg
A7923,0050	50 mg

Comment: The water soluble biotinylating reagent Sulfo-NHS-LC-Biotin is similar to NHS-LC-Biotin. It forms a stable amide bond with primary amines in the pH range 7 - 9.

15-Biotinylamino-4,7,10,13-tetraoxapentadecanoic acid N-hydroxysuccinimidyl ester B

NHS-PEO5-Biotin $C_{25}H_{40}N_4O_{10}S$ Storage: -20°C hygroscopic
 $M = 588.68$ g/mol
 Solubility Water, DMSO, DMF HS-No.: 29349990

Specification:

Assay min. 95 %
 Identity (NMR) complies

Order-No.	Quantity
A7881,0010	10 mg
A7881,0025	25 mg
A7881,0050	50 mg

Comment: Another water-soluble amine-reactive biotinylation reagent is NHS-PEO5-Biotin, having the same spacer length as the LC-LC spacer. It forms a stable amide bond with primary amines in the pH range 7 - 9. NHS-PEO5-Biotin is ideal for labeling antibodies and other biological materials eliminating aggregation and precipitation.

12-Biotinylamino-4,7,10-trioxadodecanoic acid N-hydroxysuccinimidyl ester B

NHS-PEO4-Biotin $C_{23}H_{36}N_4O_9S$ Storage: -20°C hygroscopic
 $M = 544.63$ g/mol
 Solubility Water, DMSO, DMF HS-No.: 29349990

Specification:

Assay min. 95 %
 Identity (NMR) complies

Order-No.	Quantity
A7870,0010	10 mg
A7870,0025	25 mg
A7870,0050	50 mg

Comment: For comments please see A7867 (NHS-PEO3-Biotin).

Bis see Bisacrylamide Page 143

3,5-Bis[acetyl(amino)-2,4,6-triodobenzoic acid sodium salt see Sodium diatrizoate dihydrate Cell culture grade Page 730

Bisacrylamide

Bis, N,N-Methylenbisacrylamide, M-Bis $C_7H_{10}N_2O_2$ Storage: 2-8°C WGK: 3*
 $M = 154.17$ g/mol LGK: 10 - 13 Warning
 CAS-No.: 110-26-9 Disposal: 3 H302
 HS-No.: 29241900 P264-P330-P301+P312
 EC-No.: 203-750-9

Melting point > 300°C



Bisacrylamide Molecular biology grade B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99 %
 pH (1 %; H₂O) 5.5 - 7.0 (20°C)
 Water (K.F.) max. 0.25 %

A (1 cm¹ % in H₂O)
 290 nm max. 0.25
 310 nm max. 0.05
 400 nm max. 0.005

Order-No.	Quantity
A3636,0050	50 g
A3636,0100	100 g
A3636,0250	250 g

Bisacrylamide 4K ultrapure

B

Specification:

Assay (titr.)	min. 99 %	A (1 cm/1 % in H ₂ O)
pH (1 %; H ₂ O; 20°C)	5.5 - 7.0	290 nm max. 0.25
Water (K.F.)	max. 0.5 %	310 nm max. 0.10
		400 nm max. 0.01

Order-No.	Quantity
A1095,0050	50 g
A1095,0100	100 g
A1095,0250	250 g

Bisacrylamide 2K Standard grade, extrapure

B

Specification:

Assay (titr.)	min. 98 %	A (1 cm/1 % in H ₂ O)
Water (K.F.)	max. 1 %	290 nm max. 0.5
		310 nm max. 0.25

Order-No.	Quantity
A1096,0050	50 g
A1096,0100	100 g
A1096,0250	250 g
A1096,0500	500 g
A1096,1000	1 kg

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87 Electrophoresis in agarose and acrylamide gels.
 (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Page 6.36. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
 (3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: Polyacrylamide gels are formed by the polymerization of acrylamide and the cross-linking by a bifunctional agent, usually N,N'-Methylenebisacrylamide. The porosity of the gel is determined by the concentration of acrylamide and the ratio of acrylamide : cross-linker.
 Bisacrylamide is more hydrophobic than acrylamide, but can be dissolved in lukewarm water. Like acrylamide all solutions of bisacrylamide should be filtered.

Bisacrylamide - Solutions

Ready-to-use aqueous solution for the preparation of polyacrylamide gels

HS-No.: 38220000

Storage: RT
Disposal: 3

WGK: 3*
Warning
H302
P264-P301+P312-P330



Bisacrylamide - Solution (2 %) Molecular biology grade

B

Composition:

Bisacrylamide (A3636) 20 g/L

Specification:

DNases/RNases/Proteases
..... not detectable

Order-No.	Quantity
A3657,0500	500 ml
A3657,1000	1 L

Bisacrylamide 4K - Solution (2 %)

B

Composition:

Bisacrylamide 4K 20 g/L

Order-No.	Quantity
A1574,0500	500 ml
A1574,1000	1 L

Bisacrylamide 4K - Solution (1 %)

B

Composition:

Bisacrylamide 4K 10 g/L

Order-No.	Quantity
A2552,0500	500 ml
A2552,1000	1 L

Bisacrylamide 2K - Solution (2 %)

B

Composition:

Bisacrylamide 2K 20 g/L

Order-No.	Quantity
A0739,0500	500 ml
A0739,1000	1 L

2,2'-Bisacrylamino diethyldisulfide see N,N'-Bisacryloyl cystamine *BioChemica* Page 145



**Chemicals from
AppliChem -
all over the world !**

N,N'-Bisacryloyl cystamine BioChemica

B

2,2'-Bisacrylamino diethyldisulfide, BAC
Cross-linker

C₁₀H₁₆N₂O₂S₂
M = 260.38 g/mol
CAS-No.: 60984-57-8
HS-No.: 29309099
EC-No.: 262-546-8

Storage: 2-8°C
Disposal: 3

Warning
H319-H335-H315
P261-P305+P351+P338



Melting point 121 - 125°C

Specification:

Assay (TLC) min. 99 %
Sulfate max. 0.02 %
Ca max. 0.1 %

Mg max. 0.005 %
Na max. 0.2 %
Pb max. 0.0005 %

Order-No. Quantity
A3772,0001 1 g
A3772,0005 5 g

Literature: (1) Hansen, J.N. (1976) *Anal. Biochem.* **76**, 37-44

(2) Hansen, J.N. *et al.* (1980) *Anal. Biochem.* **105**, 192-201

(3) Hansen, J.N. (1981) *Anal. Biochem.* **116**, 146-151

Electrophoresis of RNA on a Polyacrylamide Gel which Contains Disulfide Cross-Linkages.

Chemical and Electrophoretic Properties of Solubilizable Disulfide Gels.

Use of Solubilizable Acrylamide Disulfide Gels for Isolation of DNA Fragments Suitable for Sequence Analysis.

Comment: Acrylamide gels, which are crosslinked by disulfide bridges, possess the advantage of being solubilizable by disulfide reducing agents such as β-mercaptoethanol or DTT. This enables to easily isolate RNA and DNA molecules from acrylamide gels (1-3). N,N'-Bisacryloylcystamine (BAC) is used as a reversible crosslinker. The preparation of acrylamide : BAC gels in the range of 3.5 % and 12.5 % is possible. The ratio acrylamide : BAC ranges from 12 : 1 to 19.1 : 0.9. During the development of these gels it was observed that under the conditions applied for the standard acrylamide : BIS gels, thiyl-radicals may form making the gels poorly or even not solubilizable. The following conditions for the polymerization reaction have been proven to be useful for preparing gels for the isolation of DNA fragments (3): A ratio of 19.1 : 0.9 (acrylamide : BAC); 0.1 % ammonium persulfate; 0.25 % TEMED, 1XTBE; polymerize at 41°C for 1 hour (Caution: This solution polymerizes at elevated temperature very rapidly. Pouring and comb insertion must be completed within 30 - 40 seconds). To solubilize the gel, place 3 - 5 g of the gel in 5 ml TBE supplemented with 0.1 ml β-mercaptoethanol or 140 mM DTT. The gel solubilizes within less than 30 minutes. The optimal pH is 8.3 (2). RNA gels are prepared with formamide (1). BAC dissolves in water at 50 - 60°C. A 1 % stock solution of BAC (or a mixture with acrylamide) is stored at room temperature for at least 2 months.

N,N'-Bisacryloyl-1,2-dihydroxy-1,2-ethylenediamine see 1,2-Dihydroxyethylene-bisacrylamide BioChemica Page 281

1,4-Bis-acryloylpiperazine see 1,4-Diacryloylpiperazine BioChemica Page 272

1,5-Bis-(4-allyldimethylammoniumphenyl)-pentane-3-one dibromide BioChemica

B

Melting point 202 - 212°C

C₂₇H₃₈Br₂N₂O
M = 566.40 g/mol
CAS-No.: 402-40-4
HS-No.: 29239000

Storage: RT
LGK: 10 - 13
Disposal: 9

Class / PG: 6.1/I
UN2811
Danger
H310-H300-H330
P302+P350-P264-P260-P280-P284



Specification:

Solubility (5 %; H₂O) clear, colorless

Order-No. Quantity
A3763,0025 25 mg
A3763,0100 100 mg

4,4'-Bis-(8-amino-3,6-disulfo-1-hydroxy- 2-naphthylazo)-3,3'-dimethylbiphenyl) tetrasodium salt see Trypan blue (C.I. 23850) Page 842

N,N'-Bis-(3-aminopropyl)-1,4-diaminobutane see Spermine BioChemica Page 760

N,N'-Bis-(3-aminopropyl)-1,4-diaminobutane tetrahydrochloride see Spermine tetrahydrochloride BioChemica Page 760

Bisbenzimidazole H33258 BioChemica

B

Hoechst 33258

C₂₅H₂₄N₆O · 3HCl · 5H₂O
M = 623.97 g/mol
CAS-No.: 23491-45-4
HS-No.: 29339980
EC-No.: 245-690-6

Storage: 2-8°C
LGK: 10 - 13

Warning
H302-H319-H315
P305+P351+P338



Melting point > 300°C

Specification:

Assay min. 98 %

Order-No. Quantity
A0740,0100 100 mg
A0740,0500 500 mg

Literature: (1) Hilwig, I. & Gropp, A. (1972) *Exp. Cell Res.* **75**, 122-126

(2) Hilwig, I. & Gropp, A. (1973) *Exp. Cell Res.* **81**, 474-477

(3) Labarca, C. & Paigen, K. (1980) *Anal. Biochem.* **102**, 344-352

(4) Stokke, T. & Steen, H.B. (1985) *J. Histochem. Cytochem.* **33**, 333-338

(5) Moe, D. *et al.* (1994) *J. Biochem. Biophys. Methods* **28**, 263-276

(6) Penketh, P.G. *et al.* (1997) *Anal. Biochem.* **252**, 210-213

Staining of constitutive heterochromatin in mammalian chromosomes with a new fluorochrome.

Decondensation of constitutive heterochromatin by H33258.

A simple, rapid and sensitive DNA assay procedure.

Multiple binding modes for Hoechst 33258 to DNA.

The protein effects on the DNA determination with H33258.

Fluorometric assay for the determination of DNA-DNA crosslinks with H33258 neutral pH value.

Comment: The benzimidazole derivative H33258 was developed at Hoechst and is used as an alternative to the DNA stain DAPI. It preferentially binds to AT-rich sequences (4), and leads to mitotic arrests and multinucleate cells (2). RNA will not be stained by H33258 (3). The stain may be dissolved in cell culture medium (2), Ringer or Hanks' salt solutions (1) or phosphate buffer (3). Depending on the author, it is used at concentrations ranging from 0.4 and 40 µg/ml solution. Maximum fluorescence excitation is achieved at 356 nm an maximal emission at 458 nm. It may be used in gel electrophoresis (1 µM), too. A stock solution is stable and prepared at a concentration of 1 mM and stored at +4°C. H33258 is less toxic than ethidium bromide, but suspected to be a carcinogen.

If the DNA quantity is determined in tissue homogenates, please note, that a protein concentration above 100 µg BSA equivalent will significantly influence the fluorescence of the stain. Besides, 1-2 µg/ml H33258 have to be employed, if the DNA quantity reaches the microgram level (5).

Another application of H33258 is the determination of 'covalent cross-linked' (cc) DNA. H33258 stains double stranded DNA very intense and DNA with mispaired basepairs very weak (6).

Bisbenzimidazole H33342 BioChemica

B

Hoechst 33342

$C_{27}H_{28}N_6O \cdot 3HCl \cdot 3H_2O$
 $M = 615.99 \text{ g/mol}$
CAS-No.: 23491-52-3
HS-No.: 29339980
EC-No.: 245-691-1

Storage: 2-8°C
LGK: 10 - 13

WGK: 3
Warning
H315-H302-H335
P264-P301+P312-P330



Specification:

Assay min. 98 %

Order-No.	Quantity
A0741,0050	50 mg
A0741,0100	100 mg

Literature: (1) Arndt-Jovin, D.J. & Jovin, T.M. (1977) *J. Histochem. Cytochem.* **25**, 585-589
(2) Lydon, M.J. *et al.* (1980) *J. Cell. Phys.* **102**, 175-181
(3) Lalande, M.E. *et al.* (1981) *Proc. Natl. Acad. Sci. USA* **78**, 363-367

Analysis and sorting of living cells according to deoxyribonucleic acid content.
Vital DNA staining and cell sorting by flow microfluorometry.
H33342 dye uptake as a probe for membrane permeability changes in mammalian cells.

Comment: Like H33258, the Hoechst stain H33342 is used for staining DNA. It binds to AT-rich sequences without intercalation (1). According to reference 2, both Hoechst dyes are not mutagenic at the concentrations employed. H33342 may be dissolved in cell culture medium (1, 2) or PBS / 25 % ethanol (1). Depending on the author, the working concentration ranges from 2 to 10 µM or 1 µg/ml, respectively. The dye is excited at 365 nm and the filter (emission) is 418 nm (1).
The uptake of H33342 by cells is reduced by serum in the medium. In dye-free medium, cells become quickly destained. DAPI and H33258 only do stain vital CHO cells quantitatively, while H33342 stains different cell types (2).

3',3''-Bis[bis(carboxymethyl)-aminomethyl]resorufin tetrasodium salt see Xylenol orange tetrasodium salt for metal titration Page 872
2',7'-Bis-(carboxyethyl)-5(6)-carboxyfluorescein see BCECF BioChemica Page 129
2',7'-Bis-(carboxyethyl)-5(6)-carboxy-fluorescein acetoxymethyl ester see BCECF-AM BioChemica Page 129
3,7-Bis-(dimethylamino)-1,9-dimethyl-diphenyl-5-ium hydrochloride see Dimethylmethylene blue hydrochloride BioChemica Page 285
N,N-Bis-[3-(D-glucanido)-propyl]-deoxycholate see Deoxy-BIGCHAP BioChemica Page 264
Bis-(2-hydroxyethyl)-amine see Diethanolamine BioChemica Page 277
N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulfonic acid see BES Page 136
N,N-Bis-(2-hydroxyethyl)-3-amino-2-hydroxypropanesulfonic acid see DIPS Buffer grade Page 290
N,N-Bis-(2-hydroxyethyl)-glycine see Bicine Page 138
Bis-(2-hydroxyethyl)-imino-tris-(hydroxy methyl)-methane see Bis-Tris Page 147
N,N-Bis(2-hydroxyethyl)-methylamine see N-Methyldiethanolamine Page 537
3,3-Bis-(4-hydroxyphenyl)-phthalide see Phenolphthalein (C.I. 764) Page 617

Bisindolylmaleimide BioChemica

B

Protein kinase C inhibitor, 2-[1-(3-Dimethylaminopropyl)-indole-3-yl]-3-(indole-3-yl)-maleimide

$C_{28}H_{24}N_4O_2$
 $M = 412.49 \text{ g/mol}$
CAS-No.: 133052-90-1
HS-No.: 29339980

Storage: -20°C
protected from light

Melting point 260 - 262°C

Specification:

Assay min. 98 %
Solubility (0.1 %; DMSO) ... clear, orange

Order-No.	Quantity
A1022,0002	2 mg
A1022,0005	5 mg
A1022,0010	10 mg

Literature: (1) Toullec, D. *et al.* (1991) *J. Biol. Chem.* **266**, 15771-15781

The Bisindolylmaleimide GF 109203X is a potent and selective inhibitor of Protein kinase C.

Comment: There are many different types of bisindolylmaleimides described in the literature with similar structures to staurosporine. In contrast to staurosporine bisindolylmaleimide is a specific inhibitor of protein kinase C (PKC). The bisindolylmaleimide from AppliChem corresponds to substance 15 in Ref. (1). Depending on the PKC subtype, the half-maximal inhibitory concentration (IC_{50}) varies from 0.01 - 0.02 µM. Bisindolylmaleimide is a competitive inhibitor of ATP for the binding to the catalytic domain of PKC.

1,8-Bis-maleimidodithienylethylene glycol see BM(PEO)₃ Page 152
1,13-Bis-maleimido-4,7,10-trioxadecane see BM(PEO-PPG)₂ Page 152
1,4-Bis-maleimidobutane see BMB Page 150
1,2-Bis-maleimidoethane see BMOE Page 152
1,6-Bis-maleimidohexane see BMH Page 152
Bismarck brown G see Bismarck brown Y (C.I. 21000) Page 147

Bismarck brown R (C.I. 21010)

B

Basic Brown 4, Vesuvius R

$C_{21}H_{24}N_8 \cdot 2HCl$
 $M = 461.40 \text{ g/mol}$
CAS-No.: 1052-38-6
HS-No.: 29270000
EC-No.: 226-541-4

Storage: RT
LGK: 10 - 13

Melting point 222°C

Specification:

Assay approx. 40 % stain
 λ_{max} (50 % EtOH) 466 - 476 nm

Order-No.	Quantity
A2176,0010	10 g
A2176,0025	25 g

Literature: (1) Choi, J.-K. *et al.* (1996) *Anal. Biochem.* **236**, 82-84

A modified Coomassie blue staining of proteins in polyacrylamide gels with Bismarck brown R.

Comment: For increasing the sensitivity and the swiftness of staining proteins in polyacrylamide gels a mixture of Coomassie Brilliant Blue R-250 (0.2 % w/v) and Bismarck brown R (0.05 % w/v) in a ratio of 1 : 0.75 can be used. In this system Bismarck brown is acting as an ion-pair reagent for Coomassie. Due to this effect the staining and destaining process takes 20 - 25 minutes only. The detection limit for BSA is about 25 µg. Both dyes are dissolved in a methanol-acetic acid-water - mixture (40 : 7 : 53).

Bismarck brown Y (C.I. 21000)

B

Basic Brown 1, Bismarck brown G,
Vesuvín

$C_{18}H_{18}N_8 \cdot 2HCl$
 $M = 419.32 \text{ g/mol}$
 CAS-No.: 10114-58-6
 HS-No.: 29270000
 EC-No.: 233-314-3

Storage: RT
 LGK: 10 - 13

Specification:

Assay (dye) approx. 50 %
 λ_{max} (50 % EtOH, HCl acidified)
 453 - 460 nm

Spectrum complies

Order-No.
A2272,0010
A2272,0025

Quantity
 10 g
 25 g

2,3-Bis-(2-methoxy-4-nitro-5-sulphophenyl)-2H-tetrazolium-5-carboxanilide sodium salt see XTT sodium salt BioChemica Page 870

Bis(methylenedioxy)protoberberin see Coptisin HPLC grade Page 245

Bis(sulfosuccinimidy)suberate disodium salt see BS² Page 164

N,O-Bis-(trimethylsilyl)-acetamide

C

BSA

$C_8H_{21}NOSi_2$
 $M = 203.43 \text{ g/mol}$
 CAS-No.: 10416-59-8
 HS-No.: 29310099
 EC-No.: 233-892-7

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 8(3)/II
 UN2920
 WGK: 1
 Danger
 EUH014-H226-H302-H314
 P305+P351+P338-P301+P330+P331-
 P280



Boiling point 72°C/35 Torr

Specification:

Assay (titr.) min. 99 %
 IR-Spectrum complies

Order-No.
A1652,0005
A1652,0025

Quantity
 5 ml
 25 ml

Comment: Silylating agent for numerous functional groups, applicable with DMF or pyridine.

Bis-(trimethylsilyl)-amine see 1,1,1,3,3,3-Hexamethyldisilazane GC grade Page 405

Bis-(trimethylsilyl)-trifluoroacetamide

C

2,2,2-Trifluoro-N,O-bis-(trimethylsilyl)-
acetamide, BSTFA

$C_8H_{18}F_3NOSi_2$
 $M = 257.41 \text{ g/mol}$
 CAS-No.: 25561-30-2
 HS-No.: 29310099
 EC-No.: 247-103-9

Storage: RT
 LGK: 3 A
 Disposal: 2

Class / PG: 3/III
 UN1993
 WGK: 3+
 Danger
 H314-H226
 P280-P305+P351+P338-P310



Boiling point 48-50°C/15 Torr

Specification:

Assay (titr.) min. 99 %
 IR-Spectrum complies

Order-No.
A1663,0005
A1663,0025

Quantity
 5 ml
 25 ml

Comment: Strong silylating agent for numerous functional groups; soluble in different solvents.

Bis-Tris

Bis-(2-hydroxyethyl)-imino-tris-(hydroxy
methyl)-methane

$C_8H_{19}NO_5$
 $M = 209.24 \text{ g/mol}$
 CAS-No.: 6976-37-0
 HS-No.: 29221985
 EC-No.: 230-237-7

Storage: RT
 LGK: 10 - 13

Melting point 102 - 105°C

Useful pH range pH 5.8 - 7.2

pK_a (20°C) 6.4

Bis-Tris Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.0005 %
 Loss on drying max. 1 %

pH (1 %; H_2O) 8.7 - 9.7
 Fe max. 0.0005 %

Order-No.
A3992,0025
A3992,0100
A3992,0250

Quantity
 25 g
 100 g
 250 g

Bis-Tris Buffer grade

B

Specification:		
Assay (titr.)	 min. 99 %	A (1 cm/0.1 M in H ₂ O)
Heavy metals (as Pb)	 max. 0.0003 %	280 nm max. 0.04
pH (1 %; H ₂ O)	 8.8 - 9.6	340 nm max. 0.02
Loss on drying	 1 %	
Fe	 max. 0.0005 %	

Order-No.	Quantity
A1025,0025	25 g
A1025,0100	100 g
A1025,0250	250 g
A1025,0500	500 g
A1025,1000	1 kg

Literature: (1) Massie, B. *et al.* (1995) *Bio/Technology* **13**, 602-608
 (2) Merabet, E. & Ackers, G.K. (1995) *Biochemistry* **34**, 8554-8563
 (3) Petri, V. *et al.* (1995) *Biochemistry* **34**, 9977-9984
 (4) Scopes, R.K. ed. (1994) *Protein Purification (Principles and Practice)* **3rd Edition**, p. 352; Springer-Verlag.

Improved vector for the production of HSV-ribonucleotide reductase R1 and R2.
 Calorimetric analysis of the Icl-repressor binding to the DNA operator site.
 Characterization of the binding of the TATA-binding factor to adenovirus E4 promoter.

Comment: Bis-Tris is an important buffer for protein and nucleic acid systems. Additionally it is used as a substitute for cacodylic acid buffer systems (4). The working concentration, mentioned in the literature (ref. 1-3), is 10 - 25 mM.

1,3-Bis-[tris-(hydroxymethyl)-methyl- amino]-propane see Bis-Tris-propane Page 148
 1,3-Bis-[tris-(hydroxymethyl)-methyl amino]-propane see Bis-Tris-propane Page 148

Bis-Tris-propane

Melting point	 164 - 165°C	C ₁₁ H ₂₆ N ₂ O ₆	Storage: RT
Useful pH range	 pH 10.4 - 11	M = 282.34 g/mol	LGK: 10 - 13
pK _a (25°C)	 6.8	CAS-No.: 64431-96-5	
		HS-No.: 29221985	
		EC-No.: 264-899-3	

Bis-Tris-propane Molecular biology grade

B

1,3-Bis-[tris-(hydroxymethyl)-methyl amino]-propane

Specification:		
DNases/RNases/Proteases	not detectable	Loss on drying max. 1 %
Assay (titr.)	 min. 98 %	pH (1 %; H ₂ O) 10.4 - 11.2
Heavy metals (as Pb)	 max. 0.0005 %	

Order-No.	Quantity
A3994,0050	50 g
A3994,0100	100 g

Bis-Tris-propane Buffer grade

B

1,3-Bis-[tris-(hydroxymethyl)-methyl amino]-propane

Specification:		
Assay (titr.)	 min. 98 %	A (1 cm/0.1 M in H ₂ O)
Heavy metals (as Pb)	 max. 0.001 %	280 nm max. 0.04
pH (1 %; H ₂ O)	 10.4 - 11.2	
Water (K.F.)	 max. 1 %	

Order-No.	Quantity
A1135,0050	50 g
A1135,0100	100 g
A1135,0250	250 g
A1135,0500	500 g

Literature: (1) Kharrat, A. *et al.* (1995) *EMBO J.* **14**, 3572-3584
 (2) Fisher, A.J. *et al.* (1995) *Biochemistry* **34**, 8960-8972
 (3) Lau, B. & Macdonald, P.M. (1995) *Biochim. Biophys. Acta* **1237**, 37-42
 (4) Peracchi, A. *et al.* (1995) *Biochemistry* **34**, 9459-9465
 (5) Baciou, L. & Michel, H. (1995) *Biochemistry* **34**, 7967-7972

Structure of the dsRNA binding domain of *E. coli* RNase III.
 X-Ray crystal structure of the myosin motor domain of *Dictyostelium discoideum*.
 Determination of the pK_a of membrane-bound N,N-Dimethylsphingosine.
 Monovalent cations influence the dynamix and functional properties of the tryptophan synthase α₂β₂-complex.
 Investigation of the reaction center of *Rhodobacter sphaeroides*.

Comment: Bis-Tris-propane is used as a buffer for the following types of experiments: purification of proteins, pK_a determinations and electron transfer measurements. The typical working concentrations are in the range of 5 - 50 mM.

Blasticidin S hydrochloride BioChemica

B

Melting point	 222 - 225°C (dec.)	C ₁₇ H ₂₆ N ₈ O ₅ · HCl	Storage: 2-8°C	Class / PG: 6.1/II
		M = 458.91 g/mol	LGK: 6.1 A	UN2811
		CAS-No.: 3513-03-9	Disposal: 9	WGK: 3
		HS-No.: 29419000		Danger
				H300
				P280-P309+P311



Specification:	
Assay	 min. 98 %

Order-No.	Quantity
A3784,0005	5 mg
A3784,0010	10 mg
A3784,0025	25 mg

Comment: Blasticidin S belongs to the nucleoside antibiotics and has been isolated from *Streptomyces griseochromogenes*. It inhibits the protein synthesis in prokaryotes and eukaryotes by preventing the formation of the peptide binding. Meanwhile, several blasticidin-resistance genes have been isolated (one acetyl transferase [*bls*] and two deaminases [*bsr* and *BSD*]). The genes coding for the deaminases are used as selection markers.
 Blasticidin S hydrochloride is soluble in water or buffers (e. g. HEPES). The working concentration depends on the organism chosen. For *E. coli* a concentration of 50- 100 µg/ml blasticidin S is applied, for mammalian cells only 3 to 10 µg/ml, in a few cases up to 30 µg/ml. Since the informations vary, it is recommended to determine the correct concentration for each cell line or organism. It is worth mentioning that high salt concentrations will inactivate blasticidin S. Therefore, for the selection of blasticidin S-resistant *E. coli*, the sodium chloride concentration has to be lowered from 10 to 5 g/L in LB broth / LB agar (10 g tryptone, 5 g yeast extract, 5 g NaCl per litre for the medium; additionally 15 g/L agar for the plates). Alternatively, the blasticidin concentration can be raised.
Stability: Blasticidin S hydrochloride is shipped at ambient temperature and should be stored refrigerated upon arrival. The dry substance is stable for at least 2 years. It is recommended to filter-sterilize the solutions. A stock solution is prepared at a concentration of 50 mg/ml. The pH value should not exceed pH 7, because of inactivation of blasticidin S. Solutions are stable for approx. 2 weeks at +4°C and frozen (-20°C) for approx. 2 months. Do not repeatedly freeze/thaw solutions.

Bleomycin see Bleomycin sulfate BioChemica Page 149

Bleomycin sulfate *BioChemica*

B

Bleomycin
Mixture of Bleomycin sulfate salts

CAS-No.: 9041-93-4
HS-No.: 29419000
EC-No.: 232-925-2

Storage: 2-8°C

Danger
H351
P280



Specification:

Solubility (2 %; H₂O) clear, colorless

Order-No.	Quantity
A3773,0001	1 mg
A3773,0005	5 mg

Blocking Reagent CA

B

Blocking Reagent for Hybridization assays and Western blots

HS-No.: 38220000

Storage: RT

- based on Casein from bovine (Origin: New Zealand)
- Biotin-free! suited for streptavidin-biotin systems
- used for blocking buffers and dilution of antibodies

Order-No.	Quantity
A3409,0010	10 g

Comment: The *Blocking Reagent CA* is used in hybridization and detection procedures using non-radioactive nucleic probes, and for Western blots. When immunoassays and hybridization assays, such as dot blots, Western blots, Southern blots or Northern blots are performed, there is nonspecific binding resulting in high background. In order to reduce the nonspecific binding, the *Blocking Reagent CA* is used to "block" unbound sites left after immobilization of the specific protein or after the hybridization with non-radioactive probe. It improves sensitivity and reduces background. Nonfat dry milk inhibits the streptavidin-biotin interaction due to its content of biotin. Since *Blocking Reagent CA* doesn't contain biotin, it may be used in systems making use of the streptavidin-biotin interaction.

Application:

Proteins: For blotting applications such as Western blots and dot blots, add 0.2 % (w/v) *Blocking Reagent CA* into TBST (0.1 % Tween 20 in TBS (see below)) or PBST (0.1 % Tween in PBS), heat to 75 - 80°C in a water bath or microwave oven, and stir well until dissolved. *Blocking Reagent CA* dissolves to give a milky solution. This reagent is used for blocking and for dilutions of antibodies. Do not use in PBST for alkaline phosphatase conjugate dilutions!

Nucleic acids: For hybridization applications add 0.2 % (w/v) *Blocking Reagent CA* to Tris buffered saline (50 mM Tris - HCl; pH 7.5; 150 mM NaCl), heat to 60 - 65°C in a water bath or microwave oven, and stir well until dissolved. *Blocking Reagent CA* dissolves to give a clear solution. Use for blocking after the wash steps, and before incubation in any enzyme-conjugate solution (e.g. Streptavidin-HRP or Streptavidin-AP).

Origin: The product is based upon casein, which is bovine origin. The product is manufactured in New Zealand, and only from animals born and raised in New Zealand. Therefore there is no possibility of BSE contamination.

Blood Agar Base

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Peptones 22.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving . . approx. 7.3 (20°C)

Order-No.	Quantity
A3352,0500	500 g
A3352,5000	5 kg

Literature: (1) APHA (1972) Comp. of Methods for the Microbiological Examination of Foods. 3rd ed.

Comment: This non-selective general-purpose medium is suitable for the isolation and cultivation of fastidious organisms.

Directions: Suspend 40 g in 950 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 50 ml of sterile defibrinated blood. Mix well before pouring. Store the prepared medium at 2-8°C.

Blotting membranes see Transfer Membranes: Nitrocellulose, Nylon, PVDF Page 825

Blue Agar

C

Bromothymol blue Lactose Agar

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Bromothymol blue 0.045 g/L
Lactose 10.0 g/L
Peptones 20.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving . . approx. 7.4 (20°C)

Order-No.	Quantity
A5657,0500	500 g
A5657,5000	5 kg

Comment: This non-selective medium is intended for the differentiation of lactose-positive and negative colonies, respectively.

Directions: Suspend 48 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium protected from light at 2-8°C.

Blue-Green-Red Protein Marker see Electrophoresis Size Marker/Standard Protein Page 325
Blue tetrazolium chloride see Tetrazolium blue chloride Page 809

BMB

B

N,N'-(Tetramethylene)dimalimide, 1,4-Bis-maleimidobutane

$C_{12}H_{12}N_2O_4$
M = 248.23 g/mol
CAS-No.: 28537-70-4
HS-No.: 29251995

Storage: 2-8°C

Melting point 199 - 200°C

Specification:

Assay min. 98 %
Identity (NMR) complies

Order-No.	Quantity
A7816,0050	50 mg
A7816,0100	100 mg

Comment:BMB is a thiol-reactive homobifunctional cross-linker with a midsized spacer. The maleimido groups react with -SH at pH 6.5 - 7.5. It is not cleavable and water-insoluble.

BME, Basal medium with Earle's salts

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

BME, Basal medium with Earle's salts

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1310,1000	1 L
A1310,5000	5 L
A1310,9010	10 L
A1310,9050	50 L

BME, Basal medium with Earle's salts

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1311,1000	1 L
A1311,5000	5 L
A1311,9010	10 L
A1311,9050	50 L

10X BME, Basal medium with Earle's salts

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1977,1000	1 L
A1977,5000	5 L
A1977,9010	10 L
A1977,9050	50 L

10X BME, Basal medium with Earle's salts

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1983,1000	1 L
A1983,5000	5 L
A1983,9010	10 L
A1983,9050	50 L

BME, Basal medium with Earle's salts (diploide)

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1984,1000	1 L
A1984,5000	5 L
A1984,9010	10 L
A1984,9050	50 L

BME, Basal medium with Earle's salts (diploide)

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1312,1000	1 L
A1312,5000	5 L
A1312,9010	10 L
A1312,9050	50 L

BME, Basal medium with Earle's salts, autoclavable

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1976,1000	1 L
A1976,5000	5 L
A1976,9010	10 L
A1976,9050	50 L

BME, Basal medium with Earle's salts			B
without L-Glutamine with 25 mM HEPES without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1915,1000	1 L	
	A1915,5000	5 L	
	A1915,9010	10 L	
	A1915,9050	50 L	

BME, Basal medium with Earle's salts			B
with L-Glutamine with 25 mM HEPES without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1916,1000	1 L	
	A1916,5000	5 L	
	A1916,9010	10 L	
	A1916,9050	50 L	

BME, Basal medium with Hanks' salts			
	HS-No.: 38210000	Storage: 2-8°C LGK: 10 - 13	hygroscopic P262

BME, Basal medium with Hanks' salts			B
without L-Glutamine without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1917,1000	1 L	
	A1917,5000	5 L	
	A1917,9010	10 L	
	A1917,9050	50 L	

BME, Basal medium with Hanks' salts			B
with L-Glutamine without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1313,1000	1 L	
	A1313,5000	5 L	
	A1313,9010	10 L	
	A1313,9050	50 L	

10X BME, Basal medium with Hanks' salts			B
without L-Glutamine without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1990,1000	1 L	
	A1990,5000	5 L	
	A1990,9010	10 L	
	A1990,9050	50 L	

10X BME, Basal medium with Hanks' salts			B
with L-Glutamine without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1988,1000	1 L	
	A1988,5000	5 L	
	A1988,9010	10 L	
	A1988,9050	50 L	

BME, Basal medium with Hanks' salts, autoclavable			B
without L-Glutamine without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1978,1000	1 L	
	A1978,5000	5 L	
	A1978,9010	10 L	
	A1978,9050	50 L	

BME, Basal medium with Hanks' salts			B
without L-Glutamine with 25 mM HEPES without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1918,1000	1 L	
	A1918,5000	5 L	
	A1918,9010	10 L	
	A1918,9050	50 L	

BME, Basal medium with Hanks' salts			B
with L-Glutamine with 25 mM HEPES without Sodium hydrogen carbonate	Order-No.	Quantity	
	A1919,1000	1 L	
	A1919,5000	5 L	
	A1919,9010	10 L	
	A1919,9050	50 L	

BMH

B

<i>1,6-Bis-maleimido</i> hexane	$C_{14}H_{16}N_2O_4$ $M = 276.29$ g/mol CAS-No.: 4856-78-5 HS-No.: 29251995	Storage: 2-8°C
Melting point	138 - 139°C	

Specification:

Assay	min. 95 %
Identity (NMR)	complies

Order-No.	Quantity
A7859,0050	50 mg
A7859,0100	100 mg

Comment:BMH is a short spacer thiol-reactive homobifunctional cross-linker. The maleimido groups react with -SH at pH 6.5 - 7.5. It is not cleavable and water-insoluble.

BMOE

B

<i>1,2-Bis-maleimido</i> ethane	$C_{10}H_8N_2O_4$ $M = 220.18$ g/mol HS-No.: 29251995	Storage: 2-8°C
Melting point	190 - 192°C	

Specification:

Assay	min. 99 %
Identity (NMR)	complies

Order-No.	Quantity
A7907,0050	50 mg
A7907,0100	100 mg

Comment:BMOE is a short spacer thiol-reactive homobifunctional cross-linker. The maleimido groups react with -SH at pH 6.5 - 7.5. It is not cleavable and water-insoluble.

BM(PEO)₃

B

<i>3,6-Dioxaoctamethylene dimaleimide, 1,8-Bis-maleimidotriethyleneglycol</i>	$C_{14}H_{16}N_2O_6$ $M = 308.29$ g/mol HS-No.: 29251995	Storage: 2-8°C
Melting point	93 - 94°C	

Specification:

Assay	min. 99 %
Identity (NMR)	complies

Order-No.	Quantity
A7950,0050	50 mg
A7950,0100	100 mg

Comment:This water soluble thiol-reactive homobifunctional cross-linker reacts with -SH at pH 6.5 - 7.5 with the maleimido groups.

BM(PEO-PPO)₂

B

<i>1,13-Bis-maleimido-4,7,10-trioxadecane</i>	$C_{18}H_{24}N_2O_7$ $M = 380.39$ g/mol HS-No.: 29251995	Storage: 2-8°C
Melting point	61 - 63°C	

Specification:

Assay	min. 99 %
Identity (NMR)	complies

Order-No.	Quantity
A7826,0050	50 mg
A7826,0100	100 mg

Comment:The cross-linker BM(PEO-PPO)₂ is a bismaleimide, connected by a dimer, the copolymer unit PEO (polyethylene oxide) and PPO (polypropylene oxide), since it is made from 1,13-diamino-4,7,10-trioxadecane, and not from 1,11-diamino-3,6,9-trioxaoctane like BM(PEO)₄. In practice, having two extra methylene groups at each end, the spacer of this compound is slightly longer than those of BM(PEO)₄ or BM(PEO)₃, respectively. This water soluble thiol-reactive homobifunctional cross-linker reacts with -SH at pH 6.5 - 7.5 with the maleimido groups.

BMPS

B

<i>N-Succinimidyl-3-maleimido propionate, N-(β-Maleimidopropoxy) succinimide ester</i>	$C_{11}H_{10}N_2O_6$ $M = 266.21$ g/mol CAS-No.: 55750-62-4 HS-No.: 29251995	Storage: 2-8°C
Melting point	167 - 168°C	

Specification:

Assay	min. 99 %
Identity (NMR)	complies

Order-No.	Quantity
A7897,0050	50 mg
A7897,0100	100 mg

Comment:BMPS is a non-cleavable and water-insoluble aliphatic heterobifunctional reagent. It reacts toward sulfhydryl and primary amine groups. The NHS ester reacts with primary amines at pH 7 - 9, while the maleimide reacts with thiols at pH 6.5 - 7.5.

rHu BMP-2



B

recombinant Human Bone Morphogenetic Protein-2
lyophilized from a conc. (1 mg/ml) sterile solution containing 10 mM sodium citrate, pH 3.0
from *E. coli*

$M = 26.02$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8356,0002	2 µg
A8356,0010	10 µg
A8356,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

BMP-2 belongs to the Bone-growth regulatory factors that are members of the transforming growth factor-beta (TGF-beta) superfamily of proteins. They are synthesized as large precursor molecules which are cleaved by proteolytic enzymes. The active form can consist of a dimer of two identical proteins or a heterodimer of two related bone morphogenetic proteins. Recombinant Human Bone Morphogenetic protein-2 is a homodimeric, non-glycosylated, Polypeptide chain containing 115 amino acids.

rHu BMP-4



B

recombinant Human Bone Morphogenetic Protein-4
lyophilized without additives
from HeLa cells

$M = 31 - 36$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin (LAL test) max. 1.0 EU/µg
Assay min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8532,0002	2 µg
A8532,0010	10 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

Avoid repeated freeze/thaw cycles.

Boc-AAA-NHO-Bz see Elastase Inhibitor I Page 319
Boc-Ala-Ala-Ala-NHO-Bz see Elastase Inhibitor I Page 319
Boc-Ala-Ala-NHO-Bz see Subtilisin Inhibitor I Page 775

Boc-Ala-Pro-Phe-NHO-Bz



B

Solubility soluble in EtOH,
DMSO, Acetonitrile

$C_{29}H_{36}N_4O_7$
 $M = 552.6$ g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8755,0001	1 mg
A8755,0005	5 mg

Boc-Pro-Phe-NHO-Bz-p-Cl



B

Cathepsin B,L,S Inhibitor

$C_{26}H_{30}N_3O_6Cl$
 $M = 517.0$ g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8724,0001	1 mg
A8724,0005	5 mg

Boc-Val-Phe-NHO-Bz-p-Cl see Cathepsin/Subtilisin Inhibitor Page 189
Boc-VF-NHO-Bz-p-Cl see Cathepsin/Subtilisin Inhibitor Page 189
recombinant Human Bone Morphogenetic Protein-4 see rHu BMP-4 Page 153
recombinant Human Bone Morphogenetic Protein-2 see rHu BMP-2 Page 153

Bone oil

C

CAS-No.: 8001-85-2
HS-No.: 15060000

Storage: RT

Order-No.	Quantity
A4803,0100	100 ml
A4803,1000	1 L
A4803,5000	5 L
A4803,9025	25 L

Borax see di-Sodium tetraborate decahydrate Page 754

Boric acid

Melting point 185°C (dec.)
Solubility (20°C) 50 g/L (H₂O)

BH₃O₃
M = 61.83 g/mol
CAS-No.: 10043-35-3
HS-No.: 28100090
EC-No.: 233-139-2

Storage: RT
LGK: 6.1 B
Disposal: 28

WGK: 1
Danger
H360FD
P308+P313-P201

**Boric acid Molecular biology grade**

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.8 %
pH (5 %; H₂O; 20°C) 3.5 - 4.8
Loss on drying max. 0.3 %
Chloride max. 0.001 %

Phosphate max. 0.0002 %
Sulfate max. 0.005 %
As max. 0.0001 %
Ca max. 0.002 %
Cu max. 0.0005 %

Fe max. 0.0002 %
Mg max. 0.0005 %
Na max. 0.002 %
Pb max. 0.0005 %

Order-No.	Quantity
A2940,0500	500 g
A2940,1000	1 kg
A2940,10006	6 x 1 kg
A2940,5000	5 kg

Boric acid BioChemica

B

Specification:

Assay (titr.) min. 99.8 %
Heavy metals (as Pb) max. 0.001 %
pH (5 %; H₂O; 20°C) 3.5 - 4.8
Loss on drying max. 0.3 %
Chloride max. 0.001 %
Phosphate max. 0.0002 %

Sulfate max. 0.005 %

A (1 cm / 0.05 M in water)
260 nm max. 0.01
280 nm max. 0.01

Order-No.	Quantity
A1097,0500	500 g
A1097,1000	1 kg
A1097,10006	6 x 1 kg
A1097,5000	5 kg
A1097,9010	10 kg

Boric acid p. A.

C

Specification:

Assay (titr.) min. 99.8 %
pH (5 %; H₂O; 20°C) 3.5 - 4.8
Loss on drying max. 0.3 %
Chloride max. 0.001 %
Phosphate max. 0.0002 %
Sulfate max. 0.005 %
As max. 0.0001 %

Ca max. 0.002 %
Cu max. 0.0005 %
Fe max. 0.0002 %
Mg max. 0.0005 %
Na max. 0.002 %
Pb max. 0.0005 %

Order-No.	Quantity
A3581,0500	500 g
A3581,1000	1 kg
A3581,10006	6 x 1 kg
A3581,5000	5 kg
A3581,9010	10 kg
A3581,9025	25 kg

Boric acid Buffer grade

B

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
pH (5 %; H₂O; 20°C) 3.5 - 4.8
Loss on drying max. 0.5 %

Chloride max. 0.005 %
Sulfate max. 0.01 %

Order-No.	Quantity
A0768,0500	500 g
A0768,1000	1 kg
A0768,5000	5 kg

Literature: (1) Peacock, A.C. & Dingman, C.W. (1968) *Biochemistry* 7, 668-674

(2) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* 152, 61-87

Molecular weight estimation and separation of ribonucleic acid by electrophoresis in Agarose-Acrylamide composite gels.
Electrophoresis in agarose and acrylamide gels.

Comment: The best and most commonly used running buffer for non-denaturing or denaturing polyacrylamide gels is a Tris-Borate-EDTA buffer (TBE) with a pH of 8.3. Usually the buffer is prepared as a 10X concentrate (Tris base 890 mM, Boric acid 890 mM and EDTA disodium salt dihydrate 250 mM)

Boric acid pure Ph. Eur., NF

C

Specification:

Assay (titr.) 99.5 - 100.5 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.0015 %
Identity complies
Loss on drying max. 0.5 %
Solubility in EtOH complies

pH (3.3 %; H₂O) 3.8 - 4.8
Organic substances complies
Sulfate max. 0.045 %

Order-No.	Quantity
A2318,1000	1 kg
A2318,10006	6 x 1 kg
A2318,5000	5 kg
A2318,9010	10 kg
A2318,9025	25 kg

Boric acid - Solutions (w/v)

HS-No.: 38220000
EC-No.: 233-139-2

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Boric acid - Solution (20 g/L) for determination of ammonia

C

Aqueous solution
DIN 38406 (Part 5)

Composition:

Boric acid 20 g/L

Order-No.	Quantity
A1166,0500	500 ml
A1166,1000	1 L
A1166,5000	5 L

Boric acid - Solution, saturated p. A.

C

Composition:

Boric acid (A3581) approx. 50 g/L

Order-No.	Quantity
A2644,1000	1 L
A2644,5000	5 L

Boric acid - Solution 4 % p. A.			C
Composition: Boric acid (A3581) 40 g/L		Order-No. A2619,1000 A2619,10006 A2619,5000	Quantity 1 L 6 x 1 L 5 L

Boric acid - Solution 2 % p. A.			C
Composition: Boric acid (A3581) 20 g/L		Order-No. A2636,1000 A2636,5000	Quantity 1 L 5 L

Boric acid - Solution 1 % p. A.			C
Composition: Boric acid (A3581) 10 g/L		Order-No. A2614,1000 A2614,5000	Quantity 1 L 5 L

Boric acid - Standard volumetric solutions

HS-No.: 38220000 Storage: RT WGK: 1
EC-No.: 233-139-2 LGK: 10 - 13
Disposal: 28

Boric acid - Standard volumetric solution (0.5 M)			C
<i>0.5 mol/L (1.5 N Solution)</i>			
Specification: Factor limits 0.998 - 1.002		Order-No. A3977,1000 A3977,5000	Quantity 1 L 5 L

Boric acid - Standard volumetric solution (0.2 M)			C
<i>0.2 mol/L (0.6 N Solution)</i>			
Specification: Factor limits 0.998 - 1.002		Order-No. A4139,1000 A4139,5000	Quantity 1 L 5 L

Boric acid - Standard volumetric solution (0.1 M)			C
<i>0.1 mol/L (0.3 N Solution)</i>			
Specification: Factor limits 0.998 - 1.002		Order-No. A3953,1000 A3953,5000	Quantity 1 L 5 L

Boron nitride pure

Melting point 2700 - 3000°C	BN	Storage: RT	C
Solubility (20°C) almost insoluble	M = 24.82 g/mol	LGK: 10 - 13	
	CAS-No.: 10043-11-5	Disposal: 28	
	HS-No.: 28500020		
	EC-No.: 233-136-6		
Specification: Assay (N) min. 98 %		Order-No. A1471,0025 A1471,0050	Quantity 25 g 50 g

α-Boswellic acid HPLC grade

(3α,4β)-3-Hydroxy-olean-12-en-23-oic acid from <i>Boswellia serrata</i>	C ₃₀ H ₄₈ O ₃ M = 456.73 g/mol CAS-No.: 471-66-9 HS-No.: 29420000	Storage: 2-8°C	B
Specification: Assay min. 99 %		Order-No. A5285,0010 A5285,0020	
		Quantity 10 mg 20 mg	

Comment: Documents included: HPLC-DAD with UV spectrum.

β-Boswellic acid HPLC grade

B

(3α,4β)-3-Hydroxyurs-12-en-23-oic acid
from *Boswellia serrata*

C₃₀H₄₈O₃
M = 456.73 g/mol
CAS-No.: 631-69-6
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5278,0010	10 mg
A5278,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Bradford - Solution for Protein Determination

B

HS-No.: 38220000

Storage: 2-8°C

WGK: 1
Warning
H315-H319
P305+P351+P338-P301+P330+P331-
P280



Order-No.	Quantity
A6932,0100	100 ml
A6932,0250	250 ml
A6932,0500	500 ml

Literature: (1) Bradford, M.M. (1976) *Anal. Biochem.* **72**, 248-254

A Rapid and Sensitive Method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding.

recombinant Human Brain-Derived Neurotrophic Factor see rHu BDNF Page 130

Brain Heart Infusion Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Buffers 2.5 g/L
Glucose 2.0 g/L
Peptones 27.5 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving . . . approx. 7.4 (20°C)

Order-No.	Quantity
A5655,0500	500 g
A5655,5000	5 kg

Literature: (1) Howell, A. (1948) *Public Health Reports* **63**, 173

Comment: This highly nutritious medium is suitable for the cultivation of fastidious organisms.

Directions: Suspend 50 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

BrdU see 5-Bromo-2'-deoxyuridine *BioChemica* Page 160

Brefeldin A *BioChemica*

B

from *Eupenicillium brefeldianum*

C₁₆H₂₄O₄
M = 280.40 g/mol
CAS-No.: 20350-15-6
HS-No.: 29419000

Storage: 2-8°C
LGK: 10 - 13

Melting point 200 - 202°C

Specification:

Assay (TLC) min. 99 %
Solubility (1 %; MeOH) clear, colorless to
slightly yellowish

Order-No.	Quantity
A2138,0001	1 mg
A2138,0005	5 mg
A2138,0010	10 mg
A2138,0025	25 mg

Literature: (1) Misumi, Y. *et al.* (1986) *J. Biol. Chem.* **261**, 11398-11403

(2) Fujiwara, T. *et al.* (1988) *J. Biol. Chem.* **263**, 18545-18552

(3) Prydz, K. *et al.* (1992) *J. Cell Biol.* **119**, 259-272

(4) Klausner, R.D. *et al.* (1992) *J. Cell Biol.* **116**, 1071-1080

(5) Hunziker, W. *et al.* (1992) *FEBS Lett.* **307**, 93-96

(6) Mendez, A.J. (1995) *J. Biol. Chem.* **270**, 5891-5900

Comment: Brefeldin A is a macrolide antibiotic from *Eupenicillium brefeldianum* with an antiviral activity. In many mammalian cells, brefeldin A disturbs the mechanism of the separation of the endoplasmic reticulum and the Golgi apparatus. It inhibits the intracellular protein transport and the secretion of proteins (1-6).

Stock solutions are prepared in concentrations of 1mg/ml (ref. 1) or 2.5 and 10 mg/ml (ref. 2) in methanol (1, 2) or ethanol (6). They should be stored at -20°C. The effective working concentration is 0.1 - 10 µg/ml, depending on the assay system.

Novel blockade by Brefeldin A of intracellular transport of secretory proteins in cultured rat hepatocytes.

Brefeldin A causes disassembly of the Golgi complex and accumulation of secretory proteins in the endoplasmic reticulum.

Effect of Brefeldin A on endocytosis, transcytosis and transport to the Golgi complex in polarized MDCK cells.

Brefeldin A: Insights into the control of membrane traffic and organelle structure.

Brefeldin A and the endocytotic pathway: Possible implications for membrane traffic and sorting.

Monensin and Brefeldin A inhibit the HDL-mediated cholesterol efflux.

Brij® 35 BioChemica

B

Laureth-23, Dodecylpoly-(ethyleneglycol)ether)₂₃

C₅₈H₁₁₈O₂₄
M = 1198.56 g/mol
CAS-No.: 9002-92-0
HS-No.: 34021300

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 2

Aggregation No. (N_{ag}) .40
CMC (25°C) 9 x 10⁻⁵ mol/L
Classification: nonionic detergent
Melting range 40 - 42°C

Specification:

Loss on drying max. 4 %

Order-No.	Quantity
A1381,0250	250 g
A1381,0500	500 g
A1381,1000	1 kg

® registered trademark of Atlas Chemical Co.

Literature: (1) Moore, S. & Stein, W.H. (1954) *J. Biol. Chem.* **211**, 893-906

Procedure for the chromatographic determination of amino acids on 4 % cross-linked sulfonated polystyrene resins.

(2) Helenius, A. *et al.* (1979) *Methods Enzymol.* **56**, 734-749

Review article: Properties of detergents.

Comment: Brij® 35 is a non-ionic detergent with a polyoxyethylene head group. As a rule, these detergents do not denature proteins, making them a useful tool in studying proteins in their native state. Proteins, that are composed of several subunits will not dissociate.

Preparation of a 0.5 % solution Brij® 35: Dissolve 0.5 g Brij® 35 in 100 ml hot water. If the detergent will not stay completely in solution at room temperature, enlarge the volume with water to 150 ml and use in the experiment 1.35X larger quantities (1).

Brij® 35 - Solution 10 % peroxide-free

B

aqueous solution

HS-No.: 38220000

Storage: 2-8°C
protected from light
under argon
LGK: 10 - 13
Disposal: 14

WGK: 2

Specification:

Peroxides (as H₂O₂) max. 0.0001 %

Order-No.	Quantity
A1286,0025	25 ml
A1286,0100	100 ml

® registered trademark of Atlas Chemical Co.

Brij® 58 BioChemica

B

C₁₆E₂₀, Polyethylene glycol hexadecylether

C₅₆H₁₁₄O₂₁
M = 1123.51 g/mol
CAS-No.: 9004-95-9
HS-No.: 34021300

Storage: RT
LGK: 10-13
Disposal: 3

WGK: 3*

CMC 0.077 mM
Classification: nonionic detergent
Main component
.....
Eicosäthyleneglycolhexadecylether
Melting range 36 - 40°C

Specification:

Water (K.F.) max. 3 %

Order-No.	Quantity
A1669,0250	250 g
A1669,0500	500 g
A1669,1000	1 kg
A1669,10006	6 x 1 kg

® registered trademark of Atlas Chemical Co.

Literature: (1) Ridsdale, J.A. & Clegg, J.S. (1991) *J. Cell. Physiol.* **147**, 242-247

(2) Rush, J.S. *et al.* (1992) *Anal. Biochem.* **207**, 304-310

(3) Kellermayer, M. *et al.* (1994) *J. Cell. Physiol.* **159**, 197-204

(4) Ibarz, E. *et al.* (1994) *Biochim. Biophys. Acta* **1196**, 93-96

(5) Macri, F. *et al.* (1994) *Biochim. Biophys. Acta* **1215**, 109-114

(6) Córdoba, M.C. *et al.* (1995) *Biochem. Biophys. Res. Com.* **216**, 1054-1059

Evidence for cooperativity of protein dissolution in Brij® 58 permeabilized L929 cells.

Direct assay of membrane associated protein kinase C activity in B Lymphocytes in the presence of Brij® 58.

Release of potassium, lipids and proteins from nonionic detergent treated chicken red blood cells.

Activation of plant plasma membrane H⁺-ATPase by the non-ionic detergent Brij® 58.

Lipoxygenase activity associated with isolated soybean plasma membranes.

Topography of the electron transport proteins from *Allium cepa* plasma membranes.

Comment: Brij® 58 is a non-ionic detergent. Incubation of living cells with this detergent produces the so-called cytoskeleton. Proteins leak from the cells after a lag phase, depending on the detergent concentration, time of exposure and cell type (1). During this lag phase, lasting for 30 minutes in erythrocytes, the cytoplasm of the cells stays "intact" in the presence of the permeabilized membrane (3). Enzyme activity may be determined in the presence of Brij® 58. Up to a concentration of 0.5 %, the activity of protein kinase C from membrane fractions can be determined (2), the H⁺-ATPase from plant membranes is activated at a concentration of 0.05 % Brij® 58 (4-6).

A stock solution of Brij® 58 is prepared by dissolving e.g. 50 mg/1 ml in hot water. The solution won't become clear.

Brij® 58 - Solution 10 % peroxide-free

B

aqueous solution

HS-No.: 38220000

Storage: 2-8°C
protected from light
under argon
Disposal: 14

WGK: 2

Specification:

Peroxides (as H₂O₂) max. 0.0001 %

Order-No.

A2495,0025

Quantity

25 ml

A2495,0100

100 ml

* registered trademark of Atlas Chemical Co.

Brilliant blue FCF see Erioglaucine (C.I. 42090) Page 330

Brilliant blue G see Coomassie® Brilliant blue G-250 (C.I. 42655) Page 242

Brilliant blue R see Coomassie® Brilliant blue R-250 (C.I. 42660) Page 242

Brilliant cresyl blue (C.I. 51010)

C

Brilliant cresyl blue zinc chloride double salt

(C₁₇H₂₀ClN₃O)₂ · ZnCl₂
M = 771.92 g/mol
CAS-No.: 81029-05-2
HS-No.: 32041300
EC-No.: 225-203-3

Storage: RT
LGK: 10 - 13

WGK: 1

Specification:

Absorption (λ_{max}) 625 - 635 nm

Identity complies

Loss on drying max. 5 %

Order-No.

A4293,0010

Quantity

10 g

A4293,0025

25 g

Brilliant cresyl blue zinc chloride double salt see Brilliant cresyl blue (C.I. 51010) Page 158

Brilliant green (C.I. 42040)

C

Ethyl green, Diamond green, Brilliant green hydrogensulfate, Basic Green 1, Malachite green G

C₂₇H₃₄N₂O₄S
M = 482.65 g/mol
CAS-No.: 633-03-4
HS-No.: 32041300
EC-No.: 211-190-1

Storage: RT
LGK: 10 - 13

WGK: 2
Danger
H302-H319
P305+P351+P338

Specification:

Assay (UV/VIS) min. 95 %

λ_{max} 628 - 632 nm

Loss on drying max. 5 %

Order-No.

A2298,0025

Quantity

25 g

A2298,0100

100 g

Brilliant green - Solution

C

ready-to-use aqueous indicator solution

HS-No.: 32041300

Storage: RT

Composition:

Brilliant green (A2298) 0.1 %

Order-No.

A2319,0100

Quantity

100 ml

A2319,0500

500 ml

Brilliant green hydrogensulfate see Brilliant green (C.I. 42040) Page 158

Brilliantrose see Rhodamine B (C.I. 45170) Page 686

Bromelain from pineapple BioChemica

B

[E.C. 3.4.22.32], Bromelin

M = approx. 33000 g/mol
CAS-No.: 9001-00-7
HS-No.: 35079090
EC-No.: 232-575-4

Storage: 2-8°C
LGK: 10 - 13

WGK: 3
Danger
H335-H315-H319-H334
P261-P342+P311-P305+P351+P338

Specification:

Assay ~0.5 DMC-U/mg

Order-No.

A1548,0025

Quantity

25 g

A1548,0100

100 g

A1548,0250

250 g

A1548,0500

500 g

Literature: (1) Murachi, T. (1970) *Methods Enzymol.* **19**, 273-284

(2) Murachi, T. (1976) *Methods Enzymol.* **45**, 475-485

(3) Ritonja, A. *et al.* (1989) *FEBS Letters* **247**, 419-424

Review article: Bromelain Enzymes.

Review article: Bromelain Enzymes.

Stem Bromelain: Amino acid sequence and implication for weak binding of cystatin.

Comment: Bromelain from pineapple stem belongs to the papain superfamily of cysteine proteases.

Unit definition: 1 DMC-U catalyses the cleavage of 1 μmol of peptides bound to Dimethylcasein per minute at 25°C, pH 7.0, while new terminal amino groups are formed.

Activity in different units: 1200 GDU units/g (1 GDU unit releases the same quantity of 1 mg amino nitrogen from gelatin within 20 minutes at 45°C, pH 4.5). 1 DMC-U corresponds to 1200 GDU/g.

Bromelin see Bromelain from pineapple BioChemica Page 158

4-Bromo-A23187 BioChemica

B

4-Bromocalcimycin, 4-Bromo-A23187,
4-Bromo-antibiotic A23187
semisynthetic from A23187 from
Streptomyces chartreusensis

$C_{29}H_{37}N_3O_6$
 $M = 602.52 \text{ g/mol}$
CAS-No.: 76455-82-8
HS-No.: 29419000

Storage: 2-8°C
protected from light

Warning
H302-H332-H315-H319-H312-H335
P305+P351+P338-P280



Solubility (10 mg/ml Dichloromethane)
..... clear, colorless

Specification:

Assay (TLC) approx. 98 %

Order-No.	Quantity
A7891,0001	1 mg

Comment: 4-Bromo-A23187 is the semisynthetic, brominated analog of A23187. The nonfluorescent ionophore for divalent cations is used as a calibration standard for determining the cytoplasmic calcium ions by fluorescent probes. 4-Bromo-A23187 is soluble in methanol, DMSO and dichloromethane. Protected from moisture, it is stable for 3 years.

4-Bromo-antibiotic A23187 see 4-Bromo-A23187 *BioChemica* Page 159
4-Bromocalcimycin see 4-Bromo-A23187 *BioChemica* Page 159
3-Bromo-4-chloro-3-indolyl- α -D-galactopyranoside see X- α -Gal *BioChemica* Page 868
5-Bromo-4-chloro-3-indolyl- β -D-galactopyranoside see X-Gal Page 868
5-Bromo-4-chloro-3-indolyl- β -D-glucopyranoside see X-Glu *BioChemica* Page 869
5-Bromo-4-chloro-3-indolyl- β -D-glucuronide cyclohexylammonium salt see X-Glucuro CHA salt *BioChemica* Page 869
5-Bromo-6-chloro-3-indolyl- β -D-glucuronide cyclohexylammonium salt see Magenta-Glucuro CHA salt *BioChemica* Page 502
5-Bromo-4-chloro-3-indolyl- β -D-glucuronide sodium salt trihydrate see X-Glucuro sodium salt trihydrate *BioChemica* Page 869
5-Bromo-4-chloro-3-indolyl phosphate disodium salt see X-Phos disodium salt *BioChemica* Page 870
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt see BCiP *BioChemica* Page 130

Bromochlorophenol blue

C

5',5''-Dibromo-3',3''-
dichlorophenolsulfone-phthalein

$C_{19}H_{10}Br_2Cl_2O_5S$
 $M = 581.08 \text{ g/mol}$
CAS-No.: 2553-71-1
HS-No.: 29349990
EC-No.: 219-861-0

Storage: RT
LGK: 10 - 13
Disposal: 3

Transition interval pH 3.0 - 4.6
yellow-purple)

Specification:

Assay (photometr.) min. 95 %
 $\lambda_{\text{max, 1}}$ (pH 3.0) 433 - 437 nm
 $\lambda_{\text{max, 2}}$ (pH 4.5) 590 - 592 nm

E 1 %/1 cm, λ_1 min. 400
E 1 %/1 cm, λ_2 min. 1000
Loss on drying max. 3 %

Order-No.	Quantity
A2330,0001	1 g
A2330,0005	5 g

Bromochlorophenol blue - Solution

C

ready-to-use indicator solution in diluted
ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

Bromochlorophenol blue (A2330)
..... 0.1 %

Order-No.	Quantity
A2304,0100	100 ml
A2304,0500	500 ml
A2304,1000	1 L

1-Bromo-3-chloropropane BioChemica

B

BCP, 1-Chloro-3-bromopropane

C_3H_6BrCl
 $M = 157.44 \text{ g/mol}$
CAS-No.: 109-70-6
HS-No.: 29034980
EC-No.: 203-697-1

Storage: RT
LGK: 3 B
Disposal: 2

Class / PG: 6.1/III
UN2688
WGK: 3
Danger
H302-H412-H331
P304+P340-P273



Boiling point 141 - 143°C
Density (d 20°C/4°C) .. 1.595 - 1.597
Flash point 81°C
Melting point -58°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A2107,0250	250 ml
A2107,0500	500 ml
A2107,1000	1 L

Bromocresol green

C

3',3'',5',5''-Tetrabromo-*m*-
cresolsulfonephthalein

$C_{21}H_{14}Br_4O_5S$
 $M = 698.04 \text{ g/mol}$
CAS-No.: 76-60-8
HS-No.: 29349990
EC-No.: 200-972-8

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (photometr.) min. 95 %
 $\lambda_{\text{max, 1}}$ (pH 3.8) 438 - 443 nm
 $\lambda_{\text{max, 2}}$ (pH 5.4) 615 - 618 nm
E 1 %/1 cm, λ_1 240 - 270

E 1 %/1 cm, λ_2 530 - 570
Loss on drying max. 3 %

Order-No.	Quantity
A1051,0001	1 g
A1051,0005	5 g
A1051,0025	25 g

Bromocresol green - Solution (in diluted Ethanol)

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:
Bromocresol green (A1051) . 0.1 %

Order-No.	Quantity
A2325,0100	100 ml
A2325,0500	500 ml
A2325,1000	1 L

Bromocresol green - Solution (aqueous solution)

C

Ready-to-use aqueous indicator solution

HS-No.: 38220000

Storage: RT

Composition:
Bromocresol green (A1051) . 0.04 %

Order-No.	Quantity
A1168,0100	100 ml
A1168,0250	250 ml
A1168,0500	500 ml

Bromocresol purple

C

5',5''-Dibromo-o-cresolsulfonephthalein

$C_{21}H_{16}Br_2O_5S$
 $M = 540.24$ g/mol
CAS-No.: 115-40-2
HS-No.: 29349990
EC-No.: 204-087-8

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:
Assay (photometr.) min. 90 %
 $\lambda_{max}, 1$ (pH 5.2) 427 - 431 nm
 $\lambda_{max}, 2$ (pH 6.8) 588 - 590 nm

E 1 %/1 cm, λ_1 400 - 450
E 1 %/1 cm, λ_2 1000 - 1100
Loss on drying max. 5 %

Order-No.	Quantity
A1059,0005	5 g
A1059,0025	25 g

Bromocresol purple - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:
Bromocresol purple (A1059) 0.1 %

Order-No.	Quantity
A2299,0100	100 ml
A2299,0500	500 ml
A2299,1000	1 L

5-Bromo-1-(2-deoxy- β -D-ribofuranosyl)-uracil see 5-Bromo-2'-deoxyuridine *BioChemica* Page 160

5-Bromo-2'-deoxyuridine *BioChemica*

B

5-Bromo-1-(2-deoxy- β -D-ribofuranosyl)-uracil, 2'-Deoxy-5-bromouridine, BrdU

$C_9H_7BrN_2O_5$
 $M = 307.11$ g/mol
CAS-No.: 59-14-3
HS-No.: 29349990
EC-No.: 200-415-9

Storage: 2-8°C
protected from light
LGK: 10 - 13

Melting point 193 - 197°C

Specification:
Assay min. 99 %
 α 20°C/D; 1 %, H_2O +22° - +24°
Heavy metals (as Pb) max. 0.001 %
Water (K.F.) max. 1 %

Order-No.	Quantity
A2139,0500	500 mg
A2139,0001	1 g
A2139,0005	5 g

Literature: (1) Bick, M.D. & Davidson, R.L. (1974) *Proc. Natl. Acad. Sci. USA* **71**, 2082-2086

(2) Dolbeare, F. et al. (1983) *Proc. Natl. Acad. Sci. USA* **80**, 5573-5577

(3) Böhmer, R.M. (1990) *Methods Cell Biol.* **33**, 173-184

(4) Dolbeare, F. et al. (1990) *Methods Cell Biol.* **33**, 207-216

(5) Crissman, H.A. & Steinkamp, J.A. (1990) *Methods Cell Biol.* **33**, 199-206

Total substitution of Bromodeoxyuridine for Thymidine in the DNA of a Bromodeoxyuridine dependent cell line.

Flow cytometric measurement of total DNA content and incorporated BrdU.

Cell division analysis with Bromodeoxyuridine and Hoechst 33258-fluorescence.

Using monoclonal antibodies in Bromodeoxyuridine-DNA analysis.

Detection of Bromodeoxyuridine-labeled cells by differential fluorescence analysis.

Comment: Bromodeoxyuridine is a thymidine analogue, which is introduced into DNA instead of thymidine during DNA synthesis. It is used for the examination of DNA synthesis, cell cycle or cell proliferation processes (2-4). Especially for the DNA synthesis, bromodeoxyuridine is a non-radioactive alternative to Trithium-labeled thymidine. BrdU- labeled DNA can easily be detected by the corresponding monoclonal antibodies (2, 4).

Stability: We recommend to prepare stock solutions in bidistilled water just before use (0.1 mg/ml, ref. 5), because BrdU has a limited shelf life. In case of the storage of stock solutions, according to reference 3, following procedure is recommended: Dissolve 10 mg/ml BrdU in bidistilled water at room temperature and filter-sterilize. For an incubation of cells with BrdU for a longer period of time all solutions should be sterile. Aliquots are stored at -20°C. Stock solutions decompose after several months. If you observe a precipitate after thawing, warm the solution to 37°C and mix well. Protect solutions of BrdU from direct light.

5-Bromo-2'-deoxyuridine 5'-triphosphate tri(triethylammonium) salt *BioChemica*

B

aqueous solution

 $C_{27}H_{45}N_5BrO_{14}P_3$
 $M = 846.52 \text{ g/mol}$
HS-No.: 29349990

Storage: -20°C

Specification:

Assay min. 96 %
Concentration 100 mM

Order-No.	Quantity
A5206,0100	100 µl
A5206,0500	500 µl

Comment: BrdU triphosphate can be used for its incorporating into DNA for the subsequent detection with anti-BrdU antibodies. BrdU triphosphate incorporation into DNA is also a tool for random-mutation introduction.

8-Bromoguanosine *BioChemica*

B

2-Amino-8-bromo-6-hydroxypurine

 $C_{10}H_{12}BrN_5O_5$
 $M = 362.10 \text{ g/mol}$
CAS-No.: 4016-63-1
HS-No.: 29349990

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay (HPLC) min. 97 %
Solubility (1 %; MeOH) clear

Order-No.	Quantity
A1754,0001	1 g
A1754,0005	5 g
A1754,0025	25 g

Bromiodide see Iodomonomobromide for synthesis Page 457

Bromophenol blue

C

3',3'',5',5''-

Tetrabromophenolsulfonephthalein

 $C_{19}H_{10}Br_4O_5S$
 $M = 669.96 \text{ g/mol}$
CAS-No.: 115-39-9
HS-No.: 29349990
EC-No.: 204-086-2

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (photometr.) min. 95 %
 $\lambda_{\text{max, 1}}$ (pH 3.0) 434 - 439 nm
 $\lambda_{\text{max, 2}}$ (pH 4.6) 590 - 593 nm
E 1 %/1 cm, λ_{1} 350 - 385
E 1 %/1 cm, λ_{2} 940 - 1000
Loss on drying max. 1 %

Order-No.	Quantity
A2331,0005	5 g
A2331,0025	25 g

Bromophenol blue - Solution (in diluted Ethanol)

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

Bromophenol blue (A2331) . 0.1 %

Order-No.	Quantity
A2320,0100	100 ml
A2320,0500	500 ml
A2320,1000	1 L
A2320,10006	6 x 1 L

Bromophenol blue - Solution (aqueous solution)

C

ready-to-use aqueous indicator solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Bromophenol blue (A2331) . 0.1 %

Order-No.	Quantity
A1383,0100	100 ml
A1383,0250	250 ml
A1383,0500	500 ml

Bromophenol blue sodium salt			
	$C_{19}H_9Br_4NaO_5S$ <i>M</i> = 691.94 g/mol CAS-No.: 34725-61-6 HS-No.: 29349990 EC-No.: 252-170-2	Storage: RT LGK: 10 - 13	

Bromophenol blue sodium salt Molecular Biology grade		B
Transition interval	 pH 3.0 - 4.6 (green-yellow-purple)	

Specification:	Order-No.	Quantity
DNases/RNases/Proteases not detectable	A4968,0005	5 g
Assay (photometr.) min. 90 %	A4968,0010	10 g
λ_{max} (pH 4.6) 590 - 595 nm	A4968,0025	25 g
Loss on drying max. 5 %		

Bromophenol blue sodium salt Electrophoresis grade		B
Specification:	Order-No.	Quantity
Assay (photometr.) min. 90 %	A3640,0005	5 g
λ_{max} (pH 4.6) 590 - 595 nm	A3640,0010	10 g
Loss on drying max. 5 %	A3640,0025	25 g
Transition interval complies		

Literature: (1) Maxam, A.M. & Gilbert, W. (1977) *Proc. Natl. Acad. Sci. USA* **74**, 560-564
(2) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(4) Cathey, J.C. *et al.* (1997) *BioTechniques* **22**, 222
(5) Shieh, B. *et al.* (1998) *BioTechniques* **24**, 60-64
(6) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*, page 7.6.5 Suppl. 16 John Wiley & Sons, New York.

A new method for sequencing DNA.
Electrophoresis in agarose and acrylamide gels.
Incorporation of bromophenol blue enhances visibility of polyacrylamide gels.
Stain-induced denaturation of water-solubilized DNA.

Comment: Bromophenol blue (BPB) and xylene cyanol FF (XC) are the most widely used stains in gel electrophoresis for tracing the migration of samples on electrophoretic gels. Usually, both stains are added to the sample buffers (loading buffers; see our *ready-to-use loading buffers*) at concentrations of 0.05 % to 0.25 %. In the vertical polyacrylamide gel electrophoresis it may happen, that the gel is leaking or air bubbles may come up. If the gel is stained with 1 - 5 mg bromophenol blue, this may be detected much easier and earlier. In case that the stain will interfere with other applications (e. g. silver staining), a pre-run of the gel will remove bromophenol blue. It does not influence the migration of the samples. Add the solid stain before adding the catalyst (4). If DNA is dissolved in bidistilled water (pH 5.5 - 6.0) - not in TE buffer - both stains, as well bromophenol blue as xylene cyanol FF may change the migration rate during the electrophoresis run. The bands run faster than expected (5).

In **denaturing** gels, the dye migrates with sizes like the following oligonucleotide:

Polyacrylamide (%)	Bromophenol blue	Xylene cyanol (according to ref. 1, 4)
5	35 bases	130 bases
6	26 bases	106 bases
8	19 bases	75 bases
10	12 bases	55 bases
20	10 bases	28 bases

Bromophenol blue sodium salt		C
3',3'',5',5''-Tetrabromophenolsulfone-phthalein sodium salt		

Transition interval	 pH 3.0 - 4.6 (green-yellow-purple)	
Specification:	Order-No.	Quantity
Assay (photometr.) min. 90 %	A1120,0005	5 g
$\lambda_{max, 1}$ (pH 3.0) 434 - 439 nm	A1120,0010	10 g
$\lambda_{max, 2}$ (pH 4.6) 590 - 593 nm	A1120,0025	25 g
Loss on drying max. 5 %		

Bromophenol red				C
	$C_{19}H_{12}Br_2O_5S$ <i>M</i> = 512.19 g/mol CAS-No.: 2800-80-8 HS-No.: 29349990 EC-No.: 220-538-1	Storage: RT LGK: 10 - 13 Disposal: 3		
3',3''-Dibromophenolsulfonephthalein				
Specification:	Order-No.	Quantity		
Assay (photometr.) min. 90 %	A2311,0001	1 g		
λ_1 (pH 4.7) 435 - 440 nm	A2311,0005	5 g		
λ_2 (pH 6.3) 574 - 577 nm	A2311,0010	10 g		
E 1 %/1 cm, λ_1 min. 380				
E 1 %/1 cm, λ_2 min. 760				
Loss on drying max. 5 %				

Bromophenol red - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

Bromophenol red (A2311) . . . 0.1 %

Order-No.

A2323,0100
A2323,0500
A2323,1000

Quantity

100 ml
500 ml
1 L

Bromopotassium see Potassium bromide Page 636

Bromothymol blue

C

3',3''-Dibromothymolsulfonephthalein

$C_{27}H_{28}Br_2O_5S$
 $M = 624.40$ g/mol
CAS-No.: 76-59-5
HS-No.: 29349990
EC-No.: 200-971-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:

Assay (photometr.) min. 95 %
 $\lambda_{max, 1}$ (pH 5.8) 430 - 435 nm
 $\lambda_{max, 2}$ (pH 7.6) 615 - 618 nm
E 1 %/1 cm, λ_1 min. 260

E 1 %/1 cm, λ_2 min. 470
Loss on drying max. 3 %

Order-No.

A2340,0005
A2340,0010
A2340,0025

Quantity

5 g
10 g
25 g

Bromothymol blue - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

Bromothymol blue (A2340) . . . 0.1 %

Order-No.

A2327,0100
A2327,0500
A2327,1000
A2327,10006

Quantity

100 ml
500 ml
1 L
6 x 1 L

Bromothymol blue sodium salt

C

3',3''-Dibromothymolsulfonephthalein sodium salt

$C_{27}H_{27}Br_2NaO_5S$
 $M = 646.37$ g/mol
CAS-No.: 34722-90-2
HS-No.: 29349990
EC-No.: 252-169-7

Storage: RT
LGK: 10 - 13

WGK: 3*

Specification:

Assay (photometr.) min. 90 %
 $\lambda_{max, 1}$ (pH 5.8) 430 - 435 nm
 $\lambda_{max, 2}$ (pH 7.6) 615 - 618 nm
E 1 %/1 cm, λ_1 200 - 300

E 1 %/1 cm, λ_2 400 - 500
Loss on drying max. 5 %

Order-No.

A2335,0001
A2335,0005
A2335,0025

Quantity

1 g
5 g
25 g

Bromothymol blue Lactose Agar see Blue Agar Page 149

Bromothymol blue Lactose Cystine Agar see CLED Agar Page 218

Bromoxyleneol blue

C

3',3''-Dibromo-p-xyleneolsulfonephthalein

$C_{23}H_{20}Br_2O_5S$
 $M = 568.29$ g/mol
CAS-No.: 40070-59-5
HS-No.: 29349990
EC-No.: 254-780-4

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point 218°C (dec.)
Transition interval pH 5.7 - 7.4
(yellow - blue)

Specification:

Assay (photometr.) min. 95 %
 $\lambda_{max, 1}$ (pH 5.7) 432 - 437 nm
 $\lambda_{max, 2}$ (pH 7.4) 613 - 615 nm
E 1 %/1 cm, λ_1 300 - 330

E 1 %/1 cm, λ_2 500 - 540
Loss on drying max. 3 %

Order-No.

A2309,0001
A2309,0005
A2309,0010

Quantity

1 g
5 g
10 g

Bromoxyleneol blue - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

Bromoxyleneol blue (A2309) . . . 0.1 %

Order-No.

A2342,0100
A2342,0500

Quantity

100 ml
500 ml

Bromsulfalein see Sulfobromophthalein disodium salt Page 778
 Bryamycin see Thiostrepton *BioChemica* Page 813

BS³

B

Bis(sulfosuccinimidyl)suberate disodium salt $C_{16}H_{18}N_2Na_2O_{14}S_2$ Storage: -20°C hygroscopic
 $M = 572.43 \text{ g/mol}$
 CAS-No.: 82436-77-9
 Solubility Water, DMF HS-No.: 29251995

Specification:

Assay min. 95 %
 Identity (NMR) complies

Order-No.	Quantity
A7961,0025	25 mg
A7961,0050	50 mg
A7961,0100	100 mg
A7961,0250	250 mg

Comment: BS³ is a water-soluble, amine-reactive homobifunctional cross-linker. It reacts quickly with primary amines in the pH range 7 - 9. It is non-cleavable and membrane-impermeable.

BSA see Albumins Page 75
 BSTFA see Bis-(trimethylsilyl)-trifluoroacetamide Page 147
 BTC see Tetrazolium blue chloride Page 809
 Bucladesine see N⁶-2'-O-Dibutyl-adenosine 3',5'-cyclophosphate sodium salt monohydrate Page 274

Buffer solutions

HS-No.: 38220000

Storage: RT

Buffer solution pH 1.00

C

Specification:

pH (15°C) 0.99 ± 0.02
 pH (20°C) 1.00 ± 0.02
 pH (25°C) 1.01 ± 0.02
 pH (30°C) 1.01 ± 0.02

Order-No.	Quantity
A2732,0250	250 ml
A2732,0500	500 ml
A2732,1000	1 L
A2732,10006	6 x 1 L
A2732,5000PE	5 L
A2732,5000CT	5 L

Buffer solution pH 2.00

C

Specification:

pH (15°C) 2.00 ± 0.02
 pH (20°C) 2.00 ± 0.02
 pH (25°C) 2.00 ± 0.02
 pH (30°C) 2.00 ± 0.02

Order-No.	Quantity
A1294,0250	250 ml
A1294,0500	500 ml
A1294,1000	1 L
A1294,10006	6 x 1 L
A1294,5000PE	5 L
A1294,5000CT	5 L

Buffer solution pH 3.00

C

Specification:

pH (15°C) 3.01 ± 0.02
 pH (20°C) 3.00 ± 0.02
 pH (25°C) 3.00 ± 0.02
 pH (30°C) 3.00 ± 0.02

Order-No.	Quantity
A2733,0250	250 ml
A2733,0500	500 ml
A2733,1000	1 L
A2733,10006	6 x 1 L
A2733,5000PE	5 L
A2733,5000CT	5 L

Buffer solution pH 4.00

C

Specification:

pH (15°C) 4.01 ± 0.02
 pH (20°C) 4.00 ± 0.02
 pH (25°C) 4.01 ± 0.02
 pH (30°C) 4.01 ± 0.02

Order-No.	Quantity
A1250,0250	250 ml
A1250,0500	500 ml
A1250,1000	1 L
A1250,10006	6 x 1 L
A1250,5000PE	5 L
A1250,5000CT	5 L
A1250,9010PE	10 L
A1250,9010CT	10 L

Buffer solution pH 5.00

C

Specification:

pH (15°C) 5.01 ± 0.02
 pH (20°C) 5.00 ± 0.02
 pH (25°C) 5.00 ± 0.02
 pH (30°C) 5.00 ± 0.02

Order-No.	Quantity
A2734,0250	250 ml
A2734,0500	500 ml
A2734,1000	1 L
A2734,10006	6 x 1 L
A2734,5000PE	5 L
A2734,5000CT	5 L

Buffer solution pH 6.00

Specification:

pH (15°C)	6.00 ± 0.02
pH (20°C)	6.00 ± 0.02
pH (25°C)	6.02 ± 0.02
pH (30°C)	6.03 ± 0.02

Order-No.	Quantity
A2735,0250	250 ml
A2735,0500	500 ml
A2735,1000	1 L
A2735,10006	6 x 1 L
A2735,5000PE	5 L
A2735,5000CT	5 L

C

Buffer solution pH 7.00

Specification:

pH (15°C)	7.02 ± 0.02
pH (20°C)	7.00 ± 0.02
pH (25°C)	6.98 ± 0.02
pH (30°C)	6.98 ± 0.02

Order-No.	Quantity
A1251,0250	250 ml
A1251,0500	500 ml
A1251,1000	1 L
A1251,10006	6 x 1 L
A1251,5000PE	5 L
A1251,5000CT	5 L
A1251,9010PE	10 L
A1251,9010CT	10 L

C

Buffer solution pH 8.00

Specification:

pH (15°C)	8.04 ± 0.02
pH (20°C)	8.00 ± 0.02
pH (25°C)	7.96 ± 0.02
pH (30°C)	7.94 ± 0.02

Order-No.	Quantity
A2736,0250	250 ml
A2736,0500	500 ml
A2736,1000	1 L
A2736,10006	6 x 1 L
A2736,5000PE	5 L
A2736,5000CT	5 L

C

Buffer solution pH 9.00

Specification:

pH (15°C)	9.05 ± 0.02
pH (20°C)	9.00 ± 0.02
pH (25°C)	8.95 ± 0.02
pH (30°C)	8.91 ± 0.02

Order-No.	Quantity
A1253,0250	250 ml
A1253,0500	500 ml
A1253,1000	1 L
A1253,10006	6 x 1 L
A1253,5000PE	5 L
A1253,5000CT	5 L
A1253,9010PE	10 L
A1253,9010CT	10 L

C

Buffer solution pH 10.00

Specification:

pH (15°C)	10.05 ± 0.05
pH (20°C)	10.00 ± 0.05
pH (25°C)	9.94 ± 0.05
pH (30°C)	9.89 ± 0.05

Order-No.	Quantity
A1252,0250	250 ml
A1252,0500	500 ml
A1252,1000	1 L
A1252,10006	6 x 1 L
A1252,5000PE	5 L
A1252,5000CT	5 L
A1252,9010PE	10 L
A1252,9010CT	10 L

C

Buffer solution pH 11.00

Specification:

pH (15°C)	11.10 ± 0.05
pH (20°C)	11.00 ± 0.05
pH (25°C)	10.90 ± 0.05
pH (30°C)	10.81 ± 0.05

Order-No.	Quantity
A1295,0250	250 ml
A1295,0500	500 ml
A1295,1000	1 L
A1295,10006	6 x 1 L
A1295,5000PE	5 L
A1295,5000CT	5 L

C

Buffer solution pH 12.00

Specification:

pH (15°C)	12.10 ± 0.05
pH (20°C)	12.00 ± 0.05
pH (25°C)	11.88 ± 0.05
pH (30°C)	11.72 ± 0.05

Order-No.	Quantity
A2737,0250	250 ml
A2737,0500	500 ml
A2737,1000	1 L
A2737,10006	6 x 1 L
A2737,5000PE	5 L
A2737,5000CT	5 L

C

Buffer solution pH 13.00

Specification:

pH (15°C)	13.18 ± 0.05
pH (20°C)	13.00 ± 0.05
pH (25°C)	12.89 ± 0.05
pH (30°C)	12.67 ± 0.05

Order-No.	Quantity
A2738,0250	250 ml
A2738,0500	500 ml
A2738,1000	1 L
A2738,10006	6 x 1 L
A2738,5000PE	5 L
A2738,5000CT	5 L

C

Buffer sets

HS-No.: 38220000

Storage: RT

Buffer set I

(2 x 500 ml pH 4.00, 2 x 500 ml pH 7.00, 2 x 500 ml pH 10.00)
(2 x 1 L pH 4.00, 2 x 1 L pH 7.00, 2 x 1 L pH 10.00)

Order-No.	Quantity
A3979,0500	1 Set
A3979,1000	1 Set

C

Buffer set II (color-coded)

(2 x 500 ml pH 4.00 color-coded, 2 x 500 ml pH 7.00 color-coded, 2 x 500 ml pH 10.00 color-coded)
(2 x 1 L pH 4.00 color-coded, 2 x 1 L pH 7.00 color-coded, 2 x 1 L pH 10.00 color-coded)

Order-No.	Quantity
A4576,0500	1 Set
A4576,1000	1 Set

C

Buffer solutions, color-coded

for the calibration of pH instruments

HS-No.: 38220000

Storage: RT

Buffer solution pH 4.00 (red)

Specification:

pH (15°C)	4.01 ± 0.02
pH (20°C)	4.00 ± 0.02
pH (25°C)	4.01 ± 0.02
pH (30°C)	4.01 ± 0.02

Order-No.	Quantity
A1254,0250	250 ml
A1254,0500	500 ml
A1254,1000	1 L
A1254,10006	6 x 1 L
A1254,5000PE	5 L
A1254,5000CT	5 L
A1254,9010PE	10 L
A1254,9010CT	10 L

C

Buffer solution pH 7.00 (green)

Specification:

pH (15°C)	7.02 ± 0.02
pH (20°C)	7.00 ± 0.02
pH (25°C)	6.98 ± 0.02
pH (30°C)	6.98 ± 0.02

Order-No.	Quantity
A1255,0250	250 ml
A1255,0500	500 ml
A1255,1000	1 L
A1255,10006	6 x 1 L
A1255,5000PE	5 L
A1255,5000CT	5 L
A1255,9010PE	10 L
A1255,9010CT	10 L

C

Buffer solution pH 9.00 (blue)

Specification:

pH (15°C)	9.05 ± 0.02
pH (20°C)	9.00 ± 0.02
pH (25°C)	8.95 ± 0.02
pH (30°C)	8.91 ± 0.02

Order-No.	Quantity
A4973,0250	250 ml
A4973,0500	500 ml
A4973,1000	1 L
A4973,10006	6 x 1 L
A4973,5000PE	5 L
A4973,5000CT	5 L
A4973,9010PE	10 L
A4973,9010CT	10 L

C

Buffer solution pH 10.00 (blue)

C

Specification:

pH (15°C)	10.05 ± 0.05
pH (20°C)	10.00 ± 0.05
pH (25°C)	9.94 ± 0.05
pH (30°C)	9.89 ± 0.05

Order-No.	Quantity
A1256,0250	250 ml
A1256,0500	500 ml
A1256,1000	1 L
A1256,10006	6 x 1 L
A1256,5000PE	5 L
A1256,5000CT	5 L
A1256,9010PE	10 L
A1256,9010CT	10 L

Buffer solutions, standardized, according to DIN 19266

These buffer solutions are useful for the calibration of high precision laboratory pH meters

HS-No.: 38220000 Storage: RT

Buffer solution pH 1.679

C

Specification:

pH (10°C)	1.672 ± 0.01
pH (20°C)	1.675 ± 0.01
pH (25°C)	1.679 ± 0.01
pH (30°C)	1.683 ± 0.01

Order-No.	Quantity
A1257,0250	250 ml
A1257,0500	500 ml
A1257,1000	1 L
A1257,10006	6 x 1 L

* standardized, according to DIN19266

Buffer solution pH 3.776

C

Specification:

pH (15°C)	3.802 ± 0.01
pH (20°C)	3.788 ± 0.01
pH (25°C)	3.776 ± 0.01
pH (30°C)	3.766 ± 0.01

Order-No.	Quantity
A2763,0250	250 ml
A2763,0500	500 ml
A2763,1000	1 L

* standardized, according to DIN19266

Buffer solution pH 4.006

C

Specification:

pH (10°C)	3.999 ± 0.01
pH (20°C)	4.001 ± 0.01
pH (25°C)	4.006 ± 0.01
pH (30°C)	4.012 ± 0.01

Order-No.	Quantity
A1258,0250	250 ml
A1258,0500	500 ml
A1258,1000	1 L
A1258,10006	6 x 1 L

* standardized, according to DIN19266

Buffer solution pH 6.865

C

Specification:

pH (10°C)	6.900 ± 0.01
pH (20°C)	6.881 ± 0.01
pH (25°C)	6.865 ± 0.01
pH (30°C)	6.853 ± 0.01

Order-No.	Quantity
A1259,0250	250 ml
A1259,0500	500 ml
A1259,1000	1 L
A1259,10006	6 x 1 L

* standardized, according to DIN19266

Buffer solution pH 7.413

C

Specification:

pH (10°C)	7.448 ± 0.01
pH (20°C)	7.429 ± 0.01
pH (25°C)	7.413 ± 0.01
pH (30°C)	7.400 ± 0.01

Order-No.	Quantity
A1260,0250	250 ml
A1260,0500	500 ml
A1260,1000	1 L
A1260,10006	6 x 1 L

* standardized, according to DIN19266

Buffer solution pH 9.180

C

Specification:

pH (10°C)	9.276 ± 0.01
pH (20°C)	9.225 ± 0.01
pH (25°C)	9.180 ± 0.01
pH (30°C)	9.136 ± 0.01

Order-No.	Quantity
A1261,0250	250 ml
A1261,0500	500 ml
A1261,1000	1 L
A1261,10006	6 x 1 L

* standardized, according to DIN19266

Buffer solution pH 10.012

C

Specification:

pH (10°C)	10.118 ± 0.01
pH (20°C)	10.062 ± 0.01
pH (25°C)	10.012 ± 0.01
pH (30°C)	9.966 ± 0.01

Order-No.	Quantity
A1262,0250	250 ml
A1262,0500	500 ml
A1262,1000	1 L
A1262,10006	6 x 1 L

* standardized, according to DIN19266

Buffer solution pH 12.454

C

Specification:

pH (10°C)	12.810 ± 0.01
pH (20°C)	12.627 ± 0.01
pH (25°C)	12.454 ± 0.01
pH (30°C)	12.289 ± 0.01

* standardized, according to DIN19266

Order-No.	Quantity
A2764,0250	250 ml
A2764,0500	500 ml
A2764,1000	1 L
A2764,10006	6 x 1 L

Buffersolutions, according to DIN 19267

preferably for the calibration of technical pH instruments

HS-No.: 38220000

Storage: RT

Buffer solution pH 1.09

C

Specification:

pH (10°C)	1.09 ± 0.02
pH (20°C)	1.09 ± 0.02
pH (25°C)	1.09 ± 0.02
pH (30°C)	1.10 ± 0.02

* standardized, according to DIN19267

Order-No.	Quantity
A2745,0250	250 ml
A2745,0500	500 ml
A2745,1000	1 L

Buffer solution pH 3.06

C

Specification:

pH (10°C)	3.10 ± 0.02
pH (20°C)	3.07 ± 0.02
pH (25°C)	3.06 ± 0.02
pH (30°C)	3.05 ± 0.02

* standardized, according to DIN19267

Order-No.	Quantity
A2746,0250	250 ml
A2746,0500	500 ml
A2746,1000	1 L

Buffer solution pH 4.65

C

Specification:

pH (10°C)	4.66 ± 0.02
pH (20°C)	4.65 ± 0.02
pH (25°C)	4.65 ± 0.02
pH (30°C)	4.65 ± 0.02

* standardized, according to DIN19267

Order-No.	Quantity
A2747,0250	250 ml
A2747,0500	500 ml
A2747,1000	1 L
A2747,10006	6 x 1 L

Buffer solution pH 6.79

C

Specification:

pH (10°C)	6.84 ± 0.02
pH (20°C)	6.80 ± 0.02
pH (25°C)	6.79 ± 0.02
pH (30°C)	6.78 ± 0.02

* standardized, according to DIN19267

Order-No.	Quantity
A2748,0250	250 ml
A2748,0500	500 ml
A2748,1000	1 L
A2748,10006	6 x 1 L

Buffer solution pH 9.23

C

Specification:

pH (10°C)	9.37 ± 0.02
pH (20°C)	9.27 ± 0.02
pH (25°C)	9.23 ± 0.02
pH (30°C)	9.18 ± 0.02

* standardized, according to DIN19267

Order-No.	Quantity
A2749,0250	250 ml
A2749,0500	500 ml
A2749,1000	1 L
A2749,10006	6 x 1 L

Buffer solution pH 12.75

C

Specification:

pH (10°C)	13.37 ± 0.05
pH (20°C)	12.96 ± 0.05
pH (25°C)	12.75 ± 0.05
pH (30°C)	12.61 ± 0.05

* standardized, according to DIN19267

Order-No.	Quantity
A2750,0250	250 ml
A2750,0500	500 ml
A2750,1000	1 L

Buffer solutions, different compositions

HS-No.: 38220000

Storage: RT

Buffer solution pH 3.55

C

saturated Potassium hydrogen tartrate -
Solution

Specification:

pH (25°C) 3.55 ± 0.05

Order-No.	Quantity
A2739,0250	250 ml
A2739,0500	500 ml
A2739,1000	1 L

Buffer solution pH 4.66

C

Acetic acid / Sodium acetate for
complexometrical titration

Specification:

pH (25°C) 4.66 ± 0.05

Order-No.	Quantity
A2740,0250	250 ml
A2740,0500	500 ml
A2740,1000	1 L
A2740,10006	6 x 1 L

Buffer solution pH 6.88

C

0.025 M Potassium dihydrogen phosphate /
0.025 M di-Sodium hydrogen phosphate

Specification:

pH (25°C) 6.88 ± 0.05

Order-No.	Quantity
A2741,0250	250 ml
A2741,0500	500 ml
A2741,1000	1 L
A2741,10006	6 x 1 L

Buffer solution pH 8.90

C

Ammonia / Ammonium chloride for
complexometrical titration

Specification:

pH (25°C) 8.90 ± 0.05

Order-No.	Quantity
A2742,0250	250 ml
A2742,0500	500 ml
A2742,1000	1 L

Buffer solution pH 9.22

C

0.01 M di-Sodium tetraborate

Specification:

pH (25°C) 9.22 ± 0.05

Order-No.	Quantity
A2743,0250	250 ml
A2743,0500	500 ml
A2743,1000	1 L
A2743,10006	6 x 1 L

Buffer solution pH 10.00

C

Ammonia / Ammonium chloride for
complexometrical titration

Warning

H315-H319-H335
P305+P351+P338



Specification:

pH (25°C) 10.00 ± 0.05

Order-No.	Quantity
A2744,0250	250 ml
A2744,0500	500 ml
A2744,1000	1 L
A2744,10006	6 x 1 L

1,3-Butanediol for synthesis

C

1,3-Butylene glycol

$C_4H_{10}O_2$

$M = 90.12 \text{ g/mol}$

CAS-No.: 107-88-0

HS-No.: 29053920

EC-No.: 203-529-7

Storage: RT

LGK: 10 - 13

Disposal: 1

WGK: 1

Boiling point 207.5°C (1013
hPa)

Density 1.00 g/cm³

Specification:

Assay (HPLC) min. 99 %

Acidity (as AcOH) max. 0.005 %

Density 1.004 - 1.007 g/ml

Water (K.F.) max. 0.5 %

Order-No.	Quantity
A5096,1000	1 L
A5096,10006	6 x 1 L
A5096,2500	2.5 L
A5096,5000	5 L

1,4-Butanediol for synthesis

C

Tetramethylene glycol, 1,4-Butylene glycol

$C_4H_{10}O_2$
 $M = 90.12$ g/mol
 CAS-No.: 110-63-4
 HS-No.: 29053925
 EC-No.: 203-786-5

Storage: RT
 LGK: 10 - 13
 Disposal: 1

WGK: 1
 Warning
 H302
 P330-P301+P312-P264



Boiling point 230°C
 Density (d 20°C/4°C) .. 1.02
 Melting point 19.5 - 20°C

Specification:

Assay (HPLC) min. 99 %
 Water (K.F.) max. 0.3 %

Order-No.	Quantity
A4340,1000	1 L
A4340,10006	6 x 1 L
A4340,2500	2.5 L
A4340,25004	4 x 2,5 L

1-Butanesulfonic acid sodium salt IPC grade

C

Sodium 1-butanefulfonate

$C_4H_9NaO_3S$
 $M = 160.17$ g/mol
 CAS-No.: 2386-54-1
 HS-No.: 29041000
 EC-No.: 219-201-1

Storage: RT
 LGK: 10 - 13

Melting point > 300°C

Specification:

Assay (titr.) min. 99 %
 Loss on drying max. 2 %
 Solubility (10 %; H₂O) clear, colorless
 pH (10 %; H₂O) 5.0 - 7.0

A (1 cm/0.005 M in water HPLC grade)
 200 nm max. 0.15
 220 nm max. 0.05

Order-No.	Quantity
A1012,0005	5 g
A1012,0010	10 g
A1012,0025	25 g

iso-Butanol see Isobutanol Page 463

1-Butanol

n-Butyl alcohol

$C_4H_{10}O$
 $M = 74.12$ g/mol
 CAS-No.: 71-36-3
 HS-No.: 29051300
 EC-No.: 200-751-6

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/III
 UN1120
 WGK: 1
 Danger
 H336-H318-H315-H302-H226-H335
 P302+P352-P305+P351+P338-P313-
 P280



Boiling point 117°C
 Density (d 20°C/4°C) .. 0.81
 Melting point -89°C
 Solubility (20°C) 77 g/L (H₂O)
 n 20°C/D 1.3993

1-Butanol Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay min. 99.5 %
 Free acid max. 0.005 %
 Aldehydes max. 0.005 %
 Loss on drying max. 0.1 %

Cr max. 0.0005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Pb max. 0.0005 %
 Zn max. 0.0005 %

Order-No.	Quantity
A3066,0100	100 ml
A3066,0500	500 ml
A3066,1000	1 L
A3066,2500	2.5 L

1-Butanol HPLC grade

C

Specification:

Assay (HPLC) min. 99.5 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.1 %

A (1 cm/water HPLC grade)
 230 nm max. 0.2
 240 nm max. 0.1
 250 nm max. 0.05
 260 nm max. 0.025
 310 nm max. 0.005

Order-No.	Quantity
A2601,1000	1 L
A2601,10006	6 x 1 L
A2601,2500	2.5 L
A2601,25004	4 x 2,5 L

1-Butanol p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
 2-Butanol max. 0.1 %
 Dibutyl ether max. 0.1 %
 Ketones max. 0.02 %
 Water (K.F.) max. 0.1 %
 Cr max. 0.00001 %
 Cu max. 0.00001 %

Fe max. 0.00001 %
 Mn max. 0.00001 %
 Pb max. 0.00001 %

Order-No.	Quantity
A0771,0500	500 ml
A0771,1000	1 L
A0771,10006	6 x 1 L
A0771,2500	2.5 L
A0771,25004	4 x 2,5 L
A0771,5000	5 L

1-Butanol pure

C

Specification:

Assay (HPLC)	min. 99 %
Acetone	max. 0.05 %
Water (K.F.)	max. 0.1 %

Order-No.	Quantity
A0772,1000	1 L
A0772,10006	6 x 1 L
A0772,2500	2.5 L
A0772,25004	4 x 2.5 L
A0772,5000	5 L
A0772,9010	10 L
A0772,9025BK	25 L
A0772,9025PE	25 L

1-Butanol water-saturated BioChemica

B

n-Butyl alcohol

C₄H₁₀O
M = 74.12 g/mol
CAS-No.: 71-36-3
HS-No.: 29051300
EC-No.: 200-751-6

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1120
WGK: 1
Danger
H336+H318-H335-H315-H226-H302
P305+P351+P338-P313-P302+P352-P280



Specification:

1-Butanol (GC, anhydr.)	min. 99.5 %
Free acid	max. 0.005 %
Aldehydes	max. 0.01 %
Loss on drying	approx. 20 %

Ca	max. 0.0005 %	Mn	max. 0.00005 %
Co	max. 0.00002 %	Ni	max. 0.00005 %
Cu	max. 0.00002 %	Pb	max. 0.0001 %
Fe	max. 0.00004 %	Zn	max. 0.00001 %

Order-No.	Quantity
A3776,0500	500 ml
A3776,1000	1 L
A3776,2500	2.5 L

Literature: (1) Tillet, D. & Neilan, B.A. (1999) *BioTechniques* **26**, 606-610

(2) Thomas, M.R. (1994) *BioTechniques* **16**, 988-989

(3) Bell, A. et al. (1999) *BioTechniques* **27**, 1122-1126

(4) Sawadogo, M. & Van Dyke, M.W. (1991) *Nucleic Acids Res.* **19**, 674

(5) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. page 7.6.5 Suppl. 16 John Wiley & Sons, New York.

n-Butanol-purification of dye terminator sequencing reactions.

Simple purification of DNA-ligation reactions for the electroporation of *E. coli*.

Improved band resolution and reduced ³²P-contamination in EMSAs.

Rapid method for the purification of deprotected oligonucleotides.

Comment: In case, that *E. coli* is transformed with DNA from ligation reactions by electroporation, a low ionic strength plays an important role. For this purpose, the ligation reaction is heated to 65°C for 10 minutes (inactivation of T4 DNA-ligase), the sample volume enlarged with dH₂O to 50 µl and then 500 µl 1-Butanol are added and vortexed. After a brief centrifugation (12000 rpm, 10 min.), the pellet is dried, resuspended in 10 µl dH₂O and transformed into the bacterial cells (2).

If polyacrylamide gels are prepared with two different concentrations (stacking gel and resolving gel), the edge of the resolving gel has to be very just. Therefore, a thin layer of n-butanol is pured directly on the resolving gel (directly after puring the resolving gel) and is washed of after polymerization (3).

2-Butanol

sec.-Butyl alcohol

C₄H₁₀O
M = 74.12 g/mol
CAS-No.: 78-92-2
HS-No.: 29051490
EC-No.: 201-158-5

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1120
WGK: 1
Warning
H335-H226-H319-H336
P210-P305+P351+P338-P304+P340



Boiling point	99°C
Melting point	-114°C
Solubility (20°C)	200 g/L (H ₂ O)
n _D 20°C/D	1.3978

2-Butanol Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable
Assay (HPLC)	min. 99 %
Water (K.F.)	max. 0.2 %

Cr	max. 0.000001 %	Mn	max. 0.000001 %
Cu	max. 0.00001 %	Pb	max. 0.00001 %
Fe	max. 0.00001 %	Zn	max. 0.00001 %

Order-No.	Quantity
A3499,0500	500 ml
A3499,1000	1 L

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001. *Current Protocols in Molecular Biology*. page 2.1.4+5 Suppl. 42 John Wiley & Sons, New York.

(3) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. pp. 1.73, 12.71, A8.18. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Precipitation of nucleic acids.

Comment: DNA can be concentrated from diluted solutions by several extractions with 2-Butanol (alternatively with 1-Butanol) and subsequent ethanol-precipitation. Therefore, the same volume of 2-Butanol is added to the DNA-containing solution and mixed well. The phases are separated by centrifugation (1 minute 'bench-top'-centrifuge for samples of microlitre quantities). The upper phase (2-Butanol) will be discarded. The extraction may be repeated until the wanted DNA-sample volume is reached. In case, that too much 2-Butanol has been added, the aqueous phase may disappear and the nucleic acids may precipitate. If this happens, add one half of the sample volume water. The principle of the concentration is based on the ability of 2-Butanol to take up water. Since the salts will stay in the aqueous DNA-containing phase, they will be concentrated too and have to be removed by a subsequent ethanol precipitation. Please note, that the extraction is performed in polypropylene tubes, because 2-Butanol will destroy polystyrene materials. Residual butanol can be removed with diethyl ether (ref. 3 page 2.1.5).

For the removal of ethidium bromide from DNA-containing solutions, both water-saturated isopropanol and 2-Butanol are suited.

2-Butanol p. A.

C

Specification:

Assay (HPLC)	min. 99 %
Water (K.F.)	max. 0.2 %
Co	max. 0.00001 %
Cr	max. 0.000001 %
Cu	max. 0.00001 %
Fe	max. 0.00001 %
Mg	max. 0.00001 %

Mn	max. 0.000001 %
Pb	max. 0.00001 %
Zn	max. 0.00001 %

Order-No.	Quantity
A0647,0500	500 ml
A0647,1000	1 L
A0647,10006	6 x 1 L
A0647,2500	2.5 L
A0647,25004	4 x 2.5 L
A0647,5000	5 L

2-Butanol pure

C

Specification:

Assay (HPLC)	min. 98 %
Water (K.F.)	max. 0.5 %
Co	max. 0.0005 %
Cr	max. 0.0005 %
Cu	max. 0.0005 %
Fe	max. 0.0005 %
Mn	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A3508,1000	1 L
A3508,10006	6 x 1 L
A3508,2500	2.5 L
A3508,25004	4 x 2,5 L
A3508,5000	5 L
A3508,9010	10 L
A3508,9025BK	25 L
A3508,9025PE	25 L

tert.-Butanol

Boiling point (99 %)	.. 82°C
Density (d 20°C/4°C)	.. 0.78 (99 %)
Melting point (99 %)	.. 23 - 25°C
n 20°C/D (99 %)	 1.3838

C ₄ H ₁₀ O
M = 74.12 g/mol
CAS-No.: 75-65-0
HS-No.: 29051410
EC-No.: 200-889-7

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1120
WGK: 1
Danger
H225-H319-H335-H332
P403+P233-P302+P352-P210

**tert.-Butanol p. A.**

C

Specification:

Assay (HPLC)	min. 99 %
Non-volatile matter	max. 0.001 %
Water (K.F.)	max. 0.1 %
Al	max. 0.0005 %
Ca	max. 0.0005 %

Co	max. 0.00001 %
Cr	max. 0.00001 %
Fe	max. 0.00001 %
Mn	max. 0.00001 %
Ni	max. 0.00001 %

Pb	max. 0.00001 %
Zn	max. 0.00001 %

Order-No.	Quantity
A3572,0500	500 ml
A3572,1000	1 L
A3572,10006	6 x 1 L
A3572,2500	2.5 L

tert.-Butanol for synthesis

C

*tert.-Butyl alcohol***Specification:**

Assay (HPLC)	min. 98 %
Water (K.F.)	max. 0.25 %

Order-No.	Quantity
A0773,1000	1 L
A0773,10006	6 x 1 L
A0773,2500	2.5 L
A0773,25004	4 x 2,5 L

tert.-Butanol 50 % p. A.

C

Specification:

Assay (HPLC)	min. 50 %
Non-volatile matter	max. 0.001 %
Al	max. 0.0005 %
Ca	max. 0.0005 %
Co	max. 0.00001 %

Cr	max. 0.00001 %
Fe	max. 0.00001 %
Mn	max. 0.00001 %
Ni	max. 0.00001 %
Pb	max. 0.00001 %

Zn	max. 0.00001 %

Order-No.	Quantity
A4699,0500	500 ml
A4699,1000	1 L
A4699,2500	2.5 L
A4699,5000	5 L

2-Butanone see Methyl ethyl ketone Page 538

cis-Butenedioic acid see Maleic acid pure Ph. Eur. Page 509

trans-Butenedioic acid see Fumaric acid Page 365

cis-Butenedioic acid disodium salt see Maleic acid disodium salt pure Page 509

3-Butenylglucosinolate potassium salt see Gluconapin HPLC grade Page 376

2-Butoxy ethanol see Ethylene glycol monobutyl ether Page 342

n-Butyl acetate*Acetic acid-n-butylester*

Boiling point	 126°C
Density (d 20°C/4°C)	.. 0.88

C ₈ H ₁₂ O ₂
M = 116.16 g/mol
CAS-No.: 123-86-4
HS-No.: 29153300
EC-No.: 204-658-1

Storage: RT
LGK: 3 A

Class / PG: 3/III
UN1123
WGK: 1
Warning
EUH066-H226-H336
P210

**n-Butyl acetate HPLC grade**

C

Specification:

Assay (HPLC)	min. 99 %
Acidity/Alkalinity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0005 %
Loss on drying	max. 0.05 %

A (1 cm/water HPLC grade)	
260 nm	 max. 0.3
280 nm	 max. 0.1
300 nm	 max. 0.05
320 nm	 max. 0.025
360 nm	 max. 0.005

Order-No.	Quantity
A2617,1000	1 L
A2617,2500	2.5 L

***n*-Butyl acetate p. A.**

C

Specification:

Assay (HPLC)	min. 99.5 %
Acidity/Alkalinity	max. 0.001 meq/g
Non-volatile matter	max. 0.001 %
Total P	max. 0.00002 %
Total S	max. 0.00005 %
Total Si	max. 0.000002 %
<i>n</i> -Butanol	max. 0.2 %

<i>n</i> -Butyl formiate	max. 0.1 %
<i>n</i> -Butyl propionate	max. 0.1 %
Water (K.F.)	max. 0.1 %
Ca	max. 0.00002 %
Cu	max. 0.00002 %
Fe	max. 0.00001 %
K	max. 0.00002 %

Mg	max. 0.000002 %
Na	max. 0.00002 %
Pb	max. 0.000005 %
Zn	max. 0.00001 %

Order-No.	Quantity
A0559,0500	500 ml
A0559,1000	1 L
A0559,10006	6 x 1 L
A0559,2500	2.5 L
A0559,5000	5 L
A0559,9010	10 L

***n*-Butyl acetate pure**

C

Specification:

Assay (HPLC)	min. 98.5 %
Loss on drying	max. 0.2 %
Pb	max. 0.005 %

Order-No.	Quantity
A2766,1000	1 L
A2766,10006	6 x 1 L
A2766,2500	2.5 L
A2766,25004	4 x 2.5 L
A2766,5000	5 L
A2766,9010	10 L
A2766,9025BK	25 L
A2766,9025PE	25 L

n-Butyl alcohol see 1-Butanol Page 170

sec.-Butyl alcohol see 2-Butanol Page 171

tert.-Butyl alcohol see tert.-Butanol Page 172

4-(Butylamino)benzoicacid 2-dimethylamino ethyl ester see Tetracaine hydrochloride BioChemica Page 804

Butylated hydroxytoluene (BHT)

B

lonol, 2,6-Di-*tert*.-butyl-4-methylphenol

C₁₅H₂₄O
M = 220.36 g/mol
CAS-No.: 128-37-0
HS-No.: 29071990
EC-No.: 204-881-4

Storage: RT
LGK: 10-13
Disposal: 3
H413
P273

Melting point 69 - 71°C

Specification:

Assay (HPLC)	min. 99 %
Solubility (10 %; MeOH)	... clear, colorless

Order-No.	Quantity
A3777,0025	25 g
A3777,0100	100 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. pp. 17.18.11-13 Suppl. 32 John Wiley & Sons, New York.

Comment: Butylated hydroxytoluene (BHT) is used as an antioxidant e. g. in the analysis of glycoconjugates. BHT prevents interference caused by peroxidation of hydroxylated fatty acids or the formation of interfering malonaldehyde. It is added before storage and the hydrolysis step, respectively (final concentration approx. 0.01 %). The hydrolysis for releasing the sialic acid is done enzymatically (Sialidase) or by acid (0.2 M sulfuric acid).

A stock solution of 1 % BHT in ethanol absolute can be stored indefinitely.

Butylated hydroxytoluene - Solution 1 % (in Ethanol)

B

BHT 1 % in EtOH abs.

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1993
WGK: 1
Danger
H225
P210



Specification:

Assay	approx. 1 %

Order-No.	Quantity
A1874,0010	10 ml
A1874,0050	50 ml

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. eds. (2001) *Current Protocols in Molecular Biology*. Supplement 32, Pages 17.18.11-14, Greene Publishing & Wiley-Interscience, New York.

Comment: BHT prevents interference caused by peroxidation of hydroxylated fatty acids in the preparation and analysis of glycoconjugates.

n-Butylcarbinol see *n*-Amyl alcohol Page 109

Butyl chloride see 1-Chlorobutane Page 203

***N*-(*tert*.-Butyldimethylsilyl)-*N*-methyltrifluoroacetamide**

C

MTBSTFA

C₉H₁₈F₃NOSi
M = 241.33 g/mol
CAS-No.: 77377-52-7
HS-No.: 29310099

Storage: 2-8°C
LGK: 3 A
Disposal: 24

Class / PG: 3/III
UN1993
WGK: 3
Warning
H226-H335-H319-H315
P302+P352-P305+P351+P338-
P304+P340-P210



Boiling point (35 Torr) . 127°C
Density (d 20°C/4°C) .. 1.03

Specification:

Assay (HPLC)	min. 95 %

Order-No.	Quantity
A1656,0001	1 ml
A1656,0005	5 ml

Comment: For the introduction of a *tert*.-Butyldimethylsilyl-group; fast reaction.

1,3-Butylene glycol see 1,3-Butanediol for synthesis Page 169
 1,4-Butylene glycol see 1,4-Butanediol for synthesis Page 170
 Butyl glycol see Ethylene glycol monobutyl ether Page 342

tert.-Butyl methyl ether

Methyl tert.-butyl ether, MTBE

Boiling point 55.3°C (1013 hPa)
 Density (20°C) 0.74 g/cm³
 Melting point -108.6°C
 Solubility (10°C) 26 g/L (H₂O)

C₅H₁₂O
M = 88.15 g/mol
 CAS-No.: 1634-04-4
 HS-No.: 29091990
 EC-No.: 216-653-1

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN2398
 WGK: 1
 Danger
 H225-H315
 P210-P302+P352



tert.-Butyl methyl ether p. A.

C

Specification:

Assay (HPLC) min. 99.5 %	Cu max. 0.00005 %
Non-volatile matter max. 0.001 %	Fe max. 0.00001 %
Water (K.F.) max. 0.05 %	Mn max. 0.00005 %
Al max. 0.0005 %	Ni max. 0.00005 %
Co max. 0.00005 %	Pb max. 0.00001 %
Cr max. 0.00005 %	Zn max. 0.00001 %

Order-No.	Quantity
A2621,0500	500 ml
A2621,1000	1 L
A2621,10006	6 x 1 L
A2621,2500	2.5 L
A2621,25004	4 x 2.5 L

tert.-Butyl methyl ether pure

C

Specification:

Assay (titr.) min. 99 %
 Non-volatile matter max. 0.005 %
 Water (K.F.) max. 0.05 %
 Pb max. 0.0005 %

Order-No.	Quantity
A2637,1000	1 L
A2637,2500	2.5 L
A2637,25004	4 x 2.5 L
A2637,5000	5 L
A2637,9010	10 L

tert.-Butyl methyl ether Technical grade

C

Specification:

Assay (HPLC) min. 99 %
 Water (K.F.) max. 0.05 %

Order-No.	Quantity
A5412,5000	5 L
A5412,9010	10 L
A5412,9025BK	25 L
A5412,9025PE	25 L

n-Butyric acid for synthesis

C

Boiling point 164°C
 Melting point -7°C
 Solubility (H₂O) soluble

C₄H₈O₂
M = 88.11 g/mol
 CAS-No.: 107-92-6
 HS-No.: 29156019
 EC-No.: 203-532-3

Storage: RT
 LGK: 8 A
 Disposal: 4

Class / PG: 8/III
 UN2820
 WGK: 1
 Danger
 H314
 P301+P330+P331-P305+P351+P338-
 P280



Specification:

Assay (HPLC) min. 99 %
 Water (K.F.) max. 0.2 %

Order-No.	Quantity
A2582,0010	10 ml
A2582,0100	100 ml
A2582,0500	500 ml
A2582,1000	1 L
A2582,10006	6 x 1 L

Butyric acid 1-naphthyl ester see 1-Naphthyl butyrate *BioChemica* Page 561
 CA19-9 see Cancer Antigen 19-9 (CA19-9), human Page 184
 CaCO₃ see Calcium carbonate precipitated Page 177

Cacodylic acid *BioChemica*

B

Dimethylarsinic acid

$C_2H_7AsO_2$
 $M = 138.00$ g/mol
 CAS-No.: 75-60-5
 HS-No.: 29310099

Storage: RT
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/II
 UN1572
 WGK: 3
 Danger
 H301-H410-H331
 P304+P340-P273



Useful pH range pH 5.8 - 6.8
 pK_a (25°C) 6.27

Specification:

Assay (titr.) min. 99 %
 Monomethylarsinic acid ... max. 1 %

Order-No.	Quantity
A1497,0010	10 g
A1497,0025	25 g
A1497,0050	50 g

Literature: (1) Yamanaka, K. *et al.* (1991) *Toxicol. Appl. Pharmacol.* **108**, 205-213
 (2) Murai, T. *et al.* (1993) *Toxicol. Lett.* **66**, 53-61
 (3) Yamamoto, S. *et al.* (1995) *Cancer Res.* **55**, 1271-1276

Cellular response to oxidative damage by cacodylic acid.
 Damage of the kidney by cacodylic acid in rats.
 Induction of cancer by cacodylic acid after pretreatment with carcinogens.

Comment: Cacodylic acid (Dimethylarsinic acid) is a naturally occurring organic, methylated metabolite of arsenic acid. After pretreatment with several carcinogenic substances, cacodylic acid promotes the tumor formation. The organs liver and kidney, responsible for the detoxification of the body, are the main targets. At concentrations of 50 ppm cacodylic acid, effects on tumor induction and cell proliferation are measurable (2, 3).

Cacodylic acid sodium salt trihydrate *BioChemica*

B

Sodium cacodylate, Dimethylarsinic acid sodium salt

$C_2H_6AsNaO_2 \cdot 3H_2O$
 $M = 214.03$ g/mol
 CAS-No.: 6131-99-3
 HS-No.: 29310099
 EC-No.: 204-708-2

Storage: RT
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/II
 UN1688
 WGK: 3
 Danger
 H301-H331-H410
 P304+P340-P273



Melting point 60°C
 Solubility (20°C) 2000 g/L (H₂O)

Specification:

Assay (titr.) min. 98 %
 Solubility (10 %; H₂O) clear, colorless
 Chloride max. 0.002 %
 Sulfate max. 0.002 %

Cd max. 0.005 %
 Cu max. 0.005 %
 Fe max. 0.005 %
 Pb max. 0.005 %

Zn max. 0.005 %

Order-No.	Quantity
A2140,0050	50 g
A2140,0100	100 g
A2140,0250	250 g

Literature: (1) Okayma, H. & Berg, P. (1982) *Mol. Cell. Biol.* **2**, 161-170
 (2) Yamamoto, K. & Ogawa, K. (1983) *Histochemistry* **77**, 339-351
 (3) Hardham, A.R. (1985) *J. Histochem. Cytochem.* **33**, 110-118

High-efficiency cloning of full-length cDNA.
 Effects of NaOH-PIPES buffer used in aldehyde fixative on alkaline Phosphatase activity in rat hepatocytes.
 Studies on the cell surface of zoospores and cysts of the fungus *Phytophthora cinnamomi*: The influence of fixation on patterns of Lectin binding.
 Enzymes for modifying and labeling DNA and RNA.
 DNA Sequencing: Chemical methods.
 Chemical reactivity of potassium permanganate and diethyl pyrocarbonate with B DNA: Specific reactivity with short A-tracks.

(4) Cobianchi, F. & Wilson, S.H. (1987) *Methods Enzymol.* **152**, 94-110
 (5) Ambrose, B.J.B. & Pless, R.C. (1987) *Methods Enzymol.* **152**, 522-538
 (6) McCarthy, J.G. *et al.* (1990) *Biochemistry* **29**, 6071-6081

Comment: Sodium cacodylate is a widely used buffer for different assays: (I) enzyme reaction buffer (e. g. ref. 1, 4); labeling of DNA at the 3' end with [α -³²P]ddATP in 140 mM sodium cacodylate buffer (pH 7.2, ref. 4; pH 6.8 ref. 1) and terminal transferase; (II) reaction buffer for the chemical modification / cleavage, e. g. for the sequencing of DNA (50 mM, pH 8.0, ref. 5); (III) fixation of tissue, membranes and cells with glutaraldehyde or formaldehyde, respectively, in fixation buffer (e. g. ref. 2, 3). The working concentration ranges from 10 - 50 mM and a pH value of 7.2. Please note, that cacodylate inhibits the alkaline phosphatase in a concentration dependent manner in the cytochemical assay for this enzyme. As an alternative, the authors recommend the use of a NaOH-Pipes buffer (2)

Caffeine pure Ph. Eur., USP

C

$C_8H_{10}N_4O_2$
 $M = 194.20$ g/mol
 CAS-No.: 58-08-2
 HS-No.: 29393000
 EC-No.: 200-362-1

Storage: RT
 LGK: 10 - 13

Class / PG: 6.1/III
 UN1544
 WGK: 1
 Danger
 H301
 P305+P351+P338



Specification:

Assay 98.5 - 101.0 %
 Assay (titr.) 98.5 - 101.5 %
 Acidic reacting subst. complies
 Appearance white, crystalline powder
 Chromatogr. purity complies
 Heavy metals (as Pb) max. 0.001 %
 Identity (IR) complies
 Loss on drying max. 0.5 %

Melting range 235 - 239°C
 Organic vol. impurities . complies
 Readily carbon. subst. . complies
 Related subst. max. 0.5 %
 Sulfated ash max. 0.1 %
 Other Alkaloids complies
 Sulfate max. 0.05 %

Order-No.	Quantity
A1611,0100	100 g
A1611,0500	500 g
A1611,1000	1 kg
A1611,10006	6 x 1 kg
A1611,5000	5 kg
A1611,9010	10 kg
A1611,9025	25 kg

Caffeine, bean-like shape

B

Coffee

HS-No.: 09012100

Storage: RT

Specification:

Caffeine * approx. 1 - 4,5 %
 Fat * approx. 14 %

Protein * approx. 14 %
 Raw cellulose * approx. 25 %

Sugar * approx. 2 %
 Water * approx. 1 %

Order-No.
A7852,0500

Quantity
 500 g

* Content of roasted coffee according to literature.

Literature: (1) <http://en.wikipedia.org/wiki/Coffee> (as at January 28th 2008). Wikipedia® is a registered trademark of Wikimedia Foundation Inc.

Comment: The English word coffee first came to be used in the early- to mid-1600s, but early forms of the word date to the last decade of the 1500s. It comes from the Italian caffè. This, in turn, was borrowed from the Ottoman Turkish kahveh, and the Arabic qahwa collectively. The origin of the Arabic term is uncertain; it is either derived from the name of the Kaffa region in western Ethiopia, where coffee was cultivated, or by a truncation of qahwat al-bunn, meaning "wine of the bean" in Arabic.

Coffee is a widely consumed stimulant beverage prepared from roasted seeds, commonly called beans, of the coffee plant. Coffee was first consumed in the 9th century, when it was discovered in the highlands of Ethiopia. From there, it spread to Egypt and Yemen, and by the 15th century had reached Persia, Turkey, and northern Africa. From the Muslim world, coffee spread to Italy, then to the rest of Europe and the Americas. Today, coffee is one of the most popular beverages worldwide.

Coffee berries, which contain the coffee bean, are produced by several species of small evergreen bush of the genus *Coffea*. The two most commonly grown species are *Coffea canephora* (also known as *Coffea robusta*) and *Coffea arabica*. These are cultivated in Latin America, southeast Asia, and Africa. Once ripe, coffee berries are picked, processed, and dried. The seeds are then roasted, undergoing several physical and chemical changes. They are roasted to various degrees, depending on the desired flavor. They are then ground and brewed to create coffee.

2-Caffeoyltartaric acid see Caftaric acid HPLC grade Page 176

Caftaric acid HPLC grade

B

2-Caffeoyltartaric acid
 from *Echinacea pallida*

C₁₃H₁₂O₉
 M = 312.24 g/mol
 HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.
A6747,0010
A6747,0020

Quantity
 10 mg
 20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Calciferol see Vitamin D₂ Page 856

Calcimycin see A23187 Page 37

Calcimycin calcium magnesium salt see A23187 calcium magnesium salt *BioChemica* Page 37

Calcium acetate hydrate

Acetic acid calcium salt hydrate

C₄H₆CaO₄ · xH₂O
 M = 158.17 g/mol · xH₂O
 CAS-No.: 114460-21-8
 HS-No.: 29152900
 EC-No.: 200-540-9

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: 1

Solubility (20°C) 1330 g/L (H₂O)
 Thermal dec. 160°C

Calcium acetate hydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 pH (1 M; H₂O; 20°C) 7.0 - 8.5
 Loss on drying max. 7.0 %
 Chloride max. 0.005 %
 Sulfate max. 0.01 %

As max. 0.0001 %
 Co max. 0.0005 %
 Cr max. 0.0005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %

Na max. 0.01 %
 Pb max. 0.0005 %

Order-No.
A1871,0500
A1871,1000
A1871,10006
A1871,5000

Quantity
 500 g
 1 kg
 6 x 1 kg
 5 kg

Calcium acetate hydrate for soil testing

C

Specification:

Assay (complexometr.) 93 - 96 %
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Total P max. 0.002 %
 pH (5 %; H₂O; 25°C) 7.2 - 8.0
 Chloride max. 0.01 %

Fluoride max. 0.005 %
 Sulfate max. 0.05 %
 K max. 0.02 %
 Na max. 0.02 %

Order-No.
A2106,0500
A2106,1000
A2106,10006
A2106,5000
A2106,9010

Quantity
 500 g
 1 kg
 6 x 1 kg
 5 kg
 10 kg

Calcium acetate hydrate pure

C

Specification:

Assay (titr.) min. 98 %
 Loss on drying max. 11 %
 pH (5 %; H₂O; 20°C) 6.0 - 9.0
 Chloride max. 0.05 %
 Sulfate max. 0.01 %
 Pb max. 0.001 %

Order-No.
A1646,0500
A1646,1000
A1646,10006
A1646,5000
A1646,9010
A1646,9025

Quantity
 500 g
 1 kg
 6 x 1 kg
 5 kg
 10 kg
 25 kg

Calcium L-ascorbate dihydrate pure Ph. Eur.

C

L-Ascorbic acid calcium salt dihydrate

 $C_{12}H_{14}CaO_{12} \cdot 2H_2O$

Storage: RT

M = 426.35 g/mol

CAS-No.: 5743-28-2

HS-No.: 29362700

EC-No.: 227-261-5

Specification:

Assay (titr.) 99.0 - 100.5 %

α20°C/D, 10 %, H₂O +95° - +97°

Appearance of solution complies

Heavy metals (as Pb) max. 0.001 %

Identity complies

Loss on drying max. 0.1 %

pH (10 %; H₂O) 6.8 - 7.4

Fluoride max. 0.001 %

Cu max. 0.0005 %

Fe max. 0.0002 %

Order-No.

A4780,0100

A4780,0500

A4780,1000

Quantity

100 g

500 g

1 kg

Calcium carbonate precipitated

CaCO₃

CCaO₃

Storage: RT

WGK: nwg

M = 100.09 g/mol

CAS-No.: 471-34-1

HS-No.: 28365000

EC-No.: 207-439-9

Melting point 825°C (dec.)

LGK: 10 - 13

Disposal: 14

Calcium carbonate precipitated p. A.

C

Specification:

Assay (titr.) min. 99.5 %

HCl-insoluble matter max. 0.005 %

Ba max. 0.02 %

Fe max. 0.01 %

K max. 0.002 %

Mg max. 0.02 %

Na max. 0.005 %

Pb max. 0.001 %

Sr max. 0.02 %

Order-No.

A1872,0500

A1872,1000

A1872,10006

A1872,5000

Quantity

500 g

1 kg

6 x 1 kg

5 kg

Calcium carbonate precipitated pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 100.5 %

Acetic acid-insoluble matter max. 0.2 %

Heavy metals (as Pb) max. 0.002 %

Identity complies

In HCl insoluble matter max. 0.2 %

Loss on drying max. 2 %

Chloride max. 0.033 %

Fluoride max. 0.005 %

Sulfate max. 0.25 %

As max. 0.0003 %

Ba complies

Fe max. 0.02 %

Hg max. 0.00005 %

Mg, Alkali metals max. 1 %

Pb max. 0.0003 %

Order-No.

A0774,1000

A0774,10006

A0774,5000

A0774,9010

A0774,9025

Quantity

1 kg

6 x 1 kg

5 kg

10 kg

25 kg

Calcium carbonate see Marble granular for producing CO₂ Page 516

Calcium chloride granulated

Desiccant

CaCl₂

Storage: RT

WGK: 1

M = 110.99 g/mol

CAS-No.: 10043-52-4

HS-No.: 28272000

EC-No.: 233-140-8

Melting point 772°C

Particle size 1 - 5 mm

Solubility (20°C) 740 g/L (H₂O)

LGK: 10 - 13

Disposal: 14

hygroscopic

Warning

H319

P305+P351+P338



Calcium chloride granulated, pure

C

Chlorcalcium

Specification:

Assay (titr.) min. 97 %

Order-No.

A4088,0500

A4088,1000

A4088,10006

A4088,5000

Quantity

500 g

1 kg

6 x 1 kg

5 kg

Calcium chloride granulated, Technical grade

C

Specification:

Assay (titr.) min. 90 %

Order-No.

A6362,1000

A6362,10006

A6362,5000

A6362,9010

A6362,9025

Quantity

1 kg

6 x 1 kg

5 kg

10 kg

25 kg

Calcium chloride dried, powdered

Chloro calcium

Melting point 772°C
Solubility (20°C) 740 g/L (H₂O)

CaCl₂
M = 110.99 g/mol
CAS-No.: 10043-52-4
HS-No.: 28272000
EC-No.: 233-140-8

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
hygroscopic
Warning
H319
P305+P351+P338



Calcium chloride dried, powdered *BioChemica*

Specification:

Assay (titr.) min. 97 %

Order-No.	Quantity
A3652,0500	500 g
A3652,1000	1 kg
A3652,5000	5 kg

B

Calcium chloride dried, powdered pure

Specification:

Assay (titr.) min. 97 %
Free alkalines max. 0.2 %

Order-No.	Quantity
A1428,0500	500 g
A1428,1000	1 kg
A1428,10006	6 x 1 kg
A1428,5000	5 kg

C

Calcium chloride dihydrate

Melting point 175°C
Solubility (20°C) 1000 g/L (H₂O)

CaCl₂ · 2H₂O
M = 147.02 g/mol
CAS-No.: 10035-04-8
HS-No.: 28272000
EC-No.: 233-140-8

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
Warning
H319
P305+P351+P338



Calcium chloride dihydrate Molecular Biology grade

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
Fluoride max. 0.005 %
Sulfate max. 0.005 %

Al max. 0.0001 %
As max. 0.0001 %
Cu max. 0.0005 %
Fe max. 0.001 %

Pb max. 0.0005 %
Zn max. 0.0005 %

Order-No.	Quantity
A4689,0250	250 g
A4689,0500	500 g
A4689,1000	1 kg

B

Calcium chloride dihydrate *BioChemica*

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0,001 %
Insoluble matter complies
pH (5 %; H₂O; 20°C) 4.5 - 8.0
Sulfate max. 0.005 %

A (1 cm/1 M in H₂O)
260 nm max. 0.015
280 nm max. 0.01

Order-No.	Quantity
A1873,0500	500 g
A1873,1000	1 kg
A1873,5000	5 kg

B

Calcium chloride dihydrate p. A.

Specification:

Assay (titr.) min. 99.5 %
pH (5 %; H₂O; 20°C) 4.5 - 8.0
Sulfate max. 0.005 %
Al max. 0.0001 %
As max. 0.0001 %
Ba max. 0.003 %
Fe max. 0.0005 %

Mg max. 0.005 %
Na max. 0.005 %
Pb max. 0.0005 %

Order-No.	Quantity
A3587,0500	500 g
A3587,1000	1 kg
A3587,10006	6 x 1 kg
A3587,5000	5 kg
A3587,9010	10 kg
A3587,9025	25 kg

C

Calcium chloride dihydrate pure Ph. Eur., BP, USP, Food grade

Specification:

Assay (titr.) 99.0 - 103.0 %
Acidic/alkaline react. subst. complies
Ammonia-precip. matter complies
Appearance of solution complies
Heavy metals (as Pb) max. 0.0005 %
Identity complies

Organic vol. matter complies
pH (5 %; H₂O; 20°C) 4.5 - 8.5
ClO⁻ complies
Fluoride max. 0.004 %
Sulfate max. 0.01 %
Al max. 0.0001 %

As max. 0.0002 %
Ba complies
Fe max. 0.001 %
Hg max. 0.0001 %
Mg, Alkali metals max. 0.2 %
Pb max. 0.0005 %

Order-No.	Quantity
A0775,1000	1 kg
A0775,10006	6 x 1 kg
A0775,5000	5 kg
A0775,9010	10 kg
A0775,9025	25 kg

C

Calcium chloride hexahydrate

Melting point 30°C
Solubility (20°C) 5360 g/L (H₂O)

CaCl₂ · 6H₂O
M = 219.09 g/mol
CAS-No.: 7774-34-7
HS-No.: 28272000
EC-No.: 233-140-8

Storage: 2-8°C
LGK: 10 - 13
Disposal: 14

WGK: 1
Warning
H319
P305+P351+P338



Calcium chloride hexahydrate p. A.

C

Specification:

Assay (titr) min. 99 %
pH (2 %; H₂O) 4.0 - 7.0 (20°C)
Sulfate max. 0.001 %
As max. 0.00002 %
Cu max. 0.0005 %
Fe max. 0.0005 %

Mg max. 0.05 %
Pb max. 0.0005 %
Zn max. 0.001 %

Order-No.	Quantity
A2326,1000	1 kg
A2326,10006	6 x 1 kg
A2326,5000	5 kg
A2326,9010	10 kg
A2326,9025	25 kg

Calcium chloride hexahydrate pure Ph. Eur.

C

Specification:

Assay (complexometr.) 97.0 - 103.0 %
Acidic/alkaline react. subst. complies
Appearance of solution complies
Heavy metals (as Pb) max. 0.0015 %
Identity complies
Sulfate max. 0.02 %

Al complies
Ba complies
Fe max. 0.0007 %
Mg, Alkali metals max. 0.3 %

Order-No.	Quantity
A2303,1000	1 kg
A2303,10006	6 x 1 kg
A2303,5000	5 kg
A2303,9010	10 kg
A2303,9025	25 kg

Calcium chloride - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Calcium chloride - Solution (27.5 g/L) for BOD-determination

C

Aqueous solution

Composition:

CaCl₂ 27.5 g/L

Order-No.	Quantity
A1429,0500	500 ml
A1429,1000	1 L

Calcium chloride - Solution (20.00 g/L Ca) for quantitative analysis

C

Composition:

CaCl₂ · 2H₂O (A3587) 72.07 g/L

Order-No.	Quantity
A3301,0250	250 ml
A3301,0500	500 ml
A3301,1000	1 L

Calcium chloride - Solution (1 M) BioChemica

B

Composition:

CaCl₂ · 2H₂O (A1873) 147.02 g/L

Order-No.	Quantity
A3779,0500	500 ml
A3779,1000	1 L

Calcium chloride - Standard volumetric solution (1 M)

C

1 mol/L (2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3282,0500	500 ml
A3282,1000	1 L

Calcium chloride - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0835,0500	500 ml
A0835,1000	1 L
A0835,10006	6 x 1 L

tri-Calcium dicitrate tetrahydrate pure

C

<i>Tricalcium citrate</i>	$C_{12}H_{10}Ca_3O_{14} \cdot 4H_2O$	Storage: RT
	$M = 570.51 \text{ g/mol}$	LGK: 10 - 13
Solubility (18°C) 0.85 g/L (H_2O)	CAS-No.: 5785-44-4	
	HS-No.: 29181500	
	EC-No.: 212-391-7	

Specification:

Assay (titr.) min. 98 %
Loss on drying 10.0 - 13.3 %
Fluoride max. 0.003 %
As max. 0.0003 %

Fe max. 0.005 %
Pb max. 0.002 %

Order-No.	Quantity
A2324,1000	1 kg
A2324,10006	6 x 1 kg
A2324,5000	5 kg

Calcium folinate see Folinic acid calcium salt pentahydrate Page 355

Calcium gluconate monohydrate pure Ph. Eur., USP

C

<i>D-Gluconic acid calcium salt monohydrate</i>	$C_{12}H_{22}CaO_{14} \cdot H_2O$	Storage: RT	WGK: 1
	$M = 448.40 \text{ g/mol}$	LGK: 10 - 13	
Melting point 178°C	CAS-No.: 66905-23-5		
Solubility (20°C) 30 g/L (H_2O)	HS-No.: 29181600		
	EC-No.: 206-075-8		

Specification:

Assay (titr.) 99.0 - 101.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on drying max. 1 %
Organic subst, boric acid complies

Organic vol. impurities complies
Red. substances max. 1 %
Sucrose / red. sugars complies
Chloride max. 0.005 %
Oxalate max. 0.01 %
Phosphate max. 0.01 %

Sulfate max. 0.005 %
As max. 0.0003 %
Fe max. 0.0003 %
Mg/Alk. earth metals max. 0.4 %

Order-No.	Quantity
A6259,0100	100 g
A6259,0500	500 g
A6259,1000	1 kg
A6259,10006	6 x 1 kg
A6259,5000	5 kg

Calcium gluconate - Solution saturated pure

C

HS-No.: 38220000	Storage: RT
	LGK: 10 - 13

Composition:

Calcium gluconate approx. 30 g/L

Order-No.	Quantity
A4427,0500	500 ml
A4427,1000	1 L
A4427,10006	6 x 1 L

Calcium hydroxide

Solubility (20°C) 1.7 g/L (H_2O)	CaH_2O_2	Storage: RT	WGK: 1
	$M = 74.10 \text{ g/mol}$	LGK: 10 - 13	Danger
	CAS-No.: 1305-62-0	Disposal: 14	H318
	HS-No.: 28259019		P305+P351+P338-P313-P280
	EC-No.: 215-137-3		

**Calcium hydroxide p. A.**

C

Specification:

Assay min. 96 %
HCl-insoluble matter max. 0.1 %
Calcium carbonate max. 3 %
Chloride max. 0.005 %
Sulfate max. 0.2 %

Fe max. 0.05 %
Pb max. 0.005 %

Order-No.	Quantity
A2925,0500	500 g
A2925,1000	1 kg
A2925,10006	6 x 1 kg
A2925,5000	5 kg

Calcium hydroxide pure

C

Specification:

Assay (acidimetr.) min. 95 %
HCl-insoluble matter max. 0.5 %
Heavy metals (as Pb) max. 0.002 %
Carbonate max. 5 %
Mg and Alkali salts max. 4 %

Order-No.	Quantity
A3527,1000	1 kg
A3527,10006	6 x 1 kg
A3527,5000	5 kg
A3527,9010	10 kg

Calcium hydroxide pure Ph. Eur., USP, FCC

C

Specification:

Assay (titr.) 95.0 - 100.5 %
Chlorid (10 % Lösung) max. 0.033 %
HCl-insoluble matter max. 0.5 %
Heavy metals (as Pb) max. 0.002 %

Identity complies
Sulfate max. 0.4 %
Carbonate (as $CaCO_3$) complies
Fluoride max. 0.005 %

As max. 0.0003 %
Ba max. 0.03 %
Mg, Alkali metals max. 1.0 %
Pb max. 0.0002 %

Order-No.	Quantity
A2777,1000	1 kg
A2777,10006	6 x 1 kg
A2777,5000	5 kg

Calcium hypophosphite pure DAC

C

*Calcium phosphinate*Solubility (20°C) 150 g/L (H₂O)

M = 170.05 g/mol
 CAS-No.: 7789-79-9
 HS-No.: 28351000
 EC-No.: 232-190-8

Storage: RT
 LGK: 4.1 B

Class / PG: 4.1/II
 UN3178
 WGK: 3
 Danger
 H228
 P210-P233

**Specification:**

Assay (titr.) 98.0 - 100.5 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Free acid max. 0.1 mmol/g
 Heavy metals (as Pb) max. 0.001 %

Loss on drying (105°C; 1 h) complies
 max. 0.5 %
 Residual solvents complies
 Chloride max. 0.02 %
 Phosphate, Phosphite (as PO₄)

..... complies
 Sulfate max. 0.02 %
 As max. 0.0002 %
 Ba complies
 Fe max. 0.002 %

Order-No.	Quantity
A5485,0100	100 g
A5485,0500	500 g
A5485,1000	1 kg

Calcium ionophore A23187 see A23187 Page 37

Calcium lactate pentahydrate*Lactic acid calcium salt*

Solubility (20°C) 66 g/L (H₂O)
 Thermal dec. 120°C

$\text{C}_6\text{H}_{10}\text{CaO}_6 \cdot 5\text{H}_2\text{O}$
M = 308.30 g/mol
 CAS-No.: 28305-25-1
 HS-No.: 29181100
 EC-No.: 248-953-3

Storage: RT
 LGK: 10 - 13

WGK: nwg

Calcium lactate pentahydrate BioChemica

B

Specification:

Assay (complexometr.) min. 98 %
 Heavy metals (as Pb) max. 0.002 %
 Insoluble matter complies
 Loss on drying 22 - 27 %
 Solubility (2 %; H₂O) clear, colorless

pH (5 %; H₂O) 6.0 - 8.0
 Chloride max. 0.02 %
 Sulfate max. 0.04 %

Order-No.	Quantity
A3670,0500	500 g
A3670,1000	1 kg
A3670,5000	5 kg
A3670,9010	10 kg

Calcium lactate pentahydrate p. A.

C

Specification:

Assay (complexometr.) min. 99 %
 Loss on drying max. 30 %
 pH (5 %; H₂O) 6.0 - 8.0
 Chloride max. 0.01 %
 Sulfate max. 0.02 %
 Fe max. 0.001 %

Mg and Alkali salts max. 1 %
 Zn max. 0.0005 %

Order-No.	Quantity
A3959,0250	250 g
A3959,0500	500 g
A3959,1000	1 kg
A3959,10006	6 x 1 kg
A3959,5000	5 kg

Calcium lactate pentahydrate for soil testing

C

Specification:

Assay (complexometr.) min. 98 %
 Identity (IR) complies
 pH (5 %; H₂O) 6.0 - 7.0
 Water (K.F.) 22 - 30 %
 Phosphate max. 0.002 %
 K max. 0.01 %

Order-No.	Quantity
A4296,0100	100 g
A4296,0250	250 g
A4296,0500	500 g
A4296,1000	1 kg
A4296,10006	6 x 1 kg
A4296,5000	5 kg
A4296,9010	10 kg
A4296,9025	25 kg

Calcium lactate pentahydrate pure Ph. Eur., USP

C

Specification:

Assay (complexometr.) 98.0 - 101.0 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying 22 - 27 %

Organic vol. impurities complies
 Volatile fatty acids complies
 Chloride max. 0.02 %
 Sulfate max. 0.04 %
 Ba complies
 Fe max. 0.005 %

Mg and Alkali salts
 max. 1.0 %

Order-No.	Quantity
A0778,0500	500 g
A0778,1000	1 kg
A0778,10006	6 x 1 kg
A0778,5000	5 kg
A0778,9010	10 kg

Calcium nitrate tetrahydrate

Solubility (20°C) 2660 g/L (H₂O)
Thermal dec. 130°C

CaN₂O₆ · 4H₂O
M = 236.15 g/mol
CAS-No.: 13477-34-4
HS-No.: 28342980
EC-No.: 233-332-1

Storage: RT
LGK: 5.1 B
Disposal: 14

Class / PG: 5.1/III
UN1454
WGK: 1
Warning
H272



Calcium nitrate tetrahydrate *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H₂O) 5.0 - 7.0 (20°C)

Chloride max. 0.002 %
Sulfate max. 0.002 %

Order-No.	Quantity
A3679,0500	500 g
A3679,1000	1 kg
A3679,5000	5 kg

Calcium nitrate tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
pH (5 %; H₂O; 20°C) 5.0 - 7.0
Chloride max. 0.002 %
Sulfate max. 0.002 %
As max. 0.00002 %

Cu max. 0.0005 %
Fe max. 0.0005 %
Mg max. 0.01 %
Na max. 0.01 %
Pb max. 0.0002 %

Order-No.	Quantity
A1699,0500	500 g
A1699,1000	1 kg
A1699,10006	6 x 1 kg
A1699,5000	5 kg

Calcium nitrate tetrahydrate pure

C

Specification:

Assay (titr.) min. 98 %
pH (5 %; H₂O; 20°C) 4.0 - 7.0
Chloride max. 0.005 %
Sulfate max. 0.02 %
Cu max. 0.001 %
Fe max. 0.001 %

Pb max. 0.002 %

Order-No.	Quantity
A1942,1000	1 kg
A1942,10006	6 x 1 kg
A1942,5000	5 kg
A1942,9010	10 kg
A1942,9025	25 kg

tri-Calcium orthophosphate see *tri*-Calcium phosphate pure Ph. Eur. Page 182

Calcium D-pantothenate see D-Pantothenic acid calcium salt Page 590

tert-Calcium phosphate see *tri*-Calcium phosphate pure Ph. Eur. Page 182

tri-Calcium phosphate pure Ph. Eur.

C

tri-Calcium orthophosphate, *tert*-
Calcium phosphate

Ca₃O₈P₂
M = 310.18 g/mol
CAS-No.: 7758-87-4
HS-No.: 28352600
EC-No.: 231-840-8

Storage: RT
LGK: 10 - 13

WGK: nwg

Melting point 1730°C
Solubility (20°C) insoluble (H₂O)

Specification:

Assay (Ca) 35.0 - 40.0 %
Acid-insoluble subst. max. 0.2 %
Heavy metals (as Pb) max. 0.003 %
Identity complies

Loss on ignition (800°C) . max. 8.0 %
Chloride max. 0.15 %
Fluoride max. 0.0075 %
Sulfate max. 0.5 %

As max. 0.0004 %
Fe max. 0.04 %

Order-No.	Quantity
A0779,0500	500 g
A0779,1000	1 kg
A0779,5000	5 kg

Calcium phosphinate see Calcium hypophosphite pure DAC Page 181

Calcium saccharate tetrahydrate pure USP

C

C₆H₆CaO₈ · 4H₂O
M = 320.27 g/mol
CAS-No.: 5793-89-5
HS-No.: 29400000
EC-No.: 227-334-1

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

Assay (titr.) 98.5 - 102.0 %
α25/D; 6 %, 4.8 M HCl +18.5° - +22.5°
Heavy metals (as Pb) max. 0.002 %

Identity complies
Organic vol. impurities complies
Sucrose and red. sugars complies

Chloride max. 0.07 %
Sulfate max. 0.12 %

Order-No.	Quantity
A4737,0100	100 g
A4737,0500	500 g

Calcium sulfate dihydrate

$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

$\text{CaO}_4\text{S} \cdot 2\text{H}_2\text{O}$

Storage: RT

WGK: 1

Solubility (20°C) 2 g/L (H_2O)

$M = 172.17 \text{ g/mol}$

LGK: 10 - 13

Thermal dec. 100°C

CAS-No.: 10101-41-4

Disposal: 14

HS-No.: 28332980

EC-No.: 231-900-3

Calcium sulfate dihydrate p. A.

C

Specification:

Assay (titr.) min. 99 %	Zn max. 0.003 %
Chloride max. 0.005 %	
As max. 0.0002 %	
Fe max. 0.001 %	
Pb max. 0.002 %	

Order-No.	Quantity
A2321,0500	500 g
A2321,1000	1 kg
A2321,10006	6 x 1 kg
A2321,5000	5 kg

Calcium sulfate dihydrate pure Ph. Eur.

C

Specification:

Assay (complexometr.) 98.0 - 102.0 %	Fe max. 0.01 %
Acidic/alkaline react. subst. complies	
Heavy metals (as Pb) max. 0.002 %	
Identity complies	
Loss on ignition (800°C) 18.0 - 22.0 %	
Chloride max. 0.03 %	
As max. 0.001 %	

Order-No.	Quantity
A0905,0500	500 g
A0905,1000	1 kg
A0905,10006	6 x 1 kg
A0905,5000	5 kg
A0905,9010	10 kg
A0905,9025	25 kg

Calf Intestine Phosphatase see Phosphatase, alkaline from calf intestine (CIP) Page 623

Calpain Inhibitor I

B

N-Acetyl-L-leucyl-L-leucyl-L-norleucinal,
Ac-Leu-Leu-Nle-al

$\text{C}_{20}\text{H}_{37}\text{N}_3\text{O}_4$
 $M = 383.5 \text{ g/mol}$
CAS-No.: 110044-82-1
HS-No.: 29241900

Storage: -20°C

Specification:

Assay min. 97 %

Order-No.	Quantity
A6804,0005	5 mg
A6804,0025	25 mg

Comment: Calpain Inhibitor I inhibits calpains (calcium-dependent cysteine proteases). The recommended working concentration is 40 µM. Stock solutions of the inhibitor (10 mg/ml in DMF, DMSO, ethanol or methanol) are stable only for a few days at -20°C.

Calpain Inhibitor II

B

Ac-Leu-Leu-Met-al, *N*-Acetyl-L-leucyl-L-leucyl-L-methioninal

$\text{C}_{19}\text{H}_{35}\text{N}_3\text{O}_4\text{S}$
 $M = 401.6 \text{ g/mol}$
CAS-No.: 136632-32-1
HS-No.: 29309099

Storage: -20°C

Specification:

Assay min. 97 %

Order-No.	Quantity
A6921,0005	5 mg
A6921,0025	25 mg

Comment: Calpain Inhibitor II inhibits calpains (calcium-dependent cysteine proteases) and slightly papain. The recommended working concentration is 17 µM. Stock solutions of the inhibitor (10 mg/ml in DMF, DMSO, ethanol or methanol) are stable only for a few days at -20°C.

Calpain Inhibitor III

B

Carbobenzoxy-valinyl-phenylalaninal,
MDL 28170, Z-Val-Phe-al

$\text{C}_{22}\text{H}_{26}\text{N}_2\text{O}_4$
 $M = 382.5 \text{ g/mol}$
CAS-No.: 88191-84-8
HS-No.: 38220000

Storage: -20°C

Specification:

Assay min. 95 %

Order-No.	Quantity
A6945,0005	5 mg
A6945,0025	25 mg

Comment: Calpain Inhibitor III inhibits cell-permeable calpains I and II (calcium-dependent cysteine proteases). The recommended working concentration ranges from 1 - 17 µM. Stock solutions of the inhibitor (10 mg/ml in DMSO, ethanol or methanol; water-insoluble) are stable only for a few days at -20°C.

Campani® see Staining reagent for juice Page 762

D-Campher pure Ph. Eur., USP

C

Flash point 66°C
Solubility (20°C) rarely soluble
(H₂O)

C₁₀H₁₆O
M = 152.24 g/mol
CAS-No.: 464-49-3
HS-No.: 29142100
EC-No.: 207-355-2

Storage: RT
LGK: 4.1 B
Disposal: 3

Class / PG: 4.1/III
UN2717
WGK: 1
Danger
H335-H228-H319-H315
P305+P351+P338-P302+P352


Specification:

α₂₀°C/D: 10 %, 96 % EtOH +41.0° - +43.0°
Acidic/alkaline react. subst. complies
Appearance of solution complies
Identity complies

Melting range 174 - 179°C
Non-volatile matter max. 0.05 %
Related subst. complies
Halogen compounds max. 0.01 %

Loss on drying complies

Order-No.
A3503,0500 500 g
A3503,1000 1 kg
A3503,5000 5 kg

Canada balsam genuine

C

Density (d 20°C/4°C) .. 0.990
n 20°C/D 1.5220

CAS-No.: 8007-47-4
HS-No.: 13019000
EC-No.: 232-362-2

Storage: RT
LGK: 10 - 13

Class / PG: 3/III
UN1993
WGK: 2
Warning
H226
P210

Order-No.
A0569,0025 25 ml
A0569,0050 50 ml
A0569,0100 100 ml

Canavanine sulfate BioChemica

B

Melting point 160 - 165°C (dec.)

C₅H₁₂N₄O₃ · H₂SO₄
M = 274.26 g/mol
CAS-No.: 2219-31-0
HS-No.: 29280090
EC-No.: 218-728-4

Storage: 2-8°C
LGK: 13
Disposal: 3

Warning
H332-H302-H312
P280


Specification:

Assay (TLC) min. 98 %
α₂₀°C/D: 2 %, H₂O +16° - +18°
Water (K.F.) max. 7 %

Order-No.
A3780,0050 50 mg
A3780,0100 100 mg

Cancer Antigen 19-9 (CA19-9), human

B

CA19-9
supplied liquid in 0.1 M PBS, pH 7.2;
0.05 % sodium azide
from human ascites fluid

HS-No.: 38220000

Storage: -20°C
Avoid repeated changes in the solu-
tion temperature!

Specification:

Assay min. 70 %
Appearance clear, colorless
Concentration (CIS RIA) min. 10,000 U/ml

Order-No.
A6941,0001 1 KU
A6941,0010 10 KU

Comment: CERTIFICATION: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Cancer-associated CEA see Carcinoembryonic Antigen (CEA), human Page 186
Cancer-associated PSA see Prostate specific Antigen (PSA), human Page 671
Capryl alcohol see 1-Decanol for synthesis Page 261

CAPS

3-(Cyclohexylamino)-1-propanesulfonic
acid

C₉H₁₉NO₃S
M = 221.32 g/mol
CAS-No.: 1135-40-6
HS-No.: 29213099
EC-No.: 214-492-1

Storage: RT
LGK: 10 - 13

Useful pH range pH 9.7 - 11.1
pK_a (25°C) 10.4

CAPS Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.0005 %

Loss on drying max. 5 %
pH (1 %; H₂O) 4.7 - 6.0 (20°C)

Order-No.
A3997,0100 100 g
A3997,0250 250 g

CAPS Buffer grade

B

Specification:

Assay (titr., anhydr. subst.)	. min. 99 %	A (1 cm/0.1 M in H ₂ O)	
pH (1 %; H ₂ O; 20°C)	 4.9 - 6.0	260 nm	 max. 0.04
Loss on drying	 max. 5 %	280 nm	 max. 0.02

Order-No.	Quantity
A1063,0100	100 g
A1063,0250	250 g
A1063,0500	500 g

Literature: (1) Ellis, K.J. & Morrison, J.F. (1982) *Methods Enzymol.* **87**, 405-426

(2) Ozols, J. (1990) *Methods Enzymol.* **182**, 587-601

(3) Matsudaira, P. (1990) *Methods Enzymol.* **182**, 602-613

(4) Picken, R.N. et al. (1995) *J. Clin. Microbiol.* **33**, 2304-2315

(5) Subramaniam, V.N. et al. (1995) *J. Cell Science* **108**, 2405-2414

(6) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 21.2.5 - 21.2.7 (Suppl. 45) Greene Publishing & Wiley-Interscience, New York.

Buffers of constant ionic strength for studying pH-dependent processes.

Amino acid-Analyse.

Limited N-terminal sequence analysis.

Genotypical and phenotypical characterization of *Borrelia burgdorferi*.

Identification of a new 28 kDa integral membrane protein in the *cis*-Golgi.

Comment: CAPS is an alkaline buffer (pH 10 - 11, concentration 10 - 50 mM, pH adjustment by NaOH) for protein transfer after SDS polyacrylamide gel electrophoresis on nitrocellulose filters. Reference 1 describes a mathematical method to select buffers for pH-depending processes.

CAPS sodium salt Buffer grade

B

3-(Cyclohexylamino)-1-propanesulfonic acid sodium salt

C₉H₁₉NNaO₃S
M = 243.30 g/mol
CAS-No.: 105140-23-6
HS-No.: 29213099

Storage: RT
LGK: 10 - 13

Useful pH range pH 9.7 - 11.1
pK_a (25°C) 10.4

Specification:

Assay (titr., anhydr. subst.)	. min. 98 %	A (1 cm/0.1 M in H ₂ O)	
Loss on drying	 max. 10 %	260 nm	 max. 0.06
		280 nm	 max. 0.05

Order-No.	Quantity
A1136,0025	25 g
A1136,0100	100 g
A1136,0250	250 g

CAPSO Buffer grade

B

3-(Cyclohexylamino)-2-hydroxy-1-propane sulfonic acid

C₉H₁₉NO₃S
M = 237.32 g/mol
CAS-No.: 73463-39-5
HS-No.: 29221985

Storage: RT
LGK: 10 - 13

Melting point 270°C
Useful pH range pH 8.9 - 10.3
pK_a (25°C) 9.6

Specification:

Assay (titr.)	 min. 98 %	A (1 cm/0.1 M in H ₂ O)	
pH (1 %; H ₂ O; 20°C)	 5.5 - 6.1	260 nm	 max. 0.04
Loss on drying	 max. 1 %	280 nm	 max. 0.03

Order-No.	Quantity
A1064,0025	25 g
A1064,0100	100 g

Literature: (1) Szewczyk, B. & Kozloff, L.M. (1985) *Anal. Biochem.* **150**, 403-407

A method for the efficient blotting of strongly basic proteins from SDS-polyacrylamide gels to nitrocellulose.

Comment: The most common buffer for the blotting of proteins to nitrocellulose is the Tris-Glycine buffer (pH 8.3). The transfer of strongly basic proteins is very poor (~20 %). The use of more alkaline transfer buffers (e.g. 25 mM CAPSO, pH 10.0 with 20 % Ethanol or 25 mM AMPSO, pH 9.5) allows for the almost complete transfer of strongly basic proteins from gels to nitrocellulose without lowering the transfer efficiency for other proteins.

Carbamide see Urea (Pellets) Page 850

Carbenicillin disodium salt BioChemica

B

α-Carboxybenzylpenicillin

C₁₇H₁₆N₂Na₂O₆S
M = 422.37 g/mol
CAS-No.: 4800-94-6
HS-No.: 29419000
EC-No.: 225-360-8

Storage: RT
LGK: 10 - 13
Disposal: 3

hygroscopic
Danger
H334-H317
P280-P330-P301+P310-P302+P352



Specification:

Activity (calc. on dried subst.)	Loss on drying	 max. 5 %
..... min. 770 µg/mg		
Heavy metals (as Pb)	 max. 0.001 %	
pH (1 %; H ₂ O; 20°C)	 6.0 - 7.5	

Order-No.	Quantity
A1491,0001	1 g
A1491,0005	5 g
A1491,0010	10 g

Comment: Carbenicillin is chemically similar to ampicillin. It is active against gram negative organism. Carbenicillin is readily water-soluble (strongly hygroscopic!) and labile against acids. Even the crystalline form of carbenicillin will be decarboxylated during long storage. Aqueous solutions are stable at room temperature for several hours and at +4°C up to 5 days. Prepare a stock solution with a concentration of 50 mg/ml in water and filter sterilize. Store the stock solution at -20°C. The working concentration varies from 20 - 100 µg/ml.

Carbobenzoxy-valinyl-phenylalaninal see Calpain Inhibitor III Page 183

Carbol fuchsin - Solution see Ziehl-Neelsen - Solution Page 875

Carbolic acid see Phenol liquid water-saturated Page 613

Carbionic acid propylene glycol ester see Propylene carbonate pure Page 670

Carbonyldiamide see Urea (Pellets) Page 850

α-Carboxybenzylpenicillin see Carbenicillin disodium salt BioChemica Page 185

Carboxylic acid C₁ see Formic acid Page 359

(Carboxymethyl)trimethylammonium chloride see Betaine hydrochloride pure Page 137

2-(1E,3E,5E)-5-(3-(5-Carboxypentyl)-1,1-dimethyl-1H-benzo[e]indol-2(3H)-ylidene)penta-1,3-dienyl-1,1-dimethyl-1H-benzo[e]indolium-6-sulfonate see Colorada 600 - 699 nm (blue spectrum) Page 225

2-(1E,3E,5E)-5-(3-(5-Carboxypentyl)-1,1-dimethyl-1H-benzo[e]indol-2(3H)-ylidene)penta-1,3-dienyl-1,1-dimethyl-1H-benzo[e]indolium-6-sulfonate potassium salt see Colorada 600 - 699 nm (blue spectrum) Page 225

2-(1E,3E,5E)-5-(1-(5-Carboxypentyl)-3,3-dimethyl-indolin-2-ylidene)penta-1,3-dienyl-1-ethyl-3,3-dimethyl-3H-indolium-5-sulfonate see Colorada 600 - 699 nm (blue spectrum) Page 225

2-[(1E,3E)-3-(1-(5-Carboxypentyl)-3-dimethylindolin-2-ylidene)prop-1-enyl]-1-ethyl-3,3-dimethyl-3H-indolium-5-sulfonate see Colorado 550 - 599 nm (purple spectrum) Page 231

Carcinoembryonic Antigen (CEA), human

B

Cancer-associated CEA

supplied liquid in 100 mM PBS, pH 7.3, 2
% methylmannoside, 0.02 % sodium
azide

from human liver metastasis of colon
adenocarcinoma

Specification:

Assay (SDS-PAGE) min. 98 %
Concentration min. 1 mg/ml

HS-No.: 38220000

Storage: -20°C

Avoid repeated changes in the solu-
tion temperature!

Order-No.	Quantity
A6940,0010	10 µg
A6940,0100	100 µg

Comment: **CERTIFICATION:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

L-Carnitine BioChemica

B

Vitamin B₁₁ (R)-3-Hydroxy-4-
trimethylammonibutyrate

C₇H₁₅NO₃
M = 161.20 g/mol
CAS-No.: 541-15-1
HS-No.: 29239000
EC-No.: 208-768-0

Storage: 2-8°C

LGK: 10 - 13

Disposal: 3

hygroscopic

Melting point 198°C

Origin synthetic

Specification:

Assay (titr.) min. 99 %
α20°C/D: 10 %; H₂O -30° - -32°
Loss on drying max. 0.1 %
Solubility (10 %; H₂O) clear, colorless

Order-No.	Quantity
A2141,0010	10 g
A2141,0025	25 g
A2141,0100	100 g

β,ε-Carotene-3,3'-diol see Lutein pure Page 498
ψ,ψ-Carotene see Lycopin HPLC grade Page 498

Carrez - Solutions

HS-No.: 38220000

Storage: RT

Carrez - Solution I for determination of sugar and starch

C

Composition:

K₄Fe(CN)₆ · 3H₂O 106 g/L

Order-No.	Quantity
A1560,0500	500 ml
A1560,1000	1 L
A1560,10006	6 x 1 L
A1560,5000	5 L

Carrez - Solution II for determination of sugar and starch

C

Warning

H315-H319

P280-P262-P305+P351+P338



Composition:

Acetic acid 100 % 30 ml/L
Zinc acetate · 2H₂O 219 g/L

Order-No.	Quantity
A1508,0500	500 ml
A1508,1000	1 L
A1508,10006	6 x 1 L
A1508,5000	5 L

Carrier-Ampholyte see Ampholyte Page 105

Stainless Steel - Cartridge (AppliQUA) with Mixed-Bed Resin MBH 100

C

Cartridge for Mixed-Bed Resins, Ion-
exchange cartridge (Stainless Steel)

HS-No.: 73102990

Storage: RT

◆ Pressure-proofed mixed bed cartridge for:

- Water preparation for laboratory dish washers
- Desalination before reverse osmosis
- Supply of laboratories with demineralized water

◆ directly connectable to the water supply with enclosed hoses

◆ optimized utilization of the exchange capacity due to uniform water flow in the system

Specification:

Diameter 23 cm
Exchange capacity 2000 L (at 10° dH)
Flow rate max. 500 L/h

Height 55 cm
Material stainless steel
V4A

Pressure-proofed
..... ≤ 8 bar
Volume 20 L

Order-No.	Quantity
A3285,9020	20 L

Stainless Steel - Cartridge (AppliQUA) without Mixed-Bed Resin MBH 100

C

HS-No.: 73102990

Storage: RT

◆ Pressure-proofed mixed bed cartridge for:

- Water preparation for laboratory dish washers
- Desalination before reverse osmosis
- Supply of laboratories with demineralized water

◆ directly connectable to the water supply with enclosed hoses

◆ optimized utilization of the exchange capacity due to uniform water flow in the system

Specification:

Diameter 23 cm

Pressure-proofed ≤ 8 bar

Height 55 cm

Volume 20 L

Material stainless steel V4A

Order-No.

A7535,9020N

Quantity

20 L

Cartridge for Mixed-Bed Resins see Stainless Steel - Cartridge (AppliQUA) with Mixed-Bed Resin MBH 100 Page 186

Cascarin see Frangulin (A : B approx. 1 : 4) Page 363

CaSO₄ · 2H₂O see Calcium sulfate dihydrate Page 183

CASO Agar see Tryptone Soya Agar Page 844

CASO Broth see Tryptone Soya Broth Page 844

Cassinic acid see Rhein Page 686

Castanospermine BioChemica

B

from seeds of *Castanospermum australe*

C₈H₁₅NO₄

Storage: 2-8°C

M = 189.20 g/mol

LGK: 10 - 13

Melting point 215 - 216°C

CAS-No.: 79831-76-8

Disposal: 3

HS-No.: 29420000

Specification:

Assay min. 99 %

Solubility (2 %; 1 N HCl) ... clear, slightly yellowish

Order-No.

A2267,0010

Quantity

10 mg

A2267,0025

25 mg

Literature: (1) Hohenschutz, L.D. *et al.* (1981) *Phytochemistry* **20**, 811-814

(2) Saul, R. *et al.* (1983) *Arch. Biochem. Biophys.* **221**, 593-597

(3) Pan, Y.T. *et al.* (1984) *Biochemistry* **22**, 3975-3984

(4) Bartlett, M.R. *et al.* (1994) *Immunol. Cell Biol.* **72**, 367-374

(5) Ahmed, S.P. *et al.* (1995) *Biochem. Biophys. Res. Com.* **208**, 267-273

(6) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 17.10.7 (Suppl. 22) Greene Publishing & Wiley-Interscience, New York.

Castanospermine, a 1,6,7,8-tetrahydroxy-octahydroindolizine alkaloid from seeds of *Castanospermum australe*.

Castanospermine, a tetrahydroxylated alkaloid that inhibits β-Glucosidase and β-Glucocerebrosidase.

Castanospermine inhibits the processing of the oligosaccharide portion of the Influenza viral Hemagglutinin.

Effect of the anti-inflammatory compounds castanospermine, mannose-6-phosphate and fucoidan on allograft rejection and elicited peritoneal exudates.

Antiviral activity and metabolism of the Castanospermine derivative MDL 28,574, in cells infected with Herpes simplex virus type 2.

Comment: Castanospermine is a tetrahydroxylated alkaloid, isolated from seeds of the leguminose *Castanospermum australe*. It reversibly inhibits enzymes (glycosidases), which are involved in the glycosylation of proteins (e. g. β-glucosidase from almond IC₅₀ = 10 µg/ml; lysosomal - and β-glucosidase from fibroblasts and β-glucocerebrosidase from fibroblasts IC₅₀ = 7-10 µg/ml; β-xylosidase from *Aspergillus*; ref 2). α-Glucosidase from yeast will not be inhibited.

According to ref. 6, a stock solution is prepared by dissolving Castanospermine to a final concentration of 400 mM in water. Filter-sterilize (0.22 µm filter). Store at -20°C (stable indefinitely).

Casticin HPLC grade

B

Vitexicarpin

from *Ginkgo biloba*

C₁₅H₁₈O₈

M = 326.30 g/mol

Storage: 2-8°C

CAS-No.: 479-91-4

LGK: 10 - 13

HS-No.: 29420000

Specification:

Assay min. 98 %

Order-No.

A6748,0010

Quantity

10 mg

A6748,0020

20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Catalpol HPLC grade

B

from *Picrorhizae kurroa*

C₁₅H₂₂O₁₀

M = 362.33 g/mol

Storage: 2-8°C

CAS-No.: 2415-24-9

LGK: 10 - 13

HS-No.: 29420000

Specification:

Assay min. 99 %

Order-No.

A3395,0020

Quantity

20 mg

A3395,0050

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

(-)-Catechin HPLC grade

B

3,5,7,3',4'-Pentahydroxyflavane
from *Acacia catechu*

C₁₅H₁₄O₆
M = 290.27 g/mol
CAS-No.: 18829-70-4
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Warning
H315-H335-H319
P305+P351+P338



Specification:

Assay min. 99 %

Order-No.	Quantity
A2055,0010	10 mg
A2055,0010DOC	10 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point, specific rotation. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

(+)-Catechin HPLC grade

B

3,3',4',5,7-Pentahydroxyflavan, (+)-
Catechol
from *Acacia catechu*

C₁₅H₁₄O₆
M = 290.27 g/mol
CAS-No.: 154-23-4
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Warning
H315-H319-H335
P305+P351+P338-P313-P280



Specification:

Assay min. 99 %

Order-No.	Quantity
A4325,0020	20 mg
A4325,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

(+)-Catechol see (+)-Catechin HPLC grade Page 188
Catenulin see Paromomycin sulfate *BioChemica* Page 592
Cathepsin B,L,S Inhibitor see Z-Gly-Phe-NHO-Bz Page 874

Cathepsin G, human

B

[EC 3.4.21.20]
lyophilized from 50 mM sodium acetate,
pH 5.5. 800 mM NaCl
from human neutrophil

CAS-No.: 107200-92-0
HS-No.: 35079090

Storage: 2-8°C

Specification:

Activity (37°C) min. 1 U/ml
Protein min. 0.25 mg/ml

Order-No.	Quantity
A6942,0100	100 µg
A6942,0001	1 mg

Comment: **Unit definition:** One unit will hydrolyze one micromole of Succinyl-alanine-alanine-proline-phenylalanine-p-nitroanilide per minute at 37°C and pH 7.5.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Cathepsin G-biotinylated, human

B

lyophilized from 50 mM sodium acetate, pH
5.5. 800 mM NaCl
from human neutrophil

HS-No.: 38220000

Storage: 2-8°C

Specification:

Activity (37°C) min. 1 U/ml
Protein approx. 0.1 mg/ml

Order-No.	Quantity
A6950,0100	100 µg
A6950,0001	1 mg

Comment: **Unit definition:** One unit will hydrolyze one micromole of Succinyl-alanine-alanine-proline-phenylalanine-p-nitroanilide per minute at 37°C and pH 7.5.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Cathepsin Inhibitor I



B

Z-FG-NHO-Bz, Z-Phe-Gly-NHO-Bz

C₂₆H₂₅N₃O₆
M = 475.5 g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8642,0001	1 mg
A8642,0005	5 mg

Cathepsin Inhibitor II



B

Z-Phe-Gly-NHO-Bz-p-CH₃, Z-FG-NHO-Bz-ME

C₂₇H₂₇N₃O₆
M = 489.5 g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8656,0001	1 mg
A8656,0005	5 mg

Cathepsin Inhibitor III



B

Z-Phe-Gly-NHO-Bz-p-OCH₃, Z-FG-NHO-Bz-OME

C₂₇H₂₇N₃O₇
M = 505.5 g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8691,0001	1 µg
A8691,0005	5 mg

Cathepsin/Subtilisin Inhibitor



B

Boc-VF-NHO-Bz-p-Cl, Boc-Val-Phe-NHO-Bz-p-Cl

C₂₆H₃₂N₃O₆Cl
M = 518.0 g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8744,0001	1 mg
A8744,0005	5 mg

Caustic soda see Sodium hydroxide pearls Page 737

CCL 3 see rHu MIP-1α Page 545
CCL3 see rHu MIP-1α Page 545
CCL 4 see rHu MIP-1β Page 545
CCL5 see rHu RANTES Page 683
CCL7 see rHu MCP-3 Page 521
CCL 8 see rHu MCP-2 Page 521
CCL13 see rHu MCP-4 Page 521
CCL 18 see rHu MIP-4 Page 546
CCL 19 see rHu MIP-3β Page 546
CCL 20 see rHu MIP-3α Page 546
CCL20 see rHu MIP-3α Page 546
CD154 see rHu CD40-L Page 190
CD40L see rHu CD40-L Page 190

rHu CD40-L



B

recombinant Human CD40-Ligand,
CD154

M = 16.31 kDa
HS-No.: 29371900

Storage: -20°C

lyophilized from a sterile concentrated
solution (1 mg/ml) with 10 mM sodium
phosphat, pH 7.5
from *E. coli*

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8296,0010	10 µg
A8296,0050	50 µg

Comment: CD40L or CD154 is a membrane glycoprotein and differentiation antigen expressed on the surface of T-cells. The CD40 ligand stimulates B-cell proliferation and secretion of all immunoglobulin isotypes in the presence of cytokines. CD40 ligand has been shown to induce cytokine production and tumoricidal activity in peripheral blood monocytes. It also costimulates proliferation of activated T-cells and this is accompanied by the production of IFN-γ, TNF-α, and IL2. Recombinant Human CD40L produced in *E. coli* is a non-glycosylated, Polypeptide chain containing 149 amino acids and having a molecular mass of 16.31 kDa.

rM CD40-L



B

recombinant Mouse CD40-Ligand,
CD154, CD40L
lyophilized from a sterile concentrated
solution (1 mg/ml) with 10 mM sodium
phosphate, pH 7.5
from *E. coli*

M = 16.4 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8212,0005	5 µg
A8212,0025	25 µg
A8212,0100	100 µg

Comment: CD40L or CD154 is a membrane glycoprotein and differentiation antigen expressed on the surface of T-cells. The CD40-Ligand stimulates B-cell proliferation and secretion of all immunoglobulin isotypes in the presence of cytokines. CD40-Ligand has been shown to induce cytokine production and tumoricidal activity in peripheral blood monocytes. It also costimulates proliferation of activated T-cells and this is accompanied by the production of IFN-γ, TNF-α, and IL2. Recombinant Mouse CD40-L is a non-glycosylated, polypeptide chain containing 149 amino acids.

recombinant Human CD40-Ligand see rHu CD40-L Page 189
recombinant Mouse CD40-Ligand see rM CD40-L Page 190
CDP-choline see Citicoline sodium salt *BioChemica* Page 213
CDP-coline see Citicoline sodium salt *BioChemica* Page 213
CDP trisodium salt dihydrate see Cytidine 5'-diphosphoric acid trisodium salt dihydrate *BioChemica* Page 256
C16E20 see Brij® 58 *BioChemica* Page 157

Cefotaxime sodium salt *BioChemica*

B

Claforan

C₁₆H₁₆N₆O₇S₂Na
M = 477.4 g/mol
CAS-No.: 64485-93-4
HS-No.: 29341000
EC-No.: 264-915-9

Storage: 2-8°C
LGK: 10 - 13

WGK: 1

Specification:

Assay (TLC) min. 98 %
Appearance light yellow powder
Solubility (5 %; H₂O) clear colorless to

yellow
Water (K.F) approx. 1 %

Order-No.	Quantity
A4802,0001	1 g
A4802,0005	5 g

Cell Proliferation Kit XTT



B

Proliferation Test Kit for Cells

HS-No.: 38220000

Storage: -20°C
protected from light
Avoid repeated changes in the reac-
tion mix temperature
Shipment: dry ice

- ◆ Kit for quantitating cell proliferation and viability without using radioactive isotopes
- ◆ One step process with results within 2 - 5 hours.
- ◆ Dye absorbance is proportional to the number of cells in each well.
- ◆ No requirement for additional reagents and/or the cell washing procedures.
- ◆ Kit components
- ◆ XTT reagent
- Activation reagent (PMS)

Order-No.	Quantity
A8088,1000	1000 Tests

AC-Cell Xeno-free Medium Immunology grade



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Cell Culture complies
Osmolality 287 - 317 mOsm/kg
Sterility complies

Order-No.	Quantity
A8352,0100	100 ml
A8352,0500	500 ml

Comment: AC-Cell Xeno-free Medium for immunology is a serum-free medium developed and optimized specifically for culturing peripheral blood mononuclear cells (lymphocytes and monocytes). It combines several advantages: It is Xeno-free (xenogenic = originating outside the organism or from a foreign substance introduced into the organism) reducing the risk of immunogenicity; it is chemically defined and contains no added cytokines.

Currently, mononuclear cells are grown in standard media and supplemented with either human serum (A, AB) or fetal bovine serum. To eliminate the drawbacks involved in serum supplementation, AppliChem provides this serum-free alternative. The advantages of animal component-free media in culturing mononuclear cells are (i) the elimination of non-specific growth factors and/or inhibitors, which interfere with cell activation, the (ii) elimination of potential introduction of pathogens, (iii) allowing a reliable evaluation of the antigenic reaction (e.g. quantity of the lymphokines) and (iii) a lot-to-lot consistency.

D(+)-Cellobiose BioChemica

B

Melting point 237 - 239°C

 $C_{12}H_{22}NO_{11}$
 $M = 342.30 \text{ g/mol}$
CAS-No.: 528-50-7
HS-No.: 29400000
EC-No.: 208-436-5

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

Assay min. 99 %
 α 20°C/D; 4 %, H_2O +34° - +35°
Heavy metals (as Pb) max. 0.0005 %
Sulfated ash max. 0.05 %

Order-No.	Quantity
A3196,0010	10 g
A3196,0050	50 g
A3196,0100	100 g

Cephaeline dihydrobromide HPLC grade



B

Desmethylemetin dihydrobromide
from *Psychotria ipecacuanha*
 $C_{28}H_{36}N_2O_4 \cdot 2HBr$
 $M = 628.45 \text{ g/mol}$
CAS-No.: 6014-81-9
HS-No.: 29420000

Storage: 2-8°C

Class / PG: 6.1/I
UN1544
Danger
H311-H331-H301
P262-P260-P309+P311

Specification:

Assay min. 97 %

Order-No.	Quantity
A8670,0020	20 mg
A8670,0050	50 mg

Cer(III) chloride hydrate pure

C

 $CeCl_3 \cdot xH_2O$
 $M = 246.48 \text{ g/mol}$
CAS-No.: 18618-55-8
HS-No.: 28461000
EC-No.: 232-227-8

Storage: RT

Warning
H315-H319-H335
P305+P351+P338-P261

Specification:

Assay (titr.) min. 99.3 %
Sulfate max. 0.01 %
Cu max. 0.005 %
Fe max. 0.005 %

Ni max. 0.005 %
Zn max. 0.005 %

Order-No.	Quantity
A4268,0100	100 g
A4268,0500	500 g
A4268,1000	1 kg

Cer(IV) sulfate tetrahydrate

 $Ce(SO_4)_2 \cdot 4H_2O$
 $CeO_8S_2 \cdot 4H_2O$
 $M = 404.30 \text{ g/mol}$
CAS-No.: 10294-42-5
HS-No.: 28461000
EC-No.: 237-029-5

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 3*
Warning
H315-H335-H319
P305+P351+P338-P261

Solubility (H_2O) 38 g/L (50°C)

Cer(IV) sulfate tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 98 %
 H_2SO_4 -insoluble matter max. 0.1 %
Chloride max. 0.001 %
Phosphate max. 0.01 %

Fe max. 0.005 %
Pb max. 0.005 %

Order-No.	Quantity
A3532,0025	25 g
A3532,0100	100 g
A3532,0250	250 g

Cer(IV) sulfate tetrahydrate pure

C

Specification:

Assay (titr.) min. 97 %
Heavy metals (as Pb) max. 0.01 %
Chloride max. 0.003 %

Order-No.	Quantity
A3540,0100	100 g
A3540,0250	250 g
A3540,0500	500 g

Cer(IV) sulfate - Standard volumetric Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1
Warning
H315-H319
P305+P351+P338


Cer(IV) sulfate - Standard volumetric solution (0.1 M) Reagent Ph. Eur.

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A5326,0250	250 ml
A5326,0500	500 ml
A5326,1000	1 L
A5326,10006	6 x 1 L

Cer(IV) sulfate - Standard volumetric Solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3616,0500	500 ml
A3616,1000	1 L
A3616,10006	6 x 1 L
A3616,2500	2.5 L
A3616,25004	4 x 2,5 L

Cerulenin BioChemica

B

2,3-Epoxy-4-oxo-7,10-dodecadienoylamide, *Helicocerin* from *Cephalosporium caerulens*

C₁₂H₁₇NO₃
M = 223.27 g/mol
CAS-No.: 17397-89-6
HS-No.: 29419000
EC-No.: 241-424-8

Storage: -20°C
protected from light

WGK: 1
Warning
H302
P280



Melting point 86 - 94°C

Specification:

Assay (TLC) min. 98 %

Solubility (5 mg/ml Dichloromethane)

..... clear, colorless

Order-No.	Quantity
A7638,0005	5 mg
A7638,0010	10 mg

Literature: (1) Omura, S. (1976) *Bacteriol. Rev.* **40**, 681-697

(2) Pizer, E.S. *et al.* (1996) *Cancer Res.* **56**, 745-751

(3) Child, C.J. & Shoolingin-Jordan, P.M. (1998) *Biochem. J.* **330**, 933-937

(4) Parrish, N.M. *et al.* (1999) *J. Antimicrobial Chemother.* **43**, 219-226

(5) Heiligtag, S.J. *et al.* (2002) *Cell Death Differ.* **9**, 1017-1025

The Antibiotic Cerulenin, a Novel Tool for Biochemistry as an Inhibitor of Fatty Acid Synthesis.

Fatty Acid Synthase (FAS): A Target for Cytotoxic Antimetabolites in HL60 Promyelocytic Leukemia Cells.

Inactivation of the polyketide synthase by the fungal mycotoxin cerulenin.

Antimycobacterial activity of cerulenin and its effects on lipid biosynthesis.

Key role of mitochondria in cerulenin-mediated apoptosis.

Comment: Cerulenin is an antifungal antibiotic isolated from *Cephalosporium caerulens* that inhibits sterol and fatty acid biosynthesis in a variety of prokaryotic and eukaryotic cells, including several species of mycobacteria (1,4). One target in fatty acid synthesis is β -ketoacyl synthase activity of Fatty Acid Synthase (FAS), which is inhibited in a noncompetitive manner. The amount of Cerulenin bound to the enzyme is proportional to its inhibitory effect. It is apparent that it binds in equimolar ratio to the enzyme (1). Other targets are HMG-CoA synthetase in sterol synthesis and "polyketide" synthesis (e.g. leucomycin, tetracycline, cycloheximide; ref. 1,3). Since fatty acid synthase expression is upregulated in many human cancers, cerulenin is cytotoxic to cell lines dependent on endogenous fatty acid synthesis for growth (2). In addition it is an effective inducer of apoptosis in different wild-type p53 and mutant p53 tumor cell lines (5).

Stability and Solubility: Cerulenin is soluble in DMSO, ethanol, acetone and most common solvents. It is slightly soluble in water. Cerulenin is stable in neutral and acidic solutions, the crystalline substance for more than 2 years. A stock solution can be prepared at 5 mg/ml in DMSO (2,5). The working concentration varies depending on the assay system. Typically, 2.5 to 15 μ g/ml were employed.

Cesium chloride

CsCl

ClCs
M = 168.36 g/mol
CAS-No.: 7647-17-8
HS-No.: 28273985
EC-No.: 231-600-2

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Boiling point 1300°C

Density (d 20°C/4°C) .. 3.983

Melting point 646°C

Solubility (20°C) 1800 g/L (H₂O)

Cesium chloride 99.999 % Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable

Assay min. 99.999 %

Al max. 0.0001 %

Ba max. 0.0001 %

Ca max. 0.0001 %

Cr	 max. 0.0001 %
Fe	 max. 0.0001 %
K	 max. 0.0005 %
Li	 max. 0.0001 %
Na	 max. 0.0005 %

A (1 cm/50 % in water HPLC grade)
260 nm max. 0.02
280 nm max. 0.02

Order-No.	Quantity
A1098,0050	50 g
A1098,0100	100 g
A1098,0500	500 g
A1098,1000	1 kg

Cesium chloride 99.9 % BioChemica

B

Specification:

Assay min. 99.9 %

Al max. 0.0005 %

Ba max. 0.001 %

Ca max. 0.0005 %

Cr max. 0.0005 %

Fe	 max. 0.0005 %
K	 max. 0.002 %
Li	 max. 0.0005 %
Na	 max. 0.005 %

Order-No.	Quantity
A1126,0100	100 g
A1126,0250	250 g
A1126,0500	500 g
A1126,1000	1 kg

Literature: (1) Miller, H. (1987) *Methods Enzymol.* **152**, 145-179

(2) Dorin, M. & Bornecque, C.A. (1995) *BioTechniques* **18**, 90-92

(3) Hildeman, D.A. & Muller, D. (1997) *BioTechniques* **22**, 878-879

Practical aspects on the preparation of phage and plasmid DNA.

Rapid separation of plasmid DNA by discontinuous gradient centrifugation.

Improved plasmid DNA yields by removal of CsCl during ethanol precipitation.

Comment: In reference 1, the isopycnic cesium chloride (CsCl) gradient centrifugation is described, while reference 2 gives a protocol for the isolation of plasmid DNA with the discontinuous gradient centrifugation in a preparative ultracentrifuge in only 20 minutes at 90,000 rpm. Unlike reference 1 describes, the quantity of CsCl for the purification of 'normal' plasmid DNA can be reduced to 0.94 g/ml CsCl for the first gradient and to 0.85 g/ml CsCl for the second gradient. For the first gradient, crystalline CsCl is added to the DNA solution and for the second gradient a solution of 0.85 g/ml CsCl is used. This solution has to be filtered. Another improvement is recommended for the removal of ethidium bromide: Extract the DNA/ CsCl/ethidium bromide containing solution with NaCl-saturated isopropanol, instead of the CsCl-saturated isopropanol for saving money! During extraction, an aqueous and an organic phase (upper phase containing the isopropanol) is formed. If non-salt-saturated isopropanol is used, CsCl will precipitate from the DNA-containing solution. The inclusion of another DNA precipitation step of the supernatant from the first precipitation, the yield of plasmid DNA could be increased several fold (3).

Cesium chloride p. A.

C

Specification:

Assay (titr.)	min. 99.5 %
Sulfate	max. 0.002 %
Al	max. 0.0005 %
Cu	max. 0.0005 %

Fe	max. 0.0005 %
K	max. 0.002 %
Li	max. 0.0005 %
Mg	max. 0.0005 %

Na	max. 0.002 %
Pb	max. 0.0005 %
Rb	max. 0.01 %
Zn	max. 0.0005 %

Order-No.	Quantity
A4473,0100	100 g
A4473,0250	250 g
A4473,0500	500 g

Cesium chloride - Aluminium nitrate - Buffer solution for flame spectroscopy

C

Density (d 20°C/4°C) .. 1.14

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Specification:

pH (H₂O) approx. 2.5 (20°C)

Order-No.	Quantity
A4487,0250	250 ml
A4487,0500	500 ml
A4487,1000	1 L
A4487,10006	6 x 1 L

Ce(SO₄)₂ · 4H₂O see Cer(IV) sulfate tetrahydrate Page 191
Cetrimide see Cetyltrimethylammonium bromide Page 194

Cetrimide Agar Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar	13.0 g/L
Cetrimide	0.3 g/L
Magnesium chloride	1.4 g/L
Peptones	20.3 g/L
Potassium sulfate	10.0 g/L

Specification:

pH before autoclaving .. approx. 7.2 (20°C)

Order-No.	Quantity
A5669,0500	500 g
A5669,5000	5 kg

Literature: (1) Lowbry & Collins (1955) *J. Clin. Pathol.* 8, 47

Comment: This selective medium is suitable for the isolation and identification of *Pseudomonas aeruginosa*.

Directions: Suspend 45 g in 1 L of distilled water and add 10 ml of glycerol. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Cetrimonium bromide see Cetyltrimethylammonium bromide Page 194

Cetyl alcohol for synthesis

C

1-Hexadecanol

C₁₆H₃₄O
M = 242.45 g/mol
CAS-No.: 36653-82-4
HS-No.: 29051700
EC-No.: 253-149-0

Storage: <30°C
LGK: 10 - 13
Disposal: 1

WGK: nwg

Boiling point approx. 355°C
Density (d 20°C/4°C) .. 0.82
Melting point 49°C

Specification:

Assay (HPLC) min. 95 %

Order-No.	Quantity
A3595,0250	250 g
A3595,0500	500 g
A3595,1000	1 kg
A3595,10006	6 x 1 kg

Cetylpyridinium bromide BioChemica

B

N-Hexadecylpyridinium bromide

C₂₁H₃₆BrN
M = 384.45 g/mol
CAS-No.: 140-72-7
HS-No.: 29333999
EC-No.: 205-428-3

Storage: RT
LGK: 6.1 A
Disposal: 3

Class / PG: 6.1/1
UN2811
WGK: 3
Danger
H319-H330-H335-H315-H302
P305+P351+P338-P284-P260



Specification:

Assay (titr.) min. 97 %

Order-No.	Quantity
A3782,0100	100 g
A3782,0250	250 g

Cetylpyridinium chloride monohydrate *BioChemica*

B

Hexadecylpyridinium chloride
monohydrate

$C_{21}H_{38}ClN \cdot H_2O$
 $M = 358.01 \text{ g/mol}$
CAS-No.: 6004-24-6
HS-No.: 29333999
EC-No.: 204-593-9

Storage: RT
LGK: 6.1 A
Disposal: 3

Class / PG: 6.1/1
UN2811
WGK: 3
Danger
H330-H335-H301-H315-H319-H410
P302+P352-P304+P340-
P305+P351+P338-P273



Aggregation No. (N_a) .95
CMC (25°C) $1.2 \times 10^{-4} \text{ mol/L}$
Classification: cationic detergent
Melting point 80 - 84°C
Solubility (20°C) 80 g/L (H_2O)

Specification:

Assay (titr.) min. 96 %
Water (K.F.) 4.5 - 5.5 %

Order-No. Quantity
A0742,0100 100 g
A0742,0500 500 g

Literature: (1) Kresse, H. *et al.* (1975) *Hoppe-Seyler's Z. Physiol. Chem.* **356**, 929-941
(2) Kindler, A. *et al.* (1977) *Hoppe-Seyler's Z. Physiol. Chem.* **358**, 1431-1438

Metabolism of sulfated glycosaminoglycans in cultivated bovine arterial cells.
Characterization of glycosaminoglycans stored in Mucopolysaccharidosis III A: Evidence
for a generally occurring degradation of Heparan sulfate by Endoglycosidases.

Comment: For the precipitation of glycosaminoglycans, solid cetylpyridinium chloride was added to the samples to a final concentration of 1.0 %. Precipitated products have been eluted by successive addition of increasing concentrations of $MgCl_2$ (0.125 M - 0.75 M).

Cetyltrimethylammonium bromide

Cetrimide, CTAB,
Palmityltrimethylammonium bromide, N-
Cetyl-N,N,N-trimethylammonium
bromide, Cetrimonium bromide,
Hexadecyltrimethylammonium bromide

$C_{19}H_{42}BrN$
 $M = 364.46 \text{ g/mol}$
CAS-No.: 57-09-0
HS-No.: 29239000
EC-No.: 200-311-3

Storage: RT
LGK: 10 - 13
Disposal: 3

Class / PG: 9/III
UN3077
WGK: 3
Warning
H410-H319-H335-H302-H315
P305+P351+P338-P304+P340-
P302+P352-P273



Aggregation No. (N_a) .61
CMC (25°C) $9.2 \times 10^{-4} \text{ mol/L}$
Classification: cationic detergent
Melting point 250°C (dec.)
Solubility (20°C) 3 g/L (H_2O)

Cetyltrimethylammonium bromide Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Water (K.F.) max. 1 %

Order-No. Quantity
A6284,0100 100 g
A6284,0250 250 g
A6284,0500 500 g

Cetyltrimethylammonium bromide *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Water (K.F.) max. 1 %

Order-No. Quantity
A0805,0100 100 g
A0805,0500 500 g

Literature: (1) Eley, M.H. *et al.* (1979) *Anal. Biochem.* **92**, 411-419
(2) Hansen, S.H. *et al.* (1981) *Chromatographia* **13**, 453-460
(3) Murray, M.G. & Thompson, W.F. (1980) *Nucleic Acids Res.* **8**, 4321-4325
(4) Shahjahan, R.M. *et al.* (1995) *BioTechniques* **19**, 332-334
(5) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 2.3.3-2.3.7, 2.4.2 (Suppl. 27) Greene Publishing & Wiley-Interscience, New York.
(6) White, E.J. *et al.* (2008) *Biotechnol. J.* **3**, 1424-1428

CTAB-PAGE: Estimation of protein subunit molecular weights using cationic detergents.
HPLC on dynamically modified silica: II. Modification of various silica packings with CTAB.
Rapid isolation of high molecular weight plant DNA.
Lower incubation temperature increases the yield of genomic DNA from insect tissue.
White, E.J. *et al.* (1999) *Current Protocols in Molecular Biology*. Page 2.3.3-2.3.7, 2.4.2 (Suppl. 27)

Modified CTAB method improves robustness and versatility: The benchmark for plant RNA extraction.

Comment: Cetyltrimethylammonium bromide (CTAB) is a cationic detergent. In polyacrylamide gel electrophoresis it is used for the determination of the molecular weight of proteins, which show an unusual migration behavior in the SDS-PAGE (e. g. strongly charged proteins or subunits of membrane proteins). See reference 1 for details of this method.
Another important application of CTAB is the precipitation of high molecular weight DNA, especially from plant material (genomic DNA; ref. 3, 5). CTAB forms insoluble complexes with the nucleic acids (RNA, too; ref. 6), if the NaCl-concentration is decreased to approx. 0.5 M. The tissue or cells are homogenized in CTAB-containing buffers. The effective concentration is 1 - 2 %. Keep the temperature above 15°C, otherwise CTAB will precipitate. Disturbing phenolic substances, which are very prominent in plant material, will not coprecipitate by this method. Nevertheless, in case that they are still disturbing, they can be removed with polyvinylpyrrolidone (K30, ref. 5; K40, ref. 6). The complexes of nucleic acids and CTAB can be dissolved at high salt concentrations only. The detergent is removed by ethanol precipitation and washing of the precipitate with 80 % ethanol, since it is more soluble in ethanol.

Stability: Solutions of CTAB are stable for several years at room temperature (5).

N-Cetyl-N,N,N-trimethylammonium bromide see Cetyltrimethylammonium bromide Page 194
CGP 41251 see PKC412 *BioChemica* Page 629
 $CH_2(COOH)_2$ see Malonic acid for synthesis Page 510
 CH_3CH_2COOH see Propionic acid for synthesis Page 669
 CH_3COOH - Standard volumetric solution see Acetic acid - Standard volumetric solutions Page 42
 CH_3COOK see Potassium acetate Page 635

CHAPS

Aggregation No. (N_a) . 9 - 10
CMC (25°C) 4.2 - 6.3 mM
Classification: zwitterionic detergent
Melting point 116°C

$C_{32}H_{58}N_2O_7S$
 $M = 614.89$ g/mol
CAS-No.: 75621-03-3
HS-No.: 29242998

Storage: 2-8°C
LGK: 10 - 13

CHAPS Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (from N) min. 99 %
Conductivity (0.1 M) max. 10.0 µS/cm
Pb max. 0.005 %
Water (K.F.) max. 4 %

N approx. 4.5 %
Na max. 0.005 %

A (1 cm/5 % in H_2O)
290 nm max. 0.5
400 nm max. 0.02

Order-No.	Quantity
A4011,0005	5 g
A4011,0010	10 g
A4011,0025	25 g

CHAPS BioChemica

B

3-[(3-Cholamidopropyl)-
dimethylammonio]-1-propanesulfonate

Specification:

Assay (from N) min. 99 %
Conductivity (0.1 M) max. 10.0 µS/cm
Pb max. 0.005 %
Water (K.F.) max. 4 %
N approx. 4.5 %

Na max. 0.005 %

A (1 cm/5 % in H_2O)
290 nm max. 0.5
400 nm max. 0.02

Order-No.	Quantity
A1099,0005	5 g
A1099,0010	10 g
A1099,0025	25 g
A1099,0050	50 g

Literature: (1) Simonds, W.F. et al. (1980) *Proc. Natl. Acad. Sci. USA* **77**, 4623-4627
(2) Hjelmeland, L.M. (1980) *Proc. Natl. Acad. Sci. USA* **77**, 6368-6370

(3) Bitonti, A.J. et al. (1982) *Biochemistry* **21**, 3650-3653

Solubilization of active opiate receptors.

A nondenaturing zwitterionic detergent for membrane biochemistry: Design and synthesis.

Resolution and activity of adenylate cyclase compounds in a zwitterionic cholate derivative.

Comment: The detergent CHAPS is a derivative of cholate. It may be used e. g. at concentrations of 1 - 13 mM (1-3). CHAPS allows the isolation of many proteins in their native state, without losing much of its activity. Protein-protein interactions can be interrupted more efficiently as with Triton® X-100 or sodium cholate. CHAPS interferes with the Lowry protein assay.

CHAPSO BioChemica

B

3-[(3-Cholamidopropyl)-
dimethylammonio]- 2-hydroxy-1-
propanesulfonate

$C_{32}H_{58}N_2O_8S$
 $M = 630.87$ g/mol
CAS-No.: 82473-24-3
HS-No.: 29242998

Storage: 2-8°C
LGK: 10 - 13

CMC (25°C) 8×10^{-3} mol/L
Classification: zwitterionic detergent
Melting point 175°C

Specification:

Assay (from N) min. 98 %
Water (K.F.) max. 6 %

Order-No.	Quantity
A1100,0001	1 g
A1100,0005	5 g
A1100,0010	10 g

Literature: (1) Hjelmeland, L.M. et al. (1983) *Anal. Biochemistry* **130**, 72-82

(2) Womack, M.D. et al. (1983) *Biochim. Biophys. Acta* **733**, 210-215

(3) O'Neill, S.D. & Spanswick, R.M. (1984) *J. Membrane Biol.* **79**, 231-243

Sulfobetaine derivatives of bile acids: Nondenaturing surfactants of membrane biochemistry.

Detergent effects on enzyme activity and solubilization of lipid bilayer membranes.

Solubilization and reconstitution of a vanadate-sensitive H^+ -ATPase from the plasma membrane of *Beta vulgaris*.

Comment: The detergent CHAPSO, like CHAPS and octylglucoside, can be easily separated from proteins by dialysis, because of its high CMC value. Good results gave an aqueous solution of 1 % and a protein concentration of 1.5 mg/ml (3). A stock solution with 15 % CHAPSO (w/v) could be stored frozen or at room temperature (3).

Charcoal, activated granular

C

Raw material: charcoal and mineral coal

C
 $M = 12.01$ g/mol
CAS-No.: 7440-44-0
HS-No.: 38021000
EC-No.: 231-153-3

Storage: RT
LGK: 10 - 13

Particle size approx. 3 mm
Solubility (20°C) insoluble (H_2O)

Specification:

Ash max. 6 %
Loss on drying max. 5 %
Chloride max. 0.5 %
Sulfate max. 0.5 %
Ca max. 0.5 %

Cu max. 0.001 %
Fe max. 0.1 %

Order-No.	Quantity
A0746,0500	500 g
A0746,1000	1 kg
A0746,2500	2.5 kg
A0746,5000	5 kg

Chelerythrine chloride *BioChemica*

B

1,2-Dimethoxy-N-methyl(1,3)benzodioxolo(5,6-c)phenanthridium chloride
from *Chelidonium majus*

$C_{21}H_{18}ClNO_4$
 $M = 383.82$ g/mol
CAS-No.: 3895-92-9
HS-No.: 29399900
EC-No.: 223-444-9

Storage: -20°C

Warning
H315-H335-H332-H319-H312-H302
P280-P305+P351+P338-P262



Melting point 200 - 206°C
Solubility (10 mg/ml DMSO)
..... clear, colorless

Specification:

Assay approx. 97 %
 λ_{max} 226, 283, 319 nm

Order-No.	Quantity
A7814,0001	1 mg
A7814,0005	5 mg

Comment: Chelerythrine chloride is a cell-permeable benzophenanthridine alkaloid. It is a potent and selective Protein kinase C inhibitor. It is soluble in methanol or DMSO.

Chelidonin HPLC grade

B

Stylophorin
from *Chelidonium majus*

$C_{20}H_{19}NO_5$
 $M = 353.37$ g/mol
CAS-No.: 476-32-4
HS-No.: 29420000

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
Danger
H331-H301-H311
P260-P309+P311-P262

**Specification:**

Assay min. 98 %

Order-No.	Quantity
A5281,0020	20 mg
A5281,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.



**Don't
even
think
of
ordering
somewhere
else !**

(joke!)

Cheluminate-HRP PicoDetect

B

Enhanced ChemiLuminescence
Detection Kit

HS-No.: 38220000

Storage: 2-8°C

- for the detection of immobilized nucleic acids (Southern and Northern blot)
- for the detection of immobilized proteins (Western blot)
- sufficient for 1200 cm², 5000 cm² or 10000 cm², respectively

Order-No.	Quantity
A3417,1200	1 Kit
A3417,5000	1 Kit
A3417,10000	1 Kit

Literature: (1) Thorpe, G.H.G. *et al.* (1985) *Clin. Chem.* **31**, 1335-1341
(2) Thorpe, G.H.G. & Kricka, L.J. (1986) *Methods Enzymol.* **133**, 331-353

Phenols as "Enhancer" of the chemiluminescence reaction with horseradish peroxidase.
"Enhanced Chemiluminescent" reactions, catalyzed by horseradish peroxidase.

Comment: The Chemiluminescent Detection Kit is a complete kit with ready-to-use reagents for chemiluminescent detection of immobilized proteins (Western blot) and immobilized nucleic acids (Southern or Northern blot), conjugated with horseradish peroxidase (HRP) directly or indirectly. The use of enhanced chemiluminescence was introduced by Thorpe and Kricka (1, 2). In the presence of hydrogen peroxide (H₂O₂), HRP catalyzes the oxidation of cyclic diacylhydrazides, such as luminol. Immediately following the oxidation, the luminol is in an excited state (intermediate reaction product), which decays to the ground state by emitting light. Strong enhancement of the light emission is produced by enhancers, such as phenolic compounds. Using this method, it is possible to detect membrane immobilized specific antigens, or sequences of nucleic acids, labeled directly with HRP or indirectly with HRP-labeled antibodies/streptavidin.

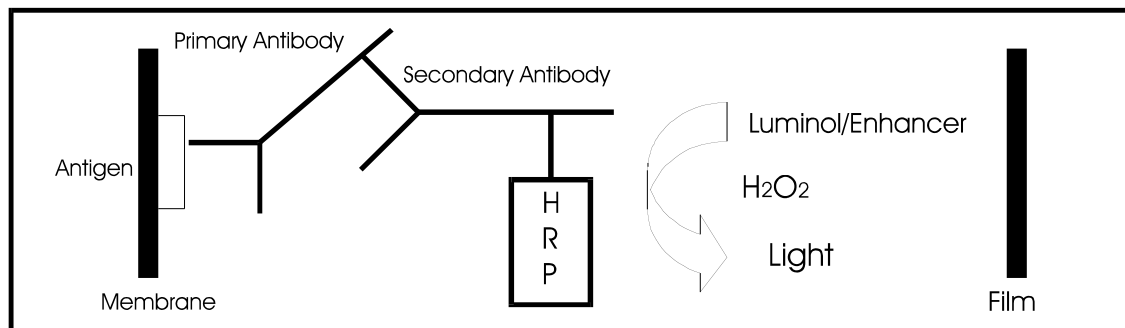
This kit consists of two solutions, each of them in 60 ml pack sizes: Solution A (contains luminol and enhancer) and solution B (stable H₂O₂ solution). For the detection assay, both solutions are mixed in a 1 : 1 ratio and 100 µl/cm² are applied. A detailed protocol is included.

Advantages of using this kit:

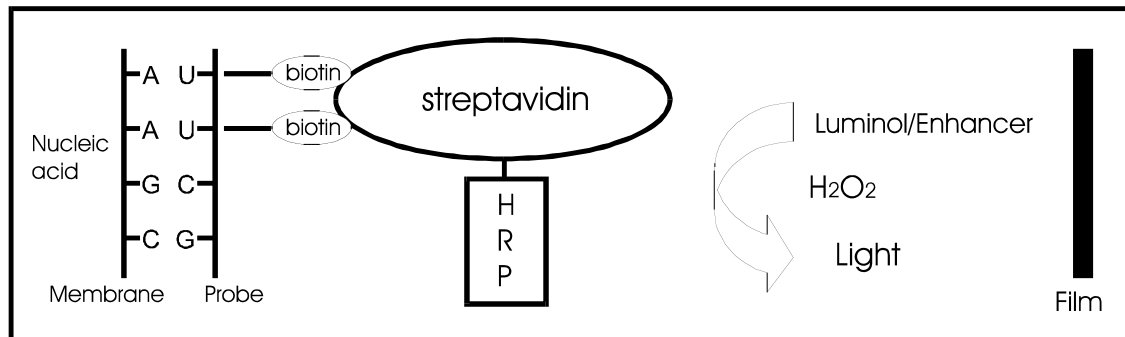
- ◆ High sensitivity non-radioactive detection system (1 pg detectable).
- ◆ Stable hard copy results on film.
- ◆ Only small amounts of antibody required.
- ◆ Detection may be achieved in short exposure times (minutes).
- ◆ High resolution.

Principles of protein detection procedure:

Principles of protein detection procedure:



Principles of nucleic acid detection procedure:



Cheluminate-HRP PicoDetect Extended

B

Enhanced ChemiLuminescence
Detection Kit PicoDetect Extended

HS-No.: 38220000

Storage: 2-8°C

- ◆ Application
 - for the detection of immobilized proteins (Western blot)
 - for the detection of immobilized nucleic acids (Southern and Northern blot)
 - sufficient for 400 cm² and 800 cm² and 4000 cm², respectively
 - preferred detection system: film
- ◆ special advantages of this kit
 - high intensity: the signal is at least 8 times more intense as compared to phenolic enhancer substrates
 - low detection limit in low picogram range (10⁻¹²)
 - long light emission: 6 hours signal duration
 - excellent stability: working solutions are stable for more than 24 hours

Order-No.	Quantity
A7786,0800	1 Kit
A7786,4000	1 Kit

Comment: This Chemiluminescence Detection Kit is a complete ready-to-use kit for the chemiluminescence detection of membrane-immobilized proteins (Western Blot) and immobilized nucleic acids (Southern and Northern blot). The detection is based on horseradish peroxidase (HRP), conjugated directly or indirectly (HRP-labelled antibodies/streptavidin) to specific antigens or sequences of nucleic acids. The **Chemiluminescence Detection Kit for Horseradish Peroxidase PicoDetect Extended** is comparable to product A3417 in terms of sensitivity, but significantly improved in terms of duration of light emission (6 hours). The stability of the working solution, 1 : 1 mixture of the two reagents, is improved as well.

Cheluminate-HRP FemtoDetect Plus

B

Enhanced ChemiLuminescence
Detection Kit FemtoDetect Plus

HS-No.: 38220000

Storage: 2-8°C

- ◆ Application
 - for the detection of immobilized proteins (Western blot)
 - for the detection of immobilized nucleic acids (Southern and Northern blot)
 - sufficient for 200 cm² and 1000 cm² and 2000 cm², respectively
 - preferred detection system: Imaging equipment. film may be used as well
- ◆ special advantages of this kit
 - cost-effective: the primary antibody can be diluted up to 1/100,000
 - extremely high intensity: the signal is at least 150 times more intense as compared to phenolic enhancer substrates
 - extremely low detection limit in low femtogram range (10⁻¹⁵)
 - very long light emission: 8 hours signal duration
 - excellent stability: working solutions are stable for more than 8 hours

Order-No.	Quantity
A7879,0200	1 Kit
A7879,1000	1 Kit
A7879,2000	1 Kit

Comment: The **Chemiluminescence Detection Kit for Horseradish Peroxidase FemtoDetect Plus** is further improved in terms of sensitivity compared to all other HRP-based detection kits. With a detection limit in the low femtogram range, this kit may be the most sensitive HRP-detection kit available. The duration of light emission (8 hours) is very high. Please note that, especially when using this kit, the extremely high light output may require shorter exposure time of the film and / or a further dilution of the antibodies. The 8 hour stability of the working solution, 1 : 1 mixture of the two reagents, is very good.

CheLuminate-HRP ELISA FemtoDetect

B

HS-No.: 38220000

Storage: 2-8°C

- ◆ Application
 - for the detection of antigens / antibodies in ELISA
 - sufficient for 5x, 25x or 50x 96 well plates, respectively
 - preferred detection system: Luminometer
- ◆ special advantages of this kit
 - very high signal intensity at 425 nm
 - very low detection limit in the mid femtogram range (10⁻¹³ - 10⁻¹⁴)
 - 30 minutes light output stability
 - excellent stability: working solution is stable for 24 hours

Order-No.	Quantity
A8055,0100	100 ml
A8055,0250	250 ml
A8055,0500	500 ml

CheLuminate-HRP ELISA FemtoDetect Plus



B

HS-No.: 38220000

Storage: 2-8°C

◆ Application

- for the detection of antigens and antibodies in ELISA
- sufficient for 2x, 5x or 25x 96 well plates, respectively
- preferred detection system: Luminometer

◆ special advantages of this kit

- very high signal intensity at 425 nm: (at least 20 times more intense as compared to phenolic enhancer substrates)
- extreme low detection limit in the low femtogram range (10^{-15})
- Signal duration 30 minutes
- excellent stability: working solution is stable for 6 hours

Order-No.	Quantity
A8031,0020	20 ml
A8031,0100	100 ml
A8031,0250	250 ml

Chenodeoxycholic acid *BioChemica*

B

3 α ,7 α -Dihydroxy-5 β -cholanoic acid

C₂₄H₄₀O₄
M = 392.58 g/mol
CAS-No.: 474-25-9
HS-No.: 29181998
EC-No.: 207-481-8

Storage: RT

Specification:

Assay (titr.) min. 98 %
 α 20°C/D; 2 %, EtOH +11° - +13°
Cholic acid (TLC) max. 0.5 %

Order-No.	Quantity
A1690,0001	1 g
A1690,0005	5 g

CHES

2-(N-Cyclohexylamino)-ethanesulfonic acid

C₈H₁₇NO₃S
M = 207.29 g/mol
CAS-No.: 103-47-9
HS-No.: 29213099
EC-No.: 203-115-6

Storage: RT
LGK: 10 - 13
Disposal: 4

Useful pH range pH 8.6 - 10.0
pK_a (25°C) 9.55

CHES Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
pH (1 %; H₂O) 5.0 - 6.0 (20°C)
Loss on drying max. 1 %

A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.04

Order-No.	Quantity
A4097,0025	25 g
A4097,0100	100 g

CHES Buffer grade

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
pH (1 %; H₂O; 20°C) 5.0 - 6.0
Loss on drying max. 1 %

A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.04

Order-No.	Quantity
A1065,0025	25 g
A1065,0100	100 g
A1065,0250	250 g

Literature: (1) Ellis, K.J. & Morrison, J.F. (1982) *Methods Enzymol.* **87**, 405-426
(2) Benning, M.M. et al. (1995) *Biochemistry* **34**, 7973-7978
(3) Balashov, S.P. et al. (1995) *Biochemistry* **34**, 8820-8834

Buffers of constant ionic strength for studying pH-dependent processes.
Three dimensional structure of the binuclear center of phosphotriesterase.
Investigation of the function of Asp-85 and Arg-82 in bacteriorhodopsin.

Comment: Reference 1 provides informations based on mathematical models for the right choice of the best buffer substance for investigations on pH-dependent processes. Unfortunately it requires detailed knowledge in mathematics.

CHES interferes with the Lowry assay. It is suitable for the crystallization of phosphotriesterase (50 mM) or in the chemical modification of bacteriorhodopsin (10 mM).

Chianti Classico see Ethanol 10 % - 39 % Page 336

Chitosamin hydrochloride see D(+)-Glucosamine hydrochloride *BioChemica* Page 377

Chloral hydrate pure Ph. Eur.

C

Trichloroacetaldehyde hydrate

$C_2H_3Cl_3O_2$
 $M = 165.40 \text{ g/mol}$
 CAS-No.: 302-17-0
 HS-No.: 29055998
 EC-No.: 206-117-5

Storage: RT
 LGK: 6.1 B

Class / PG: 6.1/II
 UN2811
 WGK: 2
 Danger
 H315-H319-H301
 P305+P351+P338-P302+P352

**Specification:**

Assay (titr.) 98.5 - 101.0 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.002 %
 Identity complies
 Non-volatile matter max. 0.1 %

pH (10 %; H_2O) 3.5 - 5.5
 Chloral alcoholate complies
 Chloride max. 0.01 %

Order-No.	Quantity
A4431,0500	500 g
A4431,1000	1 kg
A4431,10006	6 x 1 kg
A4431,5000	5 kg

 α -Chloralose

B

Glucochloralose

$C_8H_{11}Cl_3O_6$
 $M = 309.53 \text{ g/mol}$
 CAS-No.: 15879-93-3
 HS-No.: 29400000
 EC-No.: 240-016-7

Storage: RT

Warning
 H302-H332
 P302+P352-P262-P260



Melting point 184 - 187°C

Specification:

Assay min. 97 %
 α 20°C/D; 2 %, EtOH +18.5° - +19.5°
 Sulfated ash max. 0.5 %
 Loss on drying max. 0.5 %

Chloride max. 0.001 %

Order-No.	Quantity
A1993,0100	100 g
A1993,0250	250 g
A1993,0500	500 g

Chloramine T trihydrate

Melting point > 70°C
 Solubility (20°C) 150 g/L (H_2O)

$C_7H_7ClNNaO_2S \cdot 3H_2O$
 $M = 281.69 \text{ g/mol}$
 CAS-No.: 7080-50-4
 HS-No.: 29350090
 EC-No.: 204-854-7

Storage: RT
 LGK: 8 A
 Disposal: 3

Class / PG: 8/III
 UN3263
 WGK: 2
 Danger
 EUH031-H334-H302-H314
 P305+P351+P338-P301+P330+P331-
 P304+P341-P280

**Chloramine T trihydrate p.A.**

C

*Toluene-4-sulfonechloramide sodium,
 N-Chloro-4-toluenesulfonamide sodium
 salt*

Specification:

Assay (iodometr.) min. 99 %
 EtOH-insoluble matter max. 1.5 %
 Identity (IR) complies
 pH (5 %; H_2O) 8 - 10 (20°C)

Order-No.	Quantity
A4331,0250	250 g
A4331,0500	500 g
A4331,1000	1 kg
A4331,10006	6 x 1 kg

Chloramine T trihydrate pure Ph. Eur.

C

Specification:

Assay (iodometr.) 98.0 - 103.0 %
 Appearance of solution complies
 EtOH-insoluble matter max. 2 %
 Identity (IR) complies
 ortho-Compounds complies
 pH (5 %; H_2O) 8.0 - 10.0

Order-No.	Quantity
A3783,0250	250 g
A3783,0500	500 g
A3783,1000	1 kg
A3783,10006	6 x 1 kg
A3783,5000	5 kg

Chloramine T trihydrate for synthesis

C

Specification:

Assay (titr.) min. 97 %

Order-No.	Quantity
A4437,1000	1 kg
A4437,10006	6 x 1 kg
A4437,5000	5 kg

Chloramine T - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Chloramine T - Standard volumetric solution (0.5 M)

0.5 mol/L (1 N Solution)
aqueous solutions

Class / PG: 8/III
UN3267
Danger
EUH031-H334-H314-H302


C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3305,1000	1 L
A3305,5000	5 L
A3305,9010	10 L

Chloramin T - Standard volumetric solution (0.05 M)

0.05 mol/L (0.1 N Solution)
aqueous solutions

Danger
H315-H319-H334
P302+P352-P305+P351+P338-P280


C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A5448,1000	1 L
A5448,5000	5 L
A5448,9010	10 L

Chloramine T - Solution 5 %

Composition:

Chloramine T (A4331) 50 g/L

Order-No.	Quantity
A4317,1000	1 L
A4317,5000	5 L

C

Chloramine T - Solution 0.4 %

Composition:

Chloramine T (A4331) 4 g/L

Order-No.	Quantity
A3296,1000	1 L
A3296,5000	5 L

C

Chloramphenicol

Melting point 149 - 153°C
Solubility (25°C) 2.5 g/L

 $C_{11}H_{12}Cl_2N_2O_5$
 $M = 323.13 \text{ g/mol}$
CAS-No.: 56-75-7
HS-No.: 29414000
EC-No.: 200-287-4

Storage: RT
LGK: 10 - 13

WGK: 3
Danger
H350
P308+P313-P201


Chloramphenicol Molecular biology grade

Specification:

DNases/RNases/Proteases not detectable
Assay (photometr) min. 98.5 %
 α_{20}^{D}/D : 5 % EtOH +18.5° - +20.5°
Loss on drying max. 0.5 %

Sulfated ash max. 0.1 %
Chloride max. 0.01 %

Order-No.	Quantity
A7495,0025	25 g
A7495,0050	50 g
A7495,0100	100 g

B

Chloramphenicol BioChemica

B

Chloromycetin, D(-)-threo-2,2-Dichloro-N-[[β-hydroxy-α-(hydroxymethyl)-β-(4-nitrophenyl)-ethyl]-acetamide

Specification:

Assay (photometr.)	 min. 98.5 %	Chloride	 max. 0.01 %
α20°C/D; 5 % EtOH	 +18.5° - +20.5°		
Loss on drying	 max. 0.5 %		
Sulfated ash	 max. 0.1 %		

Order-No.	Quantity
A1806,0025	25 g
A1806,0050	50 g
A1806,0100	100 g

Literature: (1) Shaw, W.V. (1975) *Methods Enzymol.* **43**, 737-755

Chloramphenicol acetyltransferase from chloramphenicol-resistant bacteria.

(2) Oswald, T. & Rinas, U. (1996) *Anal. Biochem.* **236**, 357-358

Chloramphenicol-resistance interferes with the purification of 'His-tag' proteins.

(3) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page A2.6. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Comment: Chloramphenicol was isolated from *Streptomyces venezuelae*. It is active against many gram positive and gram negative bacteria and actinomycetes. Chloramphenicol inhibits the polysome formation and protein biosynthesis by binding to the bacterial ribosome. An inhibition of the protein biosynthesis in eukaryotes is observed at concentrations 20 - 100fold higher than those required for bacteria. The enzyme chloramphenicol acetyltransferase (CAT; EC 2.3.1.28; ref. 1) gives resistance to the antibiotic. Therefore, the corresponding gene is widely used as a selection marker on plasmids. The enzyme CAT has a relatively high content of histidine residues. This results in a copurification with His-tagged proteins on Ni NTA-columns (affinity chromatography), if the His-tagged protein was expressed in chloramphenicol-resistant *E. coli* strains. It is recommended not to use such bacterial strains for the expression of recombinant His-tagged proteins [2].

Stability: The crystalline substance chloramphenicol is stable for approx. 5 years. In aqueous solutions, the stability depends on the temperature: At 100°C it is stable for 5 hours, at 37°C an inactivation of 50 % is observed after 6 months, at +5°C for 2 years. Stability is reduced at pH values above 9.5 by hydrolysis of the antibiotic. Chloramphenicol is water-soluble (2.5 - 4.4 mg/ml at 25 - 28°C), of low solubility at pH values between 5.5 and 7. Solubility in alcohol or ethyleneglycol (> 20 mg/ml) is significantly better. **Stock solutions** are prepared at concentrations of 10 mg/ml in Methanol or up to 34 mg/ml in Ethanol. Store the solutions at -20°C. The working concentration is 20 - 25 µg/ml for stringent plasmids and 170 µg/ml for relaxed plasmids.

Chloramphenicol pure Ph. Eur.

C

Specification:

Assay (photometr.)	 98.0 - 102.0 %	Loss on drying	 max. 0.5 %
α20°C/D; 6 % EtOH	 +18.5° - +20.5°	Related subst.	 max. 0.5 %
Acidic/alkaline react. subst.	complies	Sulfated ash	 max. 0.1 %
Identity	 complies	Chloride	 max. 0.01 %

Order-No.	Quantity
A6435,0050	50 g
A6435,0100	100 g
A6435,0250	250 g

Chloramphenicol Glucose Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar	 14.8 g/L
Chloramphenicol	 0.2 g/L
Glucose	 20.0 g/L
Yeast extract	 5.0 g/L

Specification:

pH before autoclaving . . . approx. 6.6 (20°C)

Order-No.	Quantity
A5688,0500	500 g
A5688,5000	5 kg

Literature: (1) ISO standard 7954 (AFNOR NF V 08 022)

Comment: This selective medium is suitable for the enumeration of yeast and moulds.

Directions: Suspend 40 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Chlorcalcium see Calcium chloride granulated Page 177

Chlorhexidine diacetate pure Ph. Eur.

C

1,1'-Hexamethylene bis-[5-(4-chlorophenyl)-biguanide] diacetate

C₂₆H₃₈Cl₂N₁₀O₄
M = 625.56 g/mol
CAS-No.: 56-95-1
HS-No.: 29252900
EC-No.: 200-302-4

Storage: RT
protected from light
LGK: 10 - 13
Disposal: 3

Warning
H410-H302
P410-P273



Specification:

Assay (titr., dried substance)	98 - 101 %	Related subst.	 complies
Chloroaniline	 max. 0.05 %	Sulfated ash	 max. 0.15 %
Identity	 complies		
Loss on drying	 max. 3.5 %		

Order-No.	Quantity
A8444,0010	10 g
A8444,0025	25 g
A8444,0100	100 g

Chlorhexidine diacetate monohydrate *BioChemica*

B

1,1'-Hexamethylene bis-[5-(4-chloro-phenyl)-biguanide] diacetate

C₂₆H₃₈Cl₂N₁₀O₄ · H₂O
M = 643.56 g/mol
CAS-No.: 56-95-1
HS-No.: 29252900
EC-No.: 200-302-4

Storage: RT
protected from light
LGK: 10 - 13
Disposal: 3

Warning
H302-H410
P273-P410



Specification:

Assay (titr.) min. 98 %
Loss on drying max. 3.5 %

Order-No.	Quantity
A3785,0010	10 g
A3785,0025	25 g
A3785,0100	100 g

- Literature:** (1) Walters, T.H. *et al.* (1983) *Microbios* **38**, 195-204
(2) Hiom, S.J. *et al.* (1992) *J. Appl. Bacteriol.* **72**, 335-340
(3) Fraud, S. *et al.* (2003) *J. Antimicrob. Chemother.* **51**, 575-584
(4) Thomas, L. *et al.* (2005) *J. Appl. Microbiol.* **98**, 533-543
(5) Ansel, H.C. (1967) *J. Pharm. Sci.* **56**, 616-619

Antifungal action of chlorhexidine.
Effects of chlorhexidine diacetate on *Candida albicans*, *C. glabrata* and *Saccharomyces cerevisiae*.
Effects of *ortho*-phthalaldehyde, glutaraldehyde and chlorhexidine diacetate on *Mycobacterium chelonae* and *Mycobacterium abscessus* strains with modified permeability.
Antimicrobial activity of chlorhexidine diacetate and benzalkonium chloride against *Pseudomonas aeruginosa* and its response to biocidal residues.
Hemolysis of erythrocytes by antibacterial preservatives IV. Hemolytic activity of chlorhexidine diacetate.

Comment: Chlorhexidine diacetate shows mycobactericidal, fungicidal and bactericidal activity. This antimicrobial activity is the result of the interaction of the compound with negatively-charged groups of cell wall components. It leads to a leakage of intracellular material due to disintegration of the cytoplasmic membrane. For killing yeasts, higher concentrations (100 - 1000 µg/ml) are required than that to inhibit growth of bacteria (10 - 100 µg/ml). At similar concentrations, rabbit erythrocytes are destroyed. The hemolytic activity of Chlorhexidine diacetate was reduced by the presence of polyethylene glycols of various molecular weights and by dimethylsulfoxide (5).
Chlorhexidine diacetate is soluble in water (20°C) at 1.9 g/100 ml. In aqueous solutions it decomposes at temperatures above 70°C. It is soluble in alcohol, glycerol, polyethylene glycols and propylene glycol. The working concentration depends on the target organism.

(R)-N-[[5-Chloro-3,4-dihydro-8-hydroxy-3-methyl-1-oxo-1H-2-benzopyran-7-yl)-carbonyl]-L-phenylalanine see Ochratoxin A *BioChemica* Page 580
3-Chloroacetoxy-2-naphthoic acid anilide see Naphthol AS chloroacetate *BioChemica* Page 559
1-Chloro-3-bromopropane see 1-Bromo-3-chloropropane *BioChemica* Page 159

1-Chlorobutane

Butyl chloride

C₄H₉Cl
M = 92.58 g/mol
CAS-No.: 109-69-3
HS-No.: 29031980
EC-No.: 203-696-6

Storage: RT
LGK: 3 A
Disposal: 2

Class / PG: 3/II
UN1127
WGK: 2
Danger
H225
P210



Boiling point 78°C
Density (d 20°C/4°C) ... 0.886
Melting point -123°C
n 20°C/D 1.4018

1-Chlorobutane Protein sequencing grade

B

Specification:

Assay (HPLC) min. 99.8 %
Sequence analysis test complies
Loss on drying max. 0.05 %

Order-No.	Quantity
A2329,0250	250 ml
A2329,0500	500 ml

1-Chlorobutane HPLC grade

C

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F) max. 0.01 %
A (1 cm/water HPLC grade)
230 nm max. 0.30
240 nm max. 0.10
260 nm max. 0.025
280 nm max. 0.01
300 nm max. 0.005

Order-No.	Quantity
A1756,1000	1 L
A1756,10006	6 x 1 L
A1756,2500	2.5 L

1-Chlorobutane p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
Non-volatile matter max. 0.001 %
Water (K.F) max. 0.1 %

Order-No.	Quantity
A3588,0250	250 ml
A3588,0500	500 ml
A3588,1000	1 L
A3588,10006	6 x 1 L

1-Chlorobutane for synthesis

C

Specification:

Assay (HPLC) min. 99 %

Order-No.	Quantity
A3501,0500	500 ml
A3501,1000	1 L
A3501,2500	2.5 L

Chloro calcium see Calcium chloride dried, powdered Page 178
3β-Chloro-5-cholestene see Cholesteryl chloride *BioChemica* Page 209
(7S)-7-Chloro-7-deoxylincomycin hydrochloride see Clindamycin hydrochloride *BioChemica* Page 218

Chloroform

Trichloromethane

Boiling point 61°C
Density (d 20°C/4°C) .. 1.483
Melting point -63°C
Solubility (20°C) 8 g/L (H₂O)
n 20°C/D 1.4459

CHCl₃
M = 119.38 g/mol
CAS-No.: 67-66-3
HS-No.: 29031300
EC-No.: 200-663-8

Storage: RT
LGK: 6.1 B
Disposal: 2

Class / PG: 6.1/III
UN1888
WGK: 3
Warning
H315-H351-H302-H373
P302+P352-P314



Chloroform ultrapure

C

stabilized with approx. 20 ppm Amylene

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0002 meq/g
Non-volatile matter max. 0.0002 %
Total P max. 0.02 ppm
Total S max. 0.1 ppm
C₂Cl₄ max. 0.002 %
CCl₄ max. 0.002 %
Dichloromethane max. 0.002 %
Water (K.F.) max. 0.01 %

Al max. 0.02 ppm
Ba max. 0.005 ppm
Ca max. 0.05 ppm
Cd max. 0.005 ppm
Cr max. 0.005 ppm
Fe max. 0.05 ppm
Li max. 0.005 ppm
Mg max. 0.02 ppm
Mn max. 0.005 ppm

Na max. 0.2 ppm
Ni max. 0.005 ppm
Pb max. 0.005 ppm
Zn max. 0.01 ppm

Order-No.	Quantity
A3633,0100	100 ml
A3633,0250	250 ml
A3633,0500	500 ml
A3633,1000	1 L
A3633,10006	6 x 1 L
A3633,2500	2.5 L
A3633,25004	4 x 2,5 L

Chloroform Residue analysis grade

C

stabilized with 1 % Ethanol

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0002 meq/g
Non-volatile matter max. 0.0002 %
Water (K.F.) max. 0.05 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1569,2500	2.5 L
A1569,25004	4 x 2,5 L

Chloroform HPLC grade

C

stabilized with 1 % Ethanol

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0002 meq/g
Non-volatile matter max. 0.0002 %
Water (K.F.) max. 0.05 %
A (1 cm/water HPLC grade)
250 nm max. 0.30
260 nm max. 0.07
270 nm max. 0.01
280 nm max. 0.005

Order-No.	Quantity
A1571,1000	1 L
A1571,10006	6 x 1 L
A1571,2500	2.5 L
A1571,25004	4 x 2,5 L

Chloroform GPC grade

C

stabilized with 1 % Ethanol

To be used in gel permeation chromatography, filtered through 0.2 µm filter.

Specification:

Assay (HPLC) min. 99.8 %
Color max. 5 APHA
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.02 %

Order-No.	Quantity
A2336,0500	500 ml
A2336,1000	1 L
A2336,2500	2.5 L

Chloroform BioChemica

B

stabilized with approx. 20 ppm Amylene

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
C₂Cl₄ max. 0.005 %
CCl₄ max. 0.005 %

Dichloromethane max. 0.005 %
Water (K.F.) max. 0.02 %
Chloride max. 0.0002 %
Cu max. 0.000002 %
Fe max. 0.00001 %

Pb max. 0.00001 %
Zn max. 0.000005 %

Order-No.	Quantity
A3691,0500	500 ml
A3691,1000	1 L
A3691,10006	6 x 1 L
A3691,2500	2.5 L

Chloroform dried, p. A.

C

stabilized with approx. 20 ppm Amylene

Specification:

Assay (HPLC) min. 99.8 %
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.005 %

Order-No.	Quantity
A2350,0500	500 ml
A2350,1000	1 L

* This product contains molecular sieve as a drying agent!

Chloroform p. A.

C

*stabilized with approx. 20 ppm Amylene***Specification:**

Assay (HPLC)	min. 99.5 %	Mg	max. 0.000005 %
Acidity/Alkalinity	max. 0.0005 meq/g	Na	max. 0.00002 %
Non-volatile matter	max. 0.0005 %	Ni	max. 0.00002 %
Total P	max. 0.00001 %	Pb	max. 0.00001 %
Total S	max. 0.00005 %	Zn	max. 0.000005 %
Total Si	max. 0.000005 %		
C ₂ Cl ₄	max. 0.005 %		
CCl ₄	max. 0.005 %		
Dichloromethane	max. 0.005 %		
Water (K.F.)	max. 0.02 %		
Ca	max. 0.00001 %		
Cu	max. 0.000002 %		
Fe	max. 0.00001 %		

Order-No. Quantity

A1585,0100	100 ml
A1585,0500	500 ml
A1585,1000	1 L
A1585,10006	6 x 1 L
A1585,2500	2.5 L
A1585,25004	4 x 2.5 L
A1585,5000	5 L
A1585,9010	10 L
A1585,9020	20 L
A1585,9025BK	25 L
A1585,9025PE	25 L

Chloroform pure DAB 9, BP

C

*stabilized with 1 - 2 % Ethanol***Specification:**

Assay (HPLC)	99.0 - 99.4 %
Acidity (HCl)	max. 0.0005 %
Appearance of substance	complies
Free chlorine	max. 0.0001 %
Non-volatile matter	max. 0.001 %
Ethanol (GC)	1.0 - 2.0 % (w/w)
Water (K.F.)	max. 0.05 %
Chloride	max. 0.0001 %

Order-No. Quantity

A2640,0500	500 ml
A2640,1000	1 L
A2640,10006	6 x 1 L
A2640,2500	2.5 L
A2640,25004	4 x 2.5 L
A2640,5000	5 L
A2640,9010	10 L
A2640,9025BK	25 L
A2640,9025PE	25 L

Chloroform pure

C

*stabilized with approx. 20 ppm Amylene***Specification:**

Assay (HPLC)	min. 99 %
Heavy metals (as Pb)	max. 0.001 %

Order-No. Quantity

A0642,1000	1 L
A0642,10006	6 x 1 L
A0642,2500	2.5 L
A0642,25004	4 x 2.5 L
A0642,5000	5 L
A0642,9010	10 L
A0642,9025BK	25 L
A0642,9025PE	25 L

Chloroform Technical grade

C

*stabilized with approx. 20 ppm Amylene***Specification:**

Assay (HPLC)	min. 98 %

Order-No. Quantity

A4492,1000	1 L
A4492,10006	6 x 1 L
A4492,2500	2.5 L
A4492,25004	4 x 2.5 L
A4492,5000	5 L
A4492,9010	10 L
A4492,9025BK	25 L
A4492,9025PE	25 L

Chloroform D₁

C

Boiling point	60°C
Density (d 20°C/4°C)	1.50
Melting point	-64.1°C
Solubility (20°C)	8.2 g/L (H ₂ O)

CDCl ₃	
<i>M</i> = 120.38 g/mol	
CAS-No.: 865-49-6	
HS-No.: 28459010	
EC-No.: 212-742-4	

Storage: RT	
LGK: 10 - 13	
Disposal: 2	

Class / PG: 6.1/III
 UN1888
 WGK: 3
 Warning
 H302-H373-H315-H351
 P302+P352-P314

**Specification:**

Deuteration degree	min. 99.8 %

Order-No. Quantity

DS-5,0025	25 ml
DS-5,0100	100 ml

Chloroform : Isoamyl alcohol

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 2

Class / PG: 6.1/III
UN2810
Warning
H351-H373-H315-H302
P314-P302+P352


Chloroform : Isoamyl alcohol 24 : 1 BioChemica

B

mixture of Chloroform : Isoamyl alcohol in
the ratio 24 : 1

Composition:

Chloroform (A1585) 960 ml/L
Isoamyl alcohol (A0875) ... 40 ml/L

Order-No.	Quantity
A1935,0100	100 ml
A1935,0250	250 ml
A1935,0500	500 ml

Chloroform : Isoamyl alcohol 49 : 1 BioChemica

B

mixture of Chloroform : Isoamyl alcohol in
the ratio 49 : 1

Composition:

Chloroform (A1585) 980 ml/L
Isoamyl alcohol (A0875) ... 20 ml/L

Order-No.	Quantity
A0806,0100	100 ml
A0806,0250	250 ml
A0806,0500	500 ml

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-48

Phenol extraction in large and small scale.

Comment: The addition of chloroform : isoamyl alcohol (49 : 1 or 24 : 1 (v/v)) to phenol in a ratio of 1 : 1 (v/v) during the phenol extraction of DNA / RNA will increase the yield of DNA / RNA. This procedure will separate DNA / RNA-protein aggregates. Other advantages of the addition of chloroform : isoamyl alcohol are: (I) chloroform denatures proteins and improves the dissociation of nucleic acid and protein (II) the high density of chloroform improves and accelerates the separation of organic and aqueous phase, (III) chloroform efficiently removes lipids, (IV) isoamyl alcohol prevents foaming of the solution.

(-)-N-[5-(4-Chloro-8-hydroxy-3-methyl-1-oxo-7-isochroman-1-yl)carbonyl]-3-phenylalanine see Ochratoxin A *BioChemica* Page 580

6-Chloro-3-indolyl-β-D-galactopyranoside see Rose-Gal *BioChemica* Page 691

6-Chloro-3-indolyl-β-D-glucuronide cyclohexylammonium salt see Rose-Glucuro CHA salt *BioChemica* Page 692

6-Chloro-3-indolyl-phosphate p-toluidine salt see Rose-Phos p-toluidine salt *BioChemica* Page 692

Chloromycetin see Chloramphenicol Page 201

4-Chloro-1-naphthol BioChemica

B

4CN

C₁₀H₇ClO
M = 178.62 g/mol
CAS-No.: 604-44-4
HS-No.: 29081900
EC-No.: 210-068-5

Storage: RT
LGK: 10 - 13

Warning
H319-H335-H315
P305+P351+P338


Melting point 117 - 120°C

Specification:

Assay min. 99 %
IR-Spectrum complies
Peroxidase assay complies

Order-No.	Quantity
A3786,0005	5 g
A3786,0010	10 g
A3786,0025	25 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 10.8.9 (Suppl. 50) Greene Publishing & Wiley-Interscience, New York.

Comment: 4-Chloro-1-naphthol (4CN) is used in a chromogenic detection system for horseradish peroxidase (HRPO). Its oxidized product forms a purple precipitate. In comparison to DAB/ NiCl₂ or TMB or BCIP/NBT it is less sensitive. Tween® 20 inhibits the reaction. Besides, it fades upon exposure to light. Prepare solutions fresh each time (e.g. 60 mg/20 ml ice-cold methanol).

Chlorophenol red

C

3',3''-Dichlorophenolsulfonephthalein

C₁₉H₁₂Cl₂O₅S
M = 423.27 g/mol
CAS-No.: 4430-20-0
HS-No.: 29349990
EC-No.: 224-619-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Transition interval pH 4.8 - 6.4
(brown-yellow-
purple)

Specification:

λ_{max} 1 (pH 4.8) 438 - 443 nm
λ_{max} 2 (pH 6.4) 577 - 580 nm
Loss on drying max. 10 %

Order-No.	Quantity
A1058,0001	1 g
A1058,0005	5 g
A1058,0010	10 g

Chlorophenol red - Solution

C

ready-to-use indicator solution in diluted
ethanol

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 13

Composition:

Chlorophenol red (A1058) .. 0.1 %

Order-No.	Quantity
A2332,0100	100 ml
A2332,0500	500 ml
A2332,1000	1 L

Chloroquine diphosphate *BioChemica*

B

Melting point 213 - 216°C

$C_{18}H_{26}ClN_3 \cdot 2H_3PO_4$
 $M = 515.90 \text{ g/mol}$
CAS-No.: 50-63-5
HS-No.: 29334990
EC-No.: 200-055-2

Storage: RT

Warning
H302
P301+P330+P331-P260-
P305+P351+P338



Specification:

Assay (TLC) min. 98 %
Solubility (5 %; H_2O) clear, slightly yellow
Water (K.F.) max. 3 %

Order-No.	Quantity
A2143,0050	50 g
A2143,0100	100 g

Literature: (1) Luthman, H. & Magnusson, G. (1983) *Nucleic Acids Res.* **11**, 1295-1308 High efficiency polyoma DNA transfection of chloroquine treated cells.
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*. 2nd Edition pages 16.32-16.35. Cold Spring Harbor Laboratory Press. Cold Spring Harbor. New York.

Comment:Chloroquine inhibits the lysosomal hydrolases and thereby the degradation of transfected DNA. The efficiency of a transfection of mouse cells, as well the calcium phosphate coprecipitation as the DEAE dextran transfection, may be increased by 40 % after treatment of the cells with chloroquine (1). It is toxic to the cells and the incubation should not exceed periods longer than 3 to 5 hours.
Stock solutions can be prepared in aqueous solutions (100 mM or 60 mg/ml). Store the solutions protected from light at -20°C. The final concentration depends on the cell line and a good starting concentration is 100 μM (dilution 1 : 1000; ref. 2).

7-Chlorotetracycline hydrochloride see Chlorotetracycline hydrochloride *BioChemica* Page 207

Chlorotetracycline hydrochloride *BioChemica*

B

7-Chlorotetracycline hydrochloride,
Aureomycin
from *Streptomyces aureofaciens*

$C_{22}H_{23}ClN_2O_8 \cdot HCl$
 $M = 515.35 \text{ g/mol}$
CAS-No.: 64-72-2
HS-No.: 29413000
EC-No.: 200-591-7

Storage: RT
protected from light
LGK: 10 - 13

WGK: 1
Danger
H361
P280



Melting range 210 - 215°C

Specification:

Assay (titr.) min. 97 %
Loss on drying max. 3 %

Order-No.	Quantity
A1946,0010	10 g
A1946,0050	50 g

Comment:Chlorotetracycline belongs to the group of tetracyclines and was isolated from the actinomycetes *Streptomyces aureofaciens*. It is a derivative of naphthacene, which forms water-soluble salts with acids and bases. Its activity is bacteriostatic against gram positive and gram negative cocci and bacteria and actinomycetes. The activity will be reduced by divalent and trivalent metal ions (Fe, Al, Cu, Ni, Mg, Mn, Ca etc.). Tetracyclines inhibit the transfer of activated tRNA-bound amino acids to the growing polypeptide chain.
Stability: The dry, crystalline substance of chlortetracycline hydrochloride is stable. It is soluble at 8.5 mg/ml in water at 28°C. The stability in solution is high at +4°C and pH 3 (23 days). Increasing temperatures and pH values decreases its stability.

N-Chloro-4-toluenesulfonamide sodium salt see Chloramine T trihydrate Page 200
Chlorotrimethylsilane see Trimethylchlorosilane Page 834

AC-CHO adh SFM Base

B

HS-No.: 38210000

Storage: 2-8°C

Specification:

Osmolality 290 - 330 mOsm/kg
Sterility complies
pH 7.2 - 7.5

Order-No.	Quantity
A8343,0100	100 ml
A8343,0500	500 ml

Comment:AC-CHO adh SFM Base without L-glutamine is a serum-free medium, containing amino acids, vitamins, salts, lipids and trace elements, that is the basic formulation for CHO cells (Chinese Hamster Ovary cells) in monolayer culture to optimize cell growth and protein expression. It is utilized for the growth of an array of CHO cells such as the CHO-K1 as well as transfected cells containing recombinant DNA which is related to the DHFR gene.
AC-CHO adh SFM Base without L-glutamine when used in conjunction with the AC-CHO Supplement (A8357), a 100-fold concentrate which contains proteins and other components that require storage at -20°C, is intended for use with anchorage-dependent CHO cells. The **preparation of the complete medium** is carried out by adding 1 % AC-CHO Supplement to AC-CHO adh SFM Base, and glutamine is then added. The complete medium does not contain albumin, growth factors or hormones, other than insulin. The total protein concentration is less than 30 mg/liter. After preparation, the complete medium can be stored for up to 30 days 2-8°C. Prolonged exposure to light should be avoided.

AC-CHO supp (100X)

B

HS-No.: 38220000

Storage: -20°C

Specification:

Sterility complies
pH 8.0 - 9.0

Order-No.	Quantity
A8357,0001	1 ml
A8357,0005	5 ml
A8357,0050	50 ml

Comment:This supplement AC-CHO supp (100X) is used with the serum-free media AC-CHO adh SFM Base (A8343) for anchorage-dependent CHO cells, and with AC-CHO sus SFM Base (A8338), for CHO cells in suspension.
The supplement contains proteins and other components that require storage at -20°C. This product is a 100-fold concentrate. Repeated thawing and re-freezing should be avoided by thawing, dividing into useful portions, and re-freezing.

AC-CHO sus SFM Base



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Osmolality 280 - 320 mOsm/kg
Sterility complies
pH 7.2 - 7.5

Order-No.	Quantity
A8338,0100	100 ml
A8338,0500	500 ml

Comment: AC-CHO sus SFM Base is the basic formulation for CHO cells. It is intended for the growth of CHO cells of various kinds: CHO-K1, and transfected cells containing recombinant DNA related to the DHFR gene. The solution contains amino acids, vitamins, salts, lipids and trace elements. The medium should be stored at 2-8°C, and prolonged exposure to light should be avoided.

AC-CHO sus SFM Base, when used with AC-CHO Supplement (A8357), is intended for use with CHO cells in suspension. The **preparation of the complete medium** is carried out by adding 1 % AC-CHO Supplement to AC-CHO sus SFM Base. Two millimolar glutamine is then added. The complete medium does not contain albumin, growth factors or hormones, other than insulin. Total protein concentration is less than 30 mg per liter. After preparation, the complete medium can be stored for up to 30 days at 2-8°C. Prolonged exposure to light should be avoided.

Chocolate Agar Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 14.0 g/L
Buffers 1.0 g/L
Peptones, extracts 13.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving . . . approx. 7.2 (20°C)

Order-No.	Quantity
A5689,0500	500 g
A5689,5000	5 kg

◆ **Attention:** Please note that a supplement (A6784) exists for this agar. Please order separately.

Literature: (1) Carpenter & Morton (1947) *Proc. N.Y. State Assoc. Public Health Labs.* 27, 58

Comment: This is a highly nutritious medium for the isolation and cultivation of fastidious microorganisms, especially *Neisseria* and *Haemophilus* species.

Directions: Suspend 16.5 g in 460 ml distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 35 ml of defibrinated blood and "chocolate" by heating to 80°C for 10 minutes. Cool to 50°C. Dissolve the contents of one vial of Growth Factor Mixture Hydration Fluid with 5 ml of sterile distilled water and aseptically add the "Growth Factor Mixture" (A6784). Mix well and aseptically add to the medium. Mix well before pouring. Store the prepared medium at 2-8°C.

3-[(3-Cholamidopropyl)-dimethylammonio]- 2-hydroxy-1-propanesulfonate see CHAPSO *BioChemica* Page 195

3-[(3-Cholamidopropyl)-dimethylammonio]-1-propanesulfonate see CHAPS Page 195

Cholest-5-en-3-β-ol see Cholesterol Page 208

Cholesterol

Cholest-5-en-3-β-ol

C₂₇H₄₆O

M = 386.66 g/mol
CAS-No.: 57-88-5
HS-No.: 29061310
EC-No.: 200-353-2

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Boiling point approx. 360°C

Melting point 147 - 150°C

Cholesterol *BioChemica*

B

from wool grease from sheeps

Specification:

Assay (HPLC) min. 95 %
α20°C/D; 2 %, CHCl₃ -34° - -38°
Density (d 20°C) 1.07

Loss on drying max. 0.3 %

Order-No.	Quantity
A0807,0050	50 g
A0807,0100	100 g

Cholesterol synthetic

B

Specification:

Assay (HPLC) min. 99.0 %
α25°C/D; 2 %, CHCl₃ max. -35°
Ash max. 0.1 %
Heavy metals (as Pb) max. 0.0005 %
Identity (IR, NMR) complies

Loss on drying max. 0.5 %

Order-No.	Quantity
A6799,0050	50 mg
A6799,0100	100 mg
A6799,0500	500 mg
A6799,0001	1 g

Cholesteryl acetate *BioChemica*

B

3β-Acetoxy-5-cholestene

C₂₉H₄₈O₂

M = 428.70 g/mol
CAS-No.: 604-35-3
HS-No.: 29153900
EC-No.: 210-066-4

Storage: 2-8°C
LGK: 10 - 13

Melting point 112 - 115°C

Specification:

Assay (HPLC) min. 97 %
α20°C/D; 2 %, CHCl₃ -44° ± 2°
Loss on drying max. 1 %

Order-No.	Quantity
A0808,0025	25 g
A0808,0100	100 g

Cholesteryl benzoate *BioChemica*

B

<i>3β-Benzoyl-5-cholestene</i>	$C_{34}H_{50}O_2$ $M = 490.77$ g/mol CAS-No.: 604-32-0 HS-No.: 29163100 EC-No.: 210-064-3	Storage: 2-8°C LGK: 10 - 13
Melting point	 149 - 151°C	

Specification:		Order-No.	Quantity
Assay (HPLC) min. 98 %		A0809,0010	10 g
α 20°C/D; 2 %, $CHCl_3$ -15' $\pm$ 2'		A0809,0025	25 g
Loss on drying max. 0.5 %			

Cholesteryl chloride *BioChemica*

B

<i>3β-Chloro-5-cholestene</i>	$C_{27}H_{45}Cl$ $M = 405.11$ g/mol CAS-No.: 910-31-6 HS-No.: 29035980 EC-No.: 213-004-4	Storage: 2-8°C LGK: 10 - 13
Melting point	 94°C	

Specification:		Order-No.	Quantity
Assay (HPLC) min. 98 %		A0810,0010	10 g
α 20°C/D; 1 %, $CHCl_3$ -24' $\pm$ 2'		A0810,0025	25 g
Loss on drying max. 1 %			

Cholesteryl octadecanoate see Cholesteryl stearate *BioChemica* Page 209

Cholesteryl stearate *BioChemica*

B

<i>Cholesteryl octadecanoate</i>	$C_{45}H_{80}O_2$ $M = 653.13$ g/mol CAS-No.: 1184-05-0 HS-No.: 29157000 EC-No.: 252-637-0	Storage: 2-8°C LGK: 10 - 13
Melting point	 81°C	

Specification:		Order-No.	Quantity
Assay (HPLC) min. 96 %		A0811,0005	5 g
α 20°C/D; 2 %, $CHCl_3$ -21' $\pm$ 2'		A0811,0010	10 g
Loss on drying max. 1 %			

Cholic acid *BioChemica*

B

<i>3α,7α,12α-Trihydroxy-5β-cholalic acid</i>	$C_{24}H_{40}O_5$ $M = 408.58$ g/mol CAS-No.: 81-25-4 HS-No.: 29181930 EC-No.: 201-337-8	Storage: RT LGK: 10 - 13 Disposal: 3	WGK: 1
Melting point	 197 - 202°C		
Solubility (15°C)	 0.28 g/L (H_2O)		

Specification:		Order-No.	Quantity
Assay min 99 %		A2834,0025	25 g
Loss on drying max. 0.5 %		A2834,0100	100 g
Residue on ignition max. 0.1 %		A2834,0250	250 g
Deoxycholic acid max. 1 %			

Cholic acid sodium salt see Sodium cholate *BioChemica* Page 728

Choline chloride *BioChemica*

B

<i>N-(2-Hydroxyethyl)-trimethylammoniumchloride</i>	$C_5H_{14}ClNO$ $M = 139.63$ g/mol CAS-No.: 67-48-1 HS-No.: 29231000 EC-No.: 200-655-4	Storage: RT LGK: 10 - 13	WGK: 1 hygroscopic

Specification:		Order-No.	Quantity
Assay (titr.) min. 98 %		A0785,0100	100 g
Heavy metals (as Pb) max. 0.001 %		A0785,0500	500 g
Loss on drying max. 0.5 %		A0785,1000	1 kg
Solubility (10 %; H_2O) clear, colorless			

D-Chondrosamine hydrochloride see D(+)-Galactosamine hydrochloride *BioChemica* Page 367

Chorionic Gonadotropin (HCG), human

B

hCG
lyophilized from 20 mM ammonium bicarbonate. May contain traces of buffer salts.
from human urine from pregnant women

CAS-No.: 9002-61-3
HS-No.: 29371900

Storage: 2-8°C

Specification:

Assay min. 98 %
Activity (RID vs. 1st Int. Ref. Prep.) min. 14,000 IU/mg

Order-No.	Quantity
A6943,0100	100 µg
A6943,0500	500 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Chorionic Gonadotropin β -subunit, human

B

β -HCG
lyophilized from 50 mM ammonium bicarbonate
from human urine from pregnant women

CAS-No.: 72979-70-5
HS-No.: 29371900

Storage: -20°C

Order-No.	Quantity
A6956,0010	10 µg
A6956,0100	100 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Chrome black see Eriochrome black T (C.I. 14645) Page 330

Chrome Violet CG see Aurintricarboxylic acid triammonium salt (C.I. 43810) BioChemica Page 122

Chromic acid potassium salt see Potassium chromate p. A. Page 640

Chromic mixture for cleaning of glassware

C

HS-No.: 38249097

Storage: RT
LGK: 5.1 B
Disposal: 15

Class / PG: 8/1
UN2240
WGK: 3
Danger
H272-H400-H350-H314-H317
P280-P301+P330+P331-P309-P223-
P305+P351+P338-P201-P310



Composition:

Potassium dichromate 20 g/L in concentrated Sulfuric acid

Order-No.	Quantity
A2767,1000	1 L
A2767,10006	6 x 1 L
A2767,2500	2.5 L
A2767,25004	4 x 2.5 L

Chromium(III) chloride hexahydrate pure

C

Melting point 95°C
Solubility (20°C) 590 g/L (H₂O)

CrCl₃ · 6H₂O
M = 266.45 g/mol
CAS-No.: 10060-12-5
HS-No.: 28273985
EC-No.: 233-038-3

Storage: RT
LGK: 10 - 13

WGK: 2
Warning
H302
P262



Specification:

Assay (titr.) min. 96 %
Sulfate max. 0.1 %
Fe max. 0.03 %

Order-No.	Quantity
A5459,0500	500 g
A5459,1000	1 kg
A5459,10006	6 x 1 kg
A5459,5000	5 kg

Chromium(III) potassium sulfate - Solution for COD-determination

C

DIN 38409 (H44, 5.4.9)

HS-No.: 38220000

Storage: RT

Composition:

Chromium(III) potassium sulfate · 12H₂O
..... 250 g/L

Order-No.	Quantity
A1512,0500	500 ml
A1512,1000	1 L
A1512,10006	6 x 1 L
A1512,2500	2.5 L

Chromogene black see Eriochrome black T (C.I. 14645) Page 330

Chromomycin A3 BioChemica

B

Antibiotic 69895 A, 3^B-O-(4-O-Acetyl-2,6-dideoxy-3-C-methyl- α -L-arabino-hexopyranosyl)-7-methylolivomycin D, Antibiotic B 599, Aburamycin B from *Streptomyces griseus*

C₅₇H₈₂O₂₆
M = 1183.24 g/mol
CAS-No.: 7059-24-7
HS-No.: 29419000

Storage: -20°C
protected from light

Class / PG: 6.1/I
UN3462
Danger
H360
P309+P311-P280-P201-P260



Melting point 158 - 163°C

Specification:

Assay min. 93 %
 λ_{max} (MeOH) 229, 277, 316, 331 nm

Order-No.	Quantity
A7632,0005	5 mg
A7632,0010	10 mg

Literature: (1) Jensen, R.H. (1977) *J. Histochem. Cytochem.* **25**, 573-579

Chromomycin A₃ As A Fluorescent Probe For Flow Cytometry of Human Gynecologic Samples.

(2) Shafer, R.H. *et al.* (1988) *Eur. J. Biochem.* **173**, 377-382

Chromomycin A₃ binds to left-handed poly(dG-m⁵dC).

Comment: Chromomycin A₃ is a glycosidic antineoplastic antibiotic produced by the bacterium *Streptomyces griseus*. It reversibly binds specifically to guanine-cytosine (G/C) base pairs in the minor groove of DNA, thereby inhibiting RNA synthesis. Chromomycin A₃ forms two types of complexes with Mg²⁺ (complex I in a ratio 1:1 in terms of chromomycin A₃-Mg²⁺ and complex II in a ratio 2:1 in terms of chromomycin A₃-Mg²⁺). These complexes are the DNA-binding ligands. This antibiotic is used as a fluorescent chromosome dye. It is detected with a filter at the wavelength 435-470 nm.

Solubility: Chromomycin A₃ is soluble in DMSO, ethyl acetate, and methanol. Stock solutions have to be stored protected from light and refrigerated. They are very stable. It is recommended not to use freshly prepared solutions.

Chymostatin

B

Mixture of 3 Isomers: (S)-N-[(S)-1-Carboxy-2-phenylethylcarbamoyl]- α -[(S)-2-imino-4-piperidinyl]-glycyl-L-phenylalaninal with X = L-Leu / X = L-Ile / X = L-Val

CAS-No.: 9076-44-2
HS-No.: 29419000

Storage: -20°C
LGK: 10 - 13

WGK: 1

Specification:

Activity (IC50) approx. 0.3 μ g/ml

Order-No.	Quantity
A2144,0005	5 mg
A2144,0010	10 mg
A2144,0025	25 mg

Literature: (1) Umezawa, H. *et al.* (1970) *J. Antibiotics* **23**, 425-427

Chymostatin, a new Chymotrypsin inhibitor produced by actinomycetes.

(2) Umezawa, H. (1976) *Methods Enzymol.* **45**, 678-695

Structures and activities of protease inhibitors of microbial origin.

Comment: Chymostatin was isolated from *Streptomyces hygroscopicus* (1, 2). It reversibly inhibits serine and cysteine proteases, like α -, β -, γ - and δ -chymotrypsin (ID₅₀ = 0.15 μ g/ml), cathepsin A (ID₅₀ = 62.5 μ g/ml), cathepsin B (ID₅₀ = 2.6 μ g/ml) and cathepsin D (ID₅₀ = 49.0 μ g/ml) and papain (ID₅₀ = 7.5 μ g/ml). The effective concentration ranges from 10 to 100 μ M (corresponding to 6 - 60 μ g/ml). Chymostatin may be dissolved in acetic acid or DMSO, it is of low solubility in water, methanol and ethanol, insoluble in ethyl acetate, ether, hexane or chloroform (1, 2).

α -Chymotrypsin

[E.C. 3.4.21.1]
from bovine pancreas

M = ~25000 g/mol
CAS-No.: 9004-07-3
HS-No.: 35079090
EC-No.: 232-671-2

Storage: -20°C
LGK: 10 - 13

WGK: 1
Danger
H319-H335-H315-H334
P342+P311-P302+P352-
P305+P351+P338-P304+P341



α -Chymotrypsin from bovine pancreas Grade I

B

supplied as salt-free, freeze-dried powder

Specification:

Activity min. 1500 Units/mg
Bacterial plate count < 10000 organisms/g
eus absent
Trypsin * max. 2.5 %

Order-No.	Quantity
A4531,0500	500 mg
A4531,0001	1 g
A4531,0005	5 g

P. aeruginosa, Salmonella, Staphylococcus aur-

* as % of chymotrypsin activity

α -Chymotrypsin from bovine pancreas Grade II

B

supplied as salt-free, freeze-dried powder

Specification:

Activity min. 1000 Units/mg
Bacterial plate count < 10000 organisms/g
Trypsin * max. 2.5 %

Order-No.	Quantity
A3787,0500	500 mg
A3787,0001	1 g
A3787,0005	5 g

* as % of chymotrypsin activity

Comment: Unit definition: That amount of enzyme that causes a decrease in absorbance at 237 nm of 0.0075 per minute at 25°C resulting from the hydrolysis of ATEE (NF/USP unit).

Chymotrypsinogen A

B

supplied as salt-free, freeze-dried powder
from beef pancreas

$M = \sim 25000$ g/mol
CAS-No.: 9035-75-0
HS-No.: 35040090

Storage: -20°C

Specification:

Native Activity max. 7 Units/mg
Potential Activity min. 1200 Units/mg

Order-No.	Quantity
A3975,0500	500 mg
A3975,0001	1 g
A3975,0005	5 g

Comment: Unit definition: That amount of activated zymogen that causes a decrease in absorbance at 237 nm of 0.0075 per minute at 25°C resulting from the hydrolysis of ATEE (NF/USP unit).

Cichoric acid HPLC grade

B

2,3-Dicaffeoyltartaric acid
from *Echinacea pallida*

$\text{C}_{22}\text{H}_{18}\text{O}_{12}$
 $M = 474.38$ g/mol
CAS-No.: 70831-56-0
HS-No.: 29420000

Storage: $2-8^{\circ}\text{C}$

Specification:

Assay min. 98 %

Order-No.	Quantity
A6749,0010	10 mg
A6749,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

recombinant Human Ciliary Neurotrophic Factor see rHu CNTF Page 218
8-Cinnamoylharpagid see Harpagoside HPLC grade Page 398

Ciprofloxacin BioChemica

B

Decomposition $255 - 257^{\circ}\text{C}$

$\text{C}_{17}\text{H}_{18}\text{FN}_3\text{O}_3$
 $M = 331.34$ g/mol
CAS-No.: 85721-33-1
HS-No.: 29335995

Storage: RT
protected from light

Specification:

Assay 98.0 - 102.0 %
Appearance off-white to yellow-
ish powder
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %

Identity complies
Loss on drying max. 1.0 %
Related subst. complies
Residue on ignition max. 0.1 %
Fluoroquinolonic acid max. 0.2 %

Chloride max. 0.02 %
Sulfate max. 0.04 %

Order-No.	Quantity
A4589,0001	1 g
A4589,0005	5 g

Literature: (1) Bedard, J. & Bryan, L.E. (1989) *Antimicrob. Agents Chemother.* **33**, 1379-1382

(2) Mawhinney, W.M. et al. (1992) *Am. J. Hosp. Pharm.* **49**, 2956-2959

(3) Lindner, B. et al. (2002) *Antimicrob. Agents Chemother.* **46**, 1568-1570

Interaction of the Fluoroquinolone Antimicrobial Agents Ciprofloxacin and Enoxacin with Liposomes.

Stability of ciprofloxacin in peritoneal dialysis solution.

Lack of Interaction of Fluoroquinolones with mit Lipopolysaccharides.

Comment: Ciprofloxacin is a fluoroquinolones and belongs to the group of gyrase inhibitors. The mode of action is identical for all fluoroquinolones. They inhibit topoisomerase II, also known as gyrase, by stably binding to the enzyme. Topoisomerase II folds and twists (supercoiling) the bacterial DNA, allowing for packing the DNA into the bacterial cell. Thus the DNA with an approximate length of 1 mm will be condensed to a length of approx. 0.1 mm. The binding of the fluoroquinolones to topoisomerase II causes many enzymatic reactions, leading to cell death. Fluoroquinolones have been reported to reach their intracellular target, DNA gyrase, in *E. coli* by a simple diffusion through the outer and inner membranes. Ciprofloxacin is active against most of the gram positive and gram negative bacteria, whereas its action against the gram negative is mostly stronger. Ciprofloxacin are known to chelate with several di- and trivalent cations (Ca, Co, Mg, Zn), but it seems that chelation does not contribute to the antibactericidal effect of ciprofloxacin (3).

Treatment of Mycoplasma: Many mycoplasma species have been found to be sensitive to ciprofloxacin, including *A. laidlawii*, *M. orale*, *M. hyorhinis*, *M. fermentans* and *M. arginini*. These species are responsible for most of the contamination in cell culture. At the concentration recommended for use (~ 1 $\mu\text{g/ml}$), no cytotoxic effects have been found (see Myco-3 (Prod. No. A5240), a ready-to-use solution based on ciprofloxacin).

Solubility and Stability: The solubility of ciprofloxacin extremely depends on the pH value. It is almost insoluble in water and alcohol. At pH 4 - 5 it shows the highest solubility (>40 mg/ml). This corresponds to the hydrochloride form of ciprofloxacin, if the pH value is adjusted with hydrochloric acid. Ciprofloxacin is almost insoluble in the neutral pH range, while solubility increases with increasing pH value (approx. 30 mg/ml at pH 11). AppliChem offers a 100X ready-to-use solution (Myco-3; A5240). The stability of the dry substance of ciprofloxacin is very high at room temperature. Solutions in dialysis fluid (25 mg/L) are stable even after 42 days when stored at 37°C (2).

Ciprofloxacin hydrochloride

$\text{C}_{17}\text{H}_{18}\text{FN}_3\text{O}_3 \cdot \text{HCl}$
 $M = 367.84$ g/mol
CAS-No.: 86393-32-0
HS-No.: 29335995

Storage: $2-8^{\circ}\text{C}$

Ciprofloxacin hydrochloride BioChemica

B

Solubility (2 %; H_2O) : clear

Specification:

Assay (HPLC, calc. on dried subst.) powder
..... min. 98 %
Appearance faintly yellowish

Heavy metals (as Pb) max. 0.002 %
Water (K.F.) max. 7 %

Order-No.	Quantity
A7631,0001	1 g
A7631,0005	5 g

Ciprofloxacin hydrochloride pure Ph. Eur.

B

Specification:

Assay (HPLC, calc. on dried subst.)
..... 98.0 - 102.0 %
Appearance faintly yellowish
powder
Appearance of solution complies

Heavy metals (as Pb) max. 0.002 %
Identity complies
Related subst. (HPLC) complies
Sulfated ash max. 0.1 %
pH (2.5 %; H₂O) 3.4 - 4.5

Fluoroquinolonic acid
..... max. 0.2 %
Water (K.F.) max. 6.7 %

Order-No.	Quantity
A4556,0001	1 g
A4556,0005	5 g

Citicoline sodium salt BioChemica

B

CDP-choline, CDP-coline, P⁻-[2-
(Trimethylammonio)ethyl]-ester cytidine
5'-(trihydrogen diphosphate) inner salt,
Cytidine 5'-diphosphocholine sodium
salt

C₁₄H₂₅N₄NaO₁₁P₂
M = 510.32 g/mol
CAS-No.: 987-78-0
HS-No.: 29349990
EC-No.: 251-689-1

Storage: 2-8°C

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.001 %
Chloride max. 0.05 %

Phosphate max. 0.01 %

Order-No.	Quantity
A6607,0250	250 mg
A6607,0001	1 g

Citrate buffer - Solution (1 M) pH 4.00

B

HS-No.: 38220000

Storage: RT

Composition:

Citric acid · H₂O 210.14 g/L

Specification:

pH (20°C; adjusted with NaOH)
..... 4.0 ± 0.1

Order-No.	Quantity
A4781,0500	500 ml
A4781,1000	1 L
A4781,2500	2.5 L

Citreoviridin BioChemica

B

Citreoviridin A
from *Penicillium* sp.

C₂₃H₃₀O₆
M = 412.0 g/mol
CAS-No.: 25425-12-1
HS-No.: 29419000

Storage: -20°C
protected from light

Class / PG: 6.1/II
UN2811
Danger
H315-H361d-H335-H319-H330-H310-
H300
P309+P311-P273-P280



Melting point 110°C

Specification:

Assay (TLC) approx. 97 %
λ_{max} min. 204, 294, 390 nm
Appearance orange - yellow
powder

Solubility (10 mg/ml DMSO)
..... clear, yellowish

Order-No.	Quantity
A8523,0001	1 mg
A8523,0005	5 mg
A8523,0010	10 mg

Comment: Citreoviridin is soluble in Benzene, EtOH, Chloroform, Diethyl ether, Dichloromethane. Citreoviridin is hardly soluble in H₂O (enough to give it yellow color) and Hexane.

Citreoviridin A see Citreoviridin BioChemica Page 213

Citric acid anhydrous powdered



Melting point 153°C
Solubility (20°C) 622 g/L (H₂O)

C₆H₈O₇
M = 192.13 g/mol
CAS-No.: 77-92-9
HS-No.: 29181400
EC-No.: 201-069-1

Storage: RT
LGK: 10 - 13

WGK: 1
Harmful
H319
P305+P351+P338

Citric acid anhydrous powdered Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
Loss on drying max. 0.5 %
Chloride max. 0.001 %

Oxalate max. 0.003 %
Sulfate max. 0.005 %
As max. 0.0001 %
Ba max. 0.001 %

Cu max. 0.0005 %
Fe max. 0.0001 %
Zn max. 0.0005 %

Order-No.	Quantity
A7496,0500	500 g
A7496,1000	1 kg

Citric acid anhydrous powdered, p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Loss on drying max. 0.5 %
Chloride max. 0.001 %
Oxalate max. 0.003 %
Sulfate max. 0.005 %
As max. 0.0001 %
Ba max. 0.001 %

Cu max. 0.0005 %
Fe max. 0.0001 %
Zn max. 0.0005 %

Order-No.	Quantity
A2344,0500	500 g
A2344,1000	1 kg
A2344,10006	6 x 1 kg
A2344,5000	5 kg
A2344,9010	10 kg
A2344,9025	25 kg

Citric acid anhydrous powdered, pure Ph. Eur., USP, BP, E 330

C

Specification:

Assay (titr.) 99.5 - 100.5 %
 Appearance of solution complies
 Behaviour against H₂SO₄ complies
 Heavy metals (as Pb) max. 0.0005 %
 Identity complies
 Organic vol. matter complies
 Sulfated ash max. 0.05 %

Oxalate (als C₂H₂O₄) max. 0.01 %
 Water (K.F.) max. 0.5 %
 Sulfate max. 0.005 %
 As max. 0.0001 %
 Hg max. 0.0001 %
 Pb max. 0.0001 %

Order-No.**Quantity**

A2351,0500 500 g
A2351,1000 1 kg
A2351,10006 6 x 1 kg
A2351,5000 5 kg
A2351,9010 10 kg
A2351,9025 25 kg

Citric acid monohydrate

Melting range 135 - 153°C
 Solubility (25°C) 1630 g/L (H₂O)

C₆H₈O₇·H₂O
 M = 210.14 g/mol
 CAS-No.: 5949-29-1
 HS-No.: 29181400
 EC-No.: 201-069-1

Storage: RT
 LGK: 10 - 13

WGK: 1
 Warning
 H319
 P305+P351+P338

**Citric acid monohydrate Molecular biology grade**

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99.5 %
 Chloride max. 0.005 %
 Oxalate max. 0.05 %

Sulfate max. 0.005 %
 Ba max. 0.005 %
 Ca max. 0.001 %
 Cu max. 0.0005 %

Fe max. 0.001 %
 Pb max. 0.0005 %

Order-No.**Quantity**

A6288,0250 250 g
A6288,0500 500 g
A6288,1000 1 kg

Citric acid monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99.5 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 Chloride max. 0.005 %
 Oxalate max. 0.05 %

Sulfate max. 0.005 %

A (1 cm/0.1 M in H₂O)
 260 nm max. 0.05
 280 nm max. 0.05

Order-No.**Quantity**

A3648,0500 500 g
A3648,1000 1 kg
A3648,5000 5 kg

Citric acid monohydrate p. A.

C

Specification:

Assay (titr.) min. 99.5 %
 Chloride max. 0.005 %
 Oxalate max. 0.05 %
 Sulfate max. 0.005 %
 Ba max. 0.005 %
 Ca max. 0.001 %
 Cu max. 0.0005 %

Fe max. 0.001 %
 Pb max. 0.0005 %

Order-No.**Quantity**

A2337,0500 500 g
A2337,1000 1 kg
A2337,10006 6 x 1 kg
A2337,5000 5 kg
A2337,9010 10 kg
A2337,9025 25 kg

Citric acid monohydrate Buffer grade

B

Specification:

Assay (titr.) min. 99.5 %
 Chloride max. 0.01 %
 Oxalate max. 0.05 %
 Sulfate max. 0.05 %

Cu max. 0.001 %
 Fe max. 0.005 %
 Pb max. 0.001 %

Order-No.**Quantity**

A1350,1000 1 kg
A1350,5000 5 kg
A1350,9010 10 kg

Citric acid monohydrate pure Ph. Eur., BP, USP, Food grade

C

Specification:

Assay (titr.) 99.5 - 100.5 %
 Appearance of solution complies
 Behaviour against H₂SO₄ complies
 Heavy metals (as Pb) max. 0.0005 %
 Identity (IR) complies
 Organic vol. impurities complies

Readily carbon. subst. complies
 Sulfated ash max. 0.05 %
 Water (K.F.) 7.5 - 8.8 %
 Oxalate (as C₂H₂O₄) max. 0.01 %
 Sulfate max. 0.015 %
 As max. 0.0001 %

Hg max. 0.0001 %
 Pb max. 0.0001 %

Order-No.**Quantity**

A4212,1000 1 kg
A4212,10006 6 x 1 kg
A4212,5000 5 kg
A4212,9010 10 kg
A4212,9025 25 kg

Citric acid monohydrate for synthesis

C

Specification:

Assay (titr.) min. 98 %

Order-No.**Quantity**

A1414,1000 1 kg
A1414,10006 6 x 1 kg
A1414,5000 5 kg
A1414,9010 10 kg
A1414,9025 25 kg

Citric acid monohydrate Technical grade

C

Specification:

Assay (titr.) approx. 97 %

Order-No.**Quantity**

A1572,5000 5 kg
A1572,9010 10 kg
A1572,9025 25 kg

Citric acid - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: 1

Citric acid - Solution 50 % Technical grade

Decalcifying Solution

Warning
H319
P262



Composition:

Citric acid (A1572) 500 g/L

Order-No.	Quantity
A4423,5000	5 L
A4423,9010	10 L
A4423,9025	25 L

Citric acid - Solution 10 % pure with antibacterial additive

Decalcifying Solution

Composition:

Citric acid (A4212) 100 g/L

Order-No.	Quantity
A4214,5000	5 L
A4214,9010	10 L
A4214,9025	25 L

Citric acid iron(III) salt see Iron(III) citrate hydrate Page 460

Citric acid magnesium salt see Magnesium citrate pure Page 505

Citric acid monosodium salt see *mono*-Sodium citrate pure Page 728

Citric acid triethyl ester see Triethyl citrate pure Ph. Eur., NF Page 833

Citric acid tripotassium salt see *tri*-Potassium citrate monohydrate pure Ph. Eur., BP, USP, Food grade Page 641

Citric acid trisodium salt dihydrate see *tri*-Sodium citrate dihydrate Page 728

Citrinin BioChemica

Antimycin
from *Penicillium citrinum*

C₁₃H₁₄O₅
M = 250.25 g/mol
CAS-No.: 518-75-2
HS-No.: 29419000
EC-No.: 208-257-2

Storage: -20°C
protected from light

Class / PG: 6.1/III
UN3462
Danger
H351-H331-H330-H311
P280-P310-P260-P284



Specification:

Assay min. 99 %

Order-No.	Quantity
A7630,0005	5 mg
A7630,0025	25 mg

Literature: (1) Haraguchi, H. *et al.* (1989) *Agric. Biol. Chem.* **53**, 1741-1742
(2) Shimizu, T. *et al.* (2005) *Appl. Environ. Microbiol.* **71**, 3453-3457

Citrinin, an Electron Acceptor Having Antifungal Activity.
Polyketide Synthase Gene responsible for Citrinin Biosynthesis in *Monascus purpureus*.

Comment: Citrinin is a mycotoxin of the "polyketide" group, produced by the mould *Penicillium citrinum* and other *Penicillium* and *Aspergillus* species. It is a compound that has almost the strongest nephrotoxic activity among mycotoxins in mammals and since it mostly contaminates grains, the uptake with food has to be avoided. Most of the gram positive and some gram negative bacteria are sensitive for the bactericidal action, especially at low pH values. The effects on the target organisms are versatile. Beside the inhibition of DNA synthesis in bacteria, yeast and e.g. hepatoma cells, the cholesterol, fatty acid synthesis, and the cellular respiration are affected as well. It seems that Citrinin acts as an electron acceptor (1). Mutagenic and carcinogenic effects are known.

Solubility: Citrinin is a strong acid and almost insoluble in water. It is soluble in alcohol and diluted alkali. Solutions change their color when the pH changes from yellow (pH 4.6) to red (pH 9.9; Merck Index 13, Ed. 2001, page 406 monograph 2351).

Citrovorum factor see Folinic acid calcium salt pentahydrate Page 355

L-Citrulline

(S)-2-Amino-5-ureidopentanoic acid, L-
2-Amino-5-ureidovaleric acid

C₆H₁₃N₃O₃
M = 175.19 g/mol
CAS-No.: 372-75-8
HS-No.: 29241900
EC-No.: 206-759-6

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: nwg

L-Citrulline BioChemica

Specification:

Assay min. 99 %
α 20°C/D; 8 %, 22 % HCl +24.5° - +26.5°
Foreign amino acids max. 0.5 %
Heavy metals (as Pb) max. 0.001 %

Identity (IR) complies
Ammonium max. 0.01 %

Order-No.	Quantity
A5256,0010	10 g
A5256,0025	25 g
A5256,0100	100 g

L-Citrulline pure DAC

Specification:

Assay (titr) 99.0 - 101.0 %
Appearance complies
Identity (IR) complies
Loss on drying max. 0.3 %
Odor complies

Related subst. max. 0.3 %
Solubility complies
Sulfated ash max. 0.1 %
pH (5 %; H₂O) 5.0 - 6.5
Acetic acid max. 0.5 %

Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.02 %
Fe max. 0.001 %

Order-No.	Quantity
A5270,0025	25 g
A5270,0100	100 g
A5270,0250	250 g

CK-2 see Creatine Kinase MB Fraction, human Page 245
CK-BB see Creatine Kinase BB Fraction, human Page 245
CK-MB see Creatine Kinase MB Fraction, human Page 245
CK-MM see Creatine Kinase MM Fraction, human Page 245
Claforan see Cefotaxime sodium salt BioChemica Page 190
Clavacin see Patulin BioChemica Page 593
Claviformin see Patulin BioChemica Page 593

Cleaning agents (deconex®)

deconex® 11 UNIVERSAL

liquid, mild alkaline concentrate for cleaning
of laboratory instruments

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

Class / PG: 8/III
UN1814
WGK: 1
Danger
H314
P280-P313-P262-P305+P351+P338

Order-No.	Quantity
A3547,5000	5 L
A3547,9010	10 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 15 PF

phosphate free, mild alkaline liquid special
cleaning agent for manual laboratory cleaning

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

Class / PG: 8/III
UN1814
WGK: 2
Danger
H314
P305+P351+P338-P262-P313-P280

Order-No.	Quantity
A2490,5000	5 L
A2490,9010	10 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 21 CLF

chlorine- and tenside-free, mild alkaline,
liquid special main cleansing agent for
laboratory dish washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

WGK: 1
Warning
H315-H319
P280-P305+P351+P338-P262-P313

Order-No.	Quantity
A2481,5000	5 L
A2481,9010	10 L
A2481,9025	25 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 21 SOLID

chlorine- and tenside-free, mild alkaline,
powdered special main cleansing agent for
laboratory dish washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

WGK: 1
Danger
H314
P305+P351+P338-P313-P280-P262

Order-No.	Quantity
A0461,5000	5 kg
A0461,9010	10 kg

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

Comment: Dosage: Essentially optimal dosing depends on water hardness and kind of pollution. Generally the use of demineralized water improves cleaning efficiency.
With demineralized water you need 2-3 g/L, with hard water 3-5 g/L. At a temperature of 60°C the cleaning time will be 2-5 minutes.
Suitable for aluminium, ceramic, plastics, rubber, steel and latex.

deconex® 22 LIQ

chlorine-, phosphate- and tenside-free,
alkaline, liquid special main cleansing agent
for laboratory dish washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

Class / PG: 8/II
UN1814
WGK: 1
Danger
H314
P262-P305+P351+P338-P280-P313

Order-No.	Quantity
A3565,5000	5 L
A3565,9010	10 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 22 PF

chlorine-, phosphate- and tenside-free,
alkaline, powdered special main cleansing
agent for laboratory dish washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

Class / PG: 8/II
UN1823
WGK: 2
Danger
H314-H335
P305+P351+P338-P262-P313-P280



C

Order-No.	Quantity
A3591,5000	5 kg
A3591,9010	10 kg

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 24 FORTE

tenside-free, strong alkaline, disinfecting
(active chlorine), powdered special main
cleansing agent for laboratory dish washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

Class / PG: 8/II
UN1823
WGK: 1
Danger
H410-H314-H335
P313-P273-P280-P262-
P305+P351+P338



C

Order-No.	Quantity
A3607,5000	5 kg
A3607,9010	10 kg

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 24 LIQ

tenside-free, strong alkaline, disinfecting
(active chlorine), liquid special main
cleansing agent for laboratory dish washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

Class / PG: 8/II
UN1814
WGK: 1
Danger
H314
P280-P305+P351+P338-P262-P313



C

Order-No.	Quantity
A3580,5000	5 L
A3580,9010	10 L
A3580,9025	25 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 25 ORGANACID

phosphate- and tenside-free, weak acidic,
liquid neutralisation agent for laboratory dish
washers

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

WGK: 1
Warning
H319
P305+P351+P338-P280-P313-P262



C

Order-No.	Quantity
A3545,5000	5 L
A3545,9010	10 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

deconex® 26 MINERALACID

tenside-free, acidic, liquid neutralisation
agent for laboratory dish washer

HS-No.: 34022090

Storage: RT
LGK: 8 B
Disposal: 30

WGK: 1
Warning
H315-H319
P262-P313-P280-P305+P351+P338



C

Order-No.	Quantity
A3555,5000	5 L
A3555,9010	10 L

* deconex is a trademark of Borer Chemie AG Zuchwil, Switzerland

CLED Agar

C

Bromothymol blue Lactose Cystine Agar

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Bromothymol blue 0.02 g/L
L-Cystine 0.128 g/L
Lactose 10.0 g/L
Peptones 11.9 g/L

Specification:

pH before autoclaving . . . approx. 7.3 (20°C)

Order-No.
A5694,0500
A5694,5000

Quantity
500 g
5 kg

Literature: (1) Mackey *et al.* (1966) *Br. Med. J.* **1**, 1173

Comment: This differentiating medium is suitable for the isolation, enumeration and identification of microorganisms from urine.

Directions: Suspend 37 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Cleland's Reagent see DTT Page 310

Cleocin see Clindamycin hydrochloride *BioChemica* Page 218

Clindamycin hydrochloride *BioChemica*

B

(7S)-7-Chloro-7-deoxylincomycin
hydrochloride, *Cleocin*

$C_{18}H_{33}ClN_2O_5S \cdot HCl$
 $M = 461.44$ g/mol
CAS-No.: 21462-39-5
HS-No.: 29419000
EC-No.: 244-398-6

Storage: 2-8°C

Specification:

Assay min. 95 %
Solubility (5 %; H_2O) clear, colorless
Water (K.F.) max. 6 %

Order-No.
A7684,0500
A7684,0001
A7684,0005

Quantity
500 mg
1 g
5 g

CLZN-h see Coelenterazine H *BioChemica* Page 220

CMP disodium salt see Cytidine 5'-monophosphoric acid disodium salt hydrate *BioChemica* Page 256

4CN see 4-Chloro-1-naphthol *BioChemica* Page 206

Cnicin HPLC grade

B

from *Cnicus benedictus*

$C_{20}H_{26}O_7$
 $M = 378.42$ g/mol
CAS-No.: 24394-09-0
HS-No.: 29420000

Storage: 2-8°C

Warning

H315-H332-H319-H302
P262-P301+P310-P261-
P305+P351+P338



Specification:

Assay min. 98 %

Order-No.
A7871,0010
A7871,0020

Quantity
10 mg
20 mg

Comment: Documents included: HPLC-DAD with UV spectrum

rHu CNTF



B

recombinant Human Ciliary
Neurotrophic Factor

$M = 22.71$ kDa
HS-No.: 29371900

Storage: -20°C

lyophilized from a sterile concentrated
solution (1 mg/ml) with 5 mM sodium
phosphate buffer, pH 7.5 and 5 mM
NaCl
from *E. coli*

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.
A8302,0005
A8302,0020
A8302,0100

Quantity
5 µg
20 µg
100 µg

Comment: A neurotrophic factor that promotes the survival of various neuronal cell types and may play an important role in the injury response in the nervous system. CNTF, like aFGF, bFGF, and PD-ECGF (platelet-derived endothelial cell growth factor), does not possess a signal sequence that would allow secretion of the factor by classical secretion pathways (endoplasmic reticulum/Golgi system). The mechanism underlying the release of CNTF is unknown. Recombinant Human CNTF produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 199 amino acids and having a molecular mass of 22.71 kDa.

CoA - Li_3 dihydrate see Coenzyme A trilithium salt dihydrate *BioChemica* Page 221

CoA-SH see Coenzyme A free acid *BioChemica* Page 221

Coating buffer for immunoassays (carbonate-based) see Immunoassay Buffer Page 446

Coating buffer for immunoassays (PBS-based) see Immunoassay Buffer Page 446

Cobalthexammine trichloride see Hexamminecobalt(III) chloride Molecular biology grade Page 405

Cobalt(II) acetate tetrahydrate

Acetic acid cobalt(II) salt

CoC₄H₈O₄ · 4H₂O
M = 249.08 g/mol
CAS-No.: 6147-53-1
HS-No.: 29152900
EC-No.: 200-755-8

Storage: RT
LGK: 10-13
Disposal: 15

Class / PG: 9/III
UN3077
WGK: 3
Danger
H334-H350i-H410-H317-H341-H360F
P308+P313-P342+P311-P273-
P304+P341-P281-P201



Melting point 140°C
Solubility (25°C) 380 g/L (H₂O)

Cobalt(II) acetate tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %	Fe max. 0.005 %
pH (5 %; H ₂ O) 5.5 - 8.0	Ni max. 0.1 %
Chloride max. 0.001 %	Pb max. 0.001 %
Sulfate max. 0.005 %	Zn max. 0.001 %

Order-No.	Quantity
A1875,0025	25 g
A1875,0100	100 g
A1875,0250	250 g

Cobalt(II) acetate tetrahydrate pure

C

Specification:

Assay (titr.) min. 99 %
Chloride max. 0.005 %
Sulfate max. 0.01 %
Fe max. 0.01 %
Ni max. 0.1 %

Order-No.	Quantity
A5604,0100	100 g
A5604,0250	250 g
A5604,0500	500 g
A5604,1000	1 kg
A5604,10006	6 x 1 kg

Cobalt(II) chloride hexahydrate

CoCl₂ · 6H₂O

Cl₂Co · 6H₂O
M = 237.93 g/mol
CAS-No.: 7791-13-1
HS-No.: 28273930
EC-No.: 231-589-4

Storage: RT
LGK: 6.1 B
Disposal: 15

Class / PG: 9/III
UN3077
WGK: 3
Danger
H341-H350i-H317-H302-H360F-H410-
H334
P273-P304+P341-P201-P281-
P308+P313



Melting point 56°C
Solubility (20°C) 76 g/L (H₂O)

Cobalt(II) chloride hexahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %	Cu max. 0.0005 %
Nitrate max. 0.01 %	Fe max. 0.001 %
Sulfate max. 0.005 %	Pb max. 0.0005 %

Order-No.	Quantity
A1033,0025	25 g
A1033,0100	100 g

Cobalt(II) chloride hexahydrate pure

C

Specification:

Assay (titr.) min. 97 %	Pb max. 0.005 %
Sulfate max. 0.01 %	
Cu max. 0.01 %	
Fe max. 0.005 %	

Order-No.	Quantity
A1358,0025	25 g
A1358,0100	100 g
A1358,0250	250 g

Cobalt(II) sulfamate - Solution 10 - 15 % pure

C

HS-No.: 38220000

Storage: RT

Class / PG: 6.1/III
UN3287
Warning
H351-H317
P262-P280



Specification:

Assay 10 - 15 %	Zn max. 0.0001 %
Fe max. 0.002 %	
Ni max. 0.005 %	
Pb max. 0.0005 %	

Order-No.	Quantity
A4763,2500	2.5 L
A4763,5000	5 L
A4763,9010	10 L

Cobalt(II) sulfate heptahydrate pure

C

Cobaltvitriol, Cobaltous sulfate

CoSO₄ · 7H₂O
M = 281.10 g/mol
CAS-No.: 10026-24-1
HS-No.: 28332930
EC-No.: 233-334-2

Storage: RT
LGK: 6.1 B
Disposal: 15

Class / PG: 9/III
UN3077
WGK: 3
Danger
H350i-H341-H334-H302-H317-H410-
H360F
P281-P302+P352-P201-P308+P313-
P304+P341



Specification:

Assay (titr.) min. 98 %
Chloride max. 0.02 %
Fe max. 0.005 %
Pb max. 0.005 %

Order-No.	Quantity
A4825,0100	100 g
A4825,0250	250 g
A4825,0500	500 g
A4825,1000	1 kg
A4825,10006	6 x 1 kg

Cobaltous sulfate see Cobalt(II) sulfate heptahydrate pure Page 220

Cobaltvitriol see Cobalt(II) sulfate heptahydrate pure Page 220

Cocarcboxylase see Thiamine pyrophosphate Page 811

Cochenille red A see Cochenille Red (C.I. 16255) Page 220

Cochenille Red (C.I. 16255)

B

Cochenille red A, Acid Red 18, Ponceau 4R, Cochineal, Neucoccin

C₂₀H₁₁N₂Na₃O₁₀S₃
M = 604.46 g/mol
CAS-No.: 2611-82-7
HS-No.: 32041200
EC-No.: 220-036-2

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 75 %
λ_{max} 506 - 510 nm
pH (1 %; H₂O; 20°C) 7.0 - 10.0

Order-No.	Quantity
A4291,0010	10 g
A4291,0025	25 g

Cochineal see Cochenille Red (C.I. 16255) Page 220

CoCl₂ · 6H₂O see Cobalt(II) chloride hexahydrate Page 219

Coelenterazine BioChemica

B

C₂₆H₂₁N₃O₃
M = 423.47 g/mol
CAS-No.: 55779-48-1
HS-No.: 32129000

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay (TLC) min. 90 %
λ_{max} 1 430 nm
λ_{max} 2 263 nm

Order-No.	Quantity
A2817,0001	1 mg

Literature: (1) Nakajima-Shimada, J. et al. (1991) *Proc. Natl. Acad. Sci. USA* **88**, 6878-6882

(2) Rizzuto, R. et al. (1992) *Nature* **358**, 325-327

(3) Lucas, M. & Solano, F. (1992) *Anal. Biochem.* **206**, 273-277

(4) Sheu, Y.-A. et al. (1993) *Anal. Biochem.* **209**, 343-347

(5) Button, D. & Brownstein, M. (1993) *Cell Calcium* **14**, 663-671

Monitoring of intracellular Calcium in *S. cerevisiae* with aequorin. Changes in mitochondrial Calcium with special recombinant aequorin. Coelenterazine is a superoxide-anion-sensitive chemiluminescent probe. Measurement of intracellular Calcium with bioluminescence (aequorin expressed in human cells. Aequorin-expressing mammalian cell lines for measuring calcium-mobilization.

Coelenterazine H BioChemica

B

2,8-Dibenzyl-6-(p-hydroxyphenyl)-imidazo[1,2-a]pyrazine-3-(7H)-one, 2-(Dehydroxy)-coelenterazine, Benzyl coelenterazine, CLZN-h

C₂₆H₂₁N₃O₂
M = 407.48 g/mol
CAS-No.: 50909-86-9
HS-No.: 29349990

Storage: -20°C

Warning
H315-H335-H319
P305+P351+P338



Melting point 132 - 136°C

Specification:

λ_{max} (MeOH) 431 - 435 nm
Appearance of solution (0.1 %, MeOH) clear, yellow

Order-No.	Quantity
A7508,0001	1 mg

Literature: (1) Hampf, M. & Gossen, M. (2006) *Anal. Biochem.* **356**, 94-99

A protocol for combined *Photinus* and *Renilla* luciferase quantification compatible with protein assays.

Comment: Luciferase is one of the most popular reporter assays systems in gene expression. Of this class, the most widely used enzymes originate from *Photinus pyralis* (Pluc), the American firefly, and from the jellyfish *Renilla reniformis* (Rluc), respectively. Both enzymes show the ideal characteristics of a reporter enzyme, i.e. (I) extreme sensitive, (II) no cellular background in most systems, (III) linear activity over a wide range, and (IV) the assays are easy to perform and cost-effective. The possibility to co-express both enzymes in the same cell, allow to standardize transfection experiments or to determine two transcription signals within the same cell. The activity of Pluc has to be determined first, then Rluc activity is measured. Under the assay conditions required for Rluc, Pluc is inactive. The activity of Pluc will be quenched by APMBT (2-(4-Aminophenyl)-6-methylbenzothiazole). Unfortunately, the standard lysis buffer systems do not allow to perform the known protein determination procedures from cell lysates. In their publication "A protocol for combined *Photinus* and *Renilla* luciferase quantification compatible with protein assays", Hampf and Gossen solve this problem (1).

Coenzyme A free acid *BioChemica*

B

CoA-SH
lyophilized

$C_{21}H_{36}N_7O_{16}P_3S$
 $M = 767.54$ g/mol
CAS-No.: 85-61-0
HS-No.: 29349990
EC-No.: 201-619-0

Storage: -20°C
LGK: 10 - 13

Specification:
Assay (enzym.) min. 75 %

Order-No.	Quantity
A0812,0005	5 mg
A0812,0010	10 mg
A0812,0025	25 mg

Literature: (1) Chibata, I. *et al.* (1974) *Methods Enzymol.* **34**, 267-271
(2) Langer, M. *et al.* (1996) *Anal. Biochem.* **243**, 150-153

Immobilized Coenzym A for affinity chromatography of enzymes.
A non-radioactive assay for ribosome-inactivating proteins.

Comment: Coenzym A can bind acetate (Acetyl-CoA) or other carboxylic acids in an energy-rich binding. It is cofactor of many enzyme-catalysed acetylations, e. g. in the citrate cycle (Krebs cycle). For improving the sensitivity of the luciferase assay, it is added to the assay buffer at a concentration of 270 µM (2).

Coenzyme A trilithium salt dihydrate *BioChemica*

B

CoA - Li_3 dihydrate

$C_{21}H_{33}Li_3N_7O_{16}P_3S \cdot 2H_2O$
 $M = 821.40$ g/mol
CAS-No.: 18439-24-2
HS-No.: 29349990
EC-No.: 242-317-9

Storage: -20°C
LGK: 10 - 13

Specification:
Assay (enzym.) min. 95 %

Order-No.	Quantity
A0813,0010	10 mg
A0813,0050	50 mg
A0813,0100	100 mg

Coenzyme Q₁₀ *BioChemica*

B

Ubiquinone-50

$C_{59}H_{90}O_4$
 $M = 863.4$ g/mol
CAS-No.: 303-98-0
HS-No.: 29146990
EC-No.: 206-147-9

Storage: -20°C

Specification:
Assay 97 - 103 %
IR spectrum complies
Related subst. max. 1 %
Sulfated ash max. 0.1 %

Order-No.	Quantity
A5069,0010	10 mg
A5069,0050	50 mg
A5069,0100	100 mg

Coffee see Caffeine, bean-like shape Page 176
Colamine see Ethanolamine *BioChemica* Page 337
Colcemide see Demecolcine *BioChemica* Page 262

Colchicine *BioChemica*

B

$C_{22}H_{25}NO_6$
 $M = 399.45$ g/mol
CAS-No.: 64-86-8
HS-No.: 29399900
EC-No.: 200-598-5

Storage: RT
LGK: 10 - 13

Class / PG: 6.1/1
UN1544
WGK: 3
Danger
H300-H340
P309+P311



Specification:
Assay min. 98 %
Sulfated ash max. 0.05 %
Water (K.F.) max. 3 %

Order-No.	Quantity
A4082,0250	250 mg
A4082,0001	1 g
A4082,0005	5 g

Colistin sulfate *BioChemica*

B

Polymyxin E₁ disulfate

$C_{53}H_{104}N_{18}O_{21}S_2$
 $M = 1365.64$ g/mol
CAS-No.: 1264-72-8
HS-No.: 29419000

Storage: RT
protected from light
LGK: 10 - 13
Disposal: 3

Danger
H301
P301+P310



Specification:
Assay (HPLC) min. 85 %
Loss on drying max. 3.5 %
pH (1 %; H₂O) 4.0 - 6.0
Sulfate 16 - 18 %

Order-No.	Quantity
A2922,0100	100 mg
A2922,0250	250 mg
A2922,0001	1 g

Comment: Colistin was isolated from filtrates of *Bacillus colistinus* and is identical to Polymyxin E. It is a cyclic pentapeptide with a pentapeptide side chain. Colistin is active only against proliferating and non-proliferating gram negative organism. It interacts with phospholipids of the cytoplasmic membrane of bacteria and permeabilizes them. The efflux of essential components explains its bactericidal activity on non-proliferating organisms. The bactericidal activity will be reduced by divalent ions (Fe²⁺, Mn²⁺, Ca²⁺, Mg²⁺), unsaturated fatty acids and polyphosphates.

Stability: A high stability is observed at pH values between 2 and 6. At pH values above 6.0, a slow inactivation occurs (pH 9, 24 hours, 50 % inactivation). At pH 2, only 1 % will be inactivated within 24 hours. Solutions with a concentration of 10 mg/ml are stable at +4°C for more than 10 - 14 days.

Colorado 700 - 849 nm (green spectrum)

Colorado 830 C - Triazine

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{51}H_{49}Cl_2IN_6S$
 $M = 975.85$ g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 90 %
 ϵ $250,000\text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) .. 826 nm
Emission λ_{max} (MeOH) 866 nm

Identity (NMR) complies

Order-No.	Quantity
A8761,0001	1 mg
A8761,0005	5 mg
A8761,0010	10 mg

Colorado 830 C - Acid

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{53}H_{56}IN_3O_5S$
 $M = 942.00$ g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 95 %
 ϵ $250,000\text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) .. 827 nm
Emission λ_{max} (MeOH) 867 nm

Identity (NMR) complies

Order-No.	Quantity
A8785,0001	1 mg
A8785,0005	5 mg
A8785,0010	10 mg

Colorado 830 C - NHS ester

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{57}H_{59}IN_4O_5S$
 $M = 1039.07$ g/mol
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

Specification:

Assay min. 95 %
 ϵ $250,000\text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) .. 827 nm
Emission λ_{max} (MeOH) 867 nm

Identity (NMR) complies

Order-No.	Quantity
A8721,0001	1 mg
A8721,0005	5 mg
A8721,0010	10 mg

Colorado 830 C - Amine

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{48}H_{50}IN_3S$
 $M = 827.90$ g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 90 %
 ϵ $250,000\text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) .. 826 nm
Emission λ_{max} (MeOH) 866 nm

Identity (NMR) complies

Order-No.	Quantity
A8673,0001	1 mg
A8673,0005	5 mg
A8673,0010	10 mg

Colorado 830 A - Triazine

B

Solubility soluble in H₂O, MeOH, DMSO, DMF

$C_{51}H_{47}Cl_2Na_6NaO_6S_3$
 $M = 1030.05$ g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 95 %
 ϵ $200,000\text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) .. 825 nm
Emission λ_{max} (MeOH) 850 nm

Identity (NMR) complies

Order-No.	Quantity
A8817,0001	1 mg
A8817,0005	5 mg
A8817,0010	10 mg

Colorado 830 A - Acid

B

Solubility soluble in H₂O, MeOH, DMSO, DMF

$C_{53}H_{54}N_3NaO_9S_3$
 $M = 996.20$ g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 90 %
 ϵ $200,000\text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) .. 826 nm
Emission λ_{max} (MeOH) 851 nm

Identity (NMR) complies

Order-No.	Quantity
A8849,0001	1 mg
A8849,0005	5 mg
A8849,0010	10 mg

Colorada 830 A - NHS ester

B

Solubility soluble in H₂O,
MeOH, DMSO,
DMF

$C_{57}H_{57}N_4NaO_{11}S_3$
 $M = 1093.27 \text{ g/mol}$
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

Specification:

Assay min. 95 %
Identity (NMR) complies

ϵ 200,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 826 nm
Emission λ_{max} (MeOH) 851 nm

Order-No.
A8833,0001 1 mg
A8833,0005 5 mg
A8833,0010 10 mg

Colorada 830 A - Amine

B

Solubility soluble in H₂O,
MeOH, DMSO,
DMF

$C_{48}H_{48}N_3NaO_6S_3$
 $M = 882.10 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 95 %
Identity (NMR) complies

ϵ 200,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 825 nm
Emission λ_{max} (MeOH) 850 nm

Order-No.
A8801,0001 1 mg
A8801,0005 5 mg
A8801,0010 10 mg

Colorada 800 C - Triazine

B

Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

$C_{51}H_{49}Cl_2IN_6O$
 $M = 959.78 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 95 %
Identity (NMR) complies

ϵ 250,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 801 nm
Emission λ_{max} (MeOH) 826 nm

Order-No.
A8717,0001 1 mg
A8717,0005 5 mg
A8717,0010 10 mg

Colorada 800 C - Acid

B

Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

$C_{53}H_{56}IN_3O_4$
 $M = 925.93 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 98 %
Identity (NMR) complies

ϵ 250,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 802 nm
Emission λ_{max} (MeOH) 840 nm

Order-No.
A8757,0001 1 mg
A8757,0005 5 mg
A8757,0010 10 mg

Colorada 800 C - NHS

B

Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

$C_{57}H_{59}IN_4O_6$
 $M = 1023.01 \text{ g/mol}$
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

Specification:

Assay min. 95 %
Identity (NMR) complies

ϵ 250,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 802 nm
Emission λ_{max} (MeOH) 840 nm

Order-No.
A8669,0001 1 mg
A8669,0005 5 mg
A8669,0010 10 mg

Colorada 800 C - Amine

B

Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

$C_{48}H_{50}IN_3O$
 $M = 811.83 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

Specification:

Assay min. 95 %
Identity (NMR) complies

ϵ 250,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 800 nm
Emission λ_{max} (MeOH) 836 nm

Order-No.
A8781,0001 1 mg
A8781,0005 5 mg
A8781,0010 10 mg

Colorada 800 A - Triazine



Solubility soluble in H₂O,
MeOH, DMSO,
DMF

C₅₁H₄₇Cl₂N₃NaO₇S₂
M = 1013.98 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
ε 200,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 800 nm
Emission λ_{max} (MeOH) 825 nm

Identity (NMR) complies

Order-No.

A8845,0001

Quantity

1 mg

A8845,0005

5 mg

A8845,0010

5 mg

Colorada 800 A - Acid

Solubility soluble in H₂O,
MeOH, DMSO,
DMF

C₅₃H₅₄N₃NaO₁₀S₂
M = 980.13 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 90 %
ε 200,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 802 nm
Emission λ_{max} (MeOH) 847 nm

Identity (NMR) complies

Order-No.

A8813,0001

Quantity

1 mg

A8813,0005

5 mg

A8813,0010

10 mg

Colorada 800 A - NHS ester



Solubility soluble in H₂O,
MeOH, DMSO,
DMF

C₅₇H₅₇N₄NaO₁₂S₂
M = 1077.20 g/mol
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

B

Specification:

Assay min. 90 %
ε 200,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 802 nm
Emission λ_{max} (MeOH) 847 nm

Identity (NMR) complies

Order-No.

A8797,0001

Quantity

1 mg

A8797,0005

5 mg

A8797,0010

10 mg

Colorada 800 A - Amine



Solubility soluble in H₂O,
MeOH, DMSO,
DMF

C₄₈H₄₈N₃NaO₇S₂
M = 866.03 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
ε 200,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 800 nm
Emission λ_{max} (MeOH) 825 nm

Identity (NMR) complies

Order-No.

A8829,0001

Quantity

1 mg

A8829,0005

5 mg

A8829,0010

10 mg

Colorada 770 C - Triazine



Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

C₄₃H₄₅Cl₂IN₃O
M = 859.67 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
ε (MeOH) 270,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 766 nm
Emission λ_{max} (MeOH) 785 nm

Identity (NMR) complies

Order-No.

A8777,0001

Quantity

1 mg

A8777,0005

5 mg

A8777,0010

5 mg

Colorada 770 C - Acid



Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

C₄₅H₅₂IN₃O₄
M = 825.82 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
ε 270,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 768 nm
Emission λ_{max} (MeOH) 790 nm

Identity (NMR) complies

Order-No.

A8665,0001

Quantity

1 mg

A8665,0005

5 mg

A8665,0010

10 mg

Colorada 770 C - NHS ester



Solubility soluble in Dichloro-
methane,
MeOH, DMSO,
DMF, Acetonitrile

C₄₉H₅₅IN₄O₆
M = 922.89 g/mol
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

B

Specification:

Assay min. 95 %
ε 270,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) 768 nm
Emission λ_{max} (MeOH) 790 nm

Identity (NMR) complies

Order-No.

A8713,0001

Quantity

1 mg

A8713,0005

5 mg

A8713,0010

10 mg

Colorada 770 C - Amine

NEW

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{40}H_{46}IN_3O$
 $M = 711.72 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $270,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 763 nm
 Emission λ_{max} (MeOH) 785 nm

Identity (NMR) complies

Order-No.	Quantity
A8753,0001	1 mg
A8753,0005	5 mg
A8753,0010	10 mg

Colorada 770 A - Triazine

NEW

Solubility soluble in H₂O, MeOH, DMSO, DMF

$C_{43}H_{43}Cl_2N_6NaO_7S_2$
 $M = 913.86 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ $200,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 771 nm
 Emission λ_{max} (MeOH) 791 nm

Identity (NMR) complies

Order-No.	Quantity
A8825,0001	1 mg
A8825,0005	5 mg
A8825,0010	10 mg

Colorada 770 A - Acid

NEW

Solubility soluble in H₂O, MeOH, DMSO, DMF

$C_{49}H_{50}N_3NaO_{10}S_2$
 $M = 880.01 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 98 %
 ϵ $200,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 772 nm
 Emission λ_{max} (MeOH) 807 nm

Identity (NMR) complies

Order-No.	Quantity
A8793,0001	1 mg
A8793,0005	5 mg
A8793,0010	10 mg

Colorada 770 A - NHS

NEW

Solubility soluble in H₂O, MeOH, DMSO, DMF

$C_{49}H_{53}N_4NaO_{12}S_2$
 $M = 977.08 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

B

Specification:

Assay min. 95 %
 ϵ $200,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 772 nm
 Emission λ_{max} (MeOH) 807 nm

Identity (NMR) complies

Order-No.	Quantity
A8809,0001	1 mg
A8809,0005	5 mg
A8809,0010	10 mg

Colorada 770 A - Amine

NEW

Solubility soluble in H₂O, MeOH, DMSO, DMF

$C_{40}H_{44}N_3NaO_7S_2$
 $M = 765.91 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ $200,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 771 nm
 Emission λ_{max} (MeOH) 807 nm

Identity (NMR) complies

Order-No.	Quantity
A8841,0001	1 mg
A8841,0005	5 mg
A8841,0010	10 mg

Colorada 600 - 699 nm (blue spectrum)

Colorada 690 LSS Z - NHS ester

NEW

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{46}H_{56}N_4O_8S$
 $M = 825.02 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $90,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 688 nm
 Emission λ_{max} (MeOH) 793 nm

Identity (NMR) complies

Order-No.	Quantity
A8349,0001	1 mg
A8349,0005	5 mg
A8349,0010	10 mg

Colorada 678 Z - Acid



B

2-((1E,3E,5E)-5-(3-(5-Carboxypentyl)-1,1-dimethyl-1H-benzo[e]indol-2(3H)-ylidene)penta-1,3-dienyl)-3-ethyl-1,1-dimethyl-1H-benzo[e]indolium-6-sulfonate

$C_{41}H_{44}N_2O_5S$
 $M = 676.86$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Solubility soluble in
 Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) 195,000 $M^{-1}cm^{-1}$
 Absorption λ_{max} (MeOH) .. 678 nm
 Emission λ_{max} (MeOH) 705 nm

Order-No.	Quantity
A8662,0001	1 mg
A8662,0005	5 mg
A8662,0010	10 mg

Colorada 678 Z - Azide



B

Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

$C_{38}H_{39}KN_5O_3S$
 $M = 645.81$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) 195,000 $M^{-1}cm^{-1}$
 Absorption λ_{max} (MeOH) .. 677 nm
 Emission λ_{max} (MeOH) 701 nm

Order-No.	Quantity
A8619,0001	1 mg
A8619,0005	5 mg
A8619,0010	10 mg

Colorada 678 Z - Amine



B

Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

$C_{38}H_{42}ClN_3O_3S$
 $M = 656.28$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) 195,000 $M^{-1}cm^{-1}$
 Absorption λ_{max} (MeOH) .. 676 nm
 Emission λ_{max} (MeOH) 701 nm

Order-No.	Quantity
A8873,0001	1 mg
A8873,0005	5 mg
A8873,0010	10 mg

Colorada 678 C - Acid



B

Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 insoluble in H_2O

$C_{41}H_{45}I_2N_2O_5S_2$
 $M = 724.71$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) 240,000 $M^{-1}cm^{-1}$
 Absorption λ_{max} (MeOH) .. 679 nm
 Emission λ_{max} (MeOH) 707 nm

Order-No.	Quantity
A8709,0001	1 mg
A8709,0005	5 mg
A8709,0010	10 mg

Colorada 678 C - PDA



B

Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

$C_{48}H_{53}IN_4OS_2$
 $M = 892.99$ g/mol
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) 240,000 $M^{-1}cm^{-1}$
 Absorption λ_{max} (MeOH) .. 679 nm
 Emission λ_{max} (MeOH) 707 nm

Order-No.	Quantity
A8773,0001	1 mg
A8773,0005	5 mg
A8773,0010	10 mg

Colorada 678 C - Diacid



B

Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 insoluble in H_2O

$C_{45}H_{51}BrKN_2O_4$
 $M = 763.80$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) 240,000 $M^{-1}cm^{-1}$
 Absorption λ_{max} (MeOH) .. 679 nm
 Emission λ_{max} (MeOH) 707 nm

Order-No.	Quantity
A8749,0001	1 mg
A8749,0005	5 mg
A8749,0010	10 mg

Colorado 678 A - Acid



2-((1E,3E,5E)-5-(3-(5-Carboxypentyl)-1,1-dimethyl-6-sulfonato-1H-benzo[e]indol-2(3H)-ylidene)penta-1,3-dienyl)-3-ethyl-1,1-dimethyl-1H-benzo[e]indolium-6-sulfonate potassium salt

$C_{41}H_{43}KN_2O_8S_2$
 $M = 795.02 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Solubility soluble in H_2O ,
 MeOH, DMSO,
 DMF

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $195,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 677 nm
 Emission λ_{max} (MeOH) 703 nm

Order-No.	Quantity
A8869,0001	1 mg
A8869,0005	5 mg
A8869,0010	10 mg

Colorado 670 LSS Z - NHS ester



Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 slightly soluble in
 H_2O

$C_{48}H_{57}N_4O_7S$
 $M = 823.05 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) $90,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 669 nm
 Emission λ_{max} (MeOH) 778 nm

Order-No.	Quantity
A8892,0001	1 mg
A8892,0005	5 mg
A8892,0010	10 mg

Colorado 645 Z - Acid



2-((1E,3E,5E)-5-(1-(5-Carboxypentyl)-3,3-dimethyl-indolin-2-ylidene)penta-1,3-dienyl)-1-ethyl-3,3-dimethyl-3H-indolium-5-sulfonate

$C_{33}H_{40}N_2O_5S$
 $M = 576.75 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Solubility soluble in
 Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 slightly in H_2O

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 643 nm
 Emission λ_{max} (MeOH) 665 nm

Order-No.	Quantity
A8467,0001	1 mg
A8467,0005	5 mg
A8467,0010	10 mg

Colorado 645 Z - PDA



Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

$C_{40}H_{48}N_4O_4S_3$
 $M = 745.03 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 643 nm
 Emission λ_{max} (MeOH) 665 nm

Order-No.	Quantity
A8489,0001	1 mg
A8489,0005	5 mg
A8489,0010	10 mg

Colorado 645 Z - Iodoacetamide



Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

$C_{32}H_{38}IN_3O_3S$
 $M = 687.63 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 643 nm
 Emission λ_{max} (MeOH) 665 nm

Order-No.	Quantity
A8482,0001	1 mg
A8482,0005	5 mg
A8482,0010	10 mg

Colorada 645 Z - Amine



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{30}H_{38}ClN_3O_3S$
 $M = 556.16 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 643 nm
 Emission λ_{max} (MeOH) 665 nm

Identity (NMR) complies

Order-No.	Quantity
A8473,0001	1 mg
A8473,0005	5 mg
A8473,0010	10 mg

Colorada 645 XT A - Acid



Solubility soluble in H_2O , MeOH, DMSO, DMF

$C_{33}H_{38}ClKN_2O_6S_2$
 $M = 729.34 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 648 nm
 Emission λ_{max} (MeOH) 667 nm

Identity (NMR) complies

Order-No.	Quantity
A8612,0001	1 mg
A8612,0005	5 mg
A8612,0010	10 mg

Colorada 645 XT A - NHS ester



Solubility soluble in H_2O , MeOH, DMSO, DMF

$C_{37}H_{41}ClKN_3O_{10}S_2$
 $M = 826.42 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 648 nm
 Emission λ_{max} (MeOH) 667 nm

Identity (NMR) complies

Order-No.	Quantity
A8658,0001	1 mg
A8658,0005	5 mg
A8658,0010	10 mg

Colorada XT 645 C - NHS ester



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{37}H_{43}ClIN_3O_4$
 $M = 756.13 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 641 nm
 Emission λ_{max} (MeOH) 663 nm

Identity (NMR) complies

Order-No.	Quantity
A8461,0001	1 mg
A8461,0005	5 mg
A8461,0010	10 mg

Colorada XT 645 C - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H_2O

$C_{33}H_{40}ClIN_2O_2$
 $M = 659.04 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 641 nm
 Emission λ_{max} (MeOH) 663 nm

Identity (NMR) complies

Order-No.	Quantity
A8452,0001	1 mg
A8452,0005	5 mg
A8452,0010	10 mg

Colorada 645 C - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H_2O

$C_{33}H_{41}IN_2O_2$
 $M = 624.59 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 641 nm
 Emission λ_{max} (MeOH) 663 nm

Identity (NMR) complies

Order-No.	Quantity
A8344,0001	1 mg
A8344,0005	5 mg
A8344,0010	10 mg

Colorada 645 C - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{40}H_{49}IN_4O_5S_2$
 $M = 792.88 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 641 nm
 Emission λ_{max} (MeOH) 663 nm

Identity (NMR) complies

Order-No.	Quantity
A8436,0001	1 mg
A8436,0005	5 mg
A8436,0010	10 mg

Colorada 645 C - di-Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H_2O

$C_{37}H_{47}BrN_2O_4$
 $M = 663.68 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 644 nm
 Emission λ_{max} (MeOH) 668 nm

Identity (NMR) complies

Order-No.	Quantity
A8448,0001	1 mg
A8448,0005	5 mg
A8448,0010	10 mg

Colorada 645 A - Acid



Solubility soluble in H_2O , MeOH, DMSO, DMF, Acetonitrile

$C_{33}H_{39}KN_2O_8S_2$
 $M = 694.90 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 648 nm
 Emission λ_{max} (MeOH) 667 nm

Identity (NMR) complies

Order-No.	Quantity
A8495,0001	1 mg
A8495,0005	5 mg
A8495,0010	10 mg

Colorada 645 A - PDA



Solubility soluble in H_2O , MeOH, DMSO, DMF

$C_{40}H_{47}KN_4O_7S_4$
 $M = 863.18 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 648 nm
 Emission λ_{max} (MeOH) 668 nm

Identity (NMR) complies

Order-No.	Quantity
A8513,0001	1 mg
A8513,0005	5 mg
A8513,0010	10 mg

Colorada 645 A - Iodoacetamide



Solubility soluble in H_2O , MeOH, DMSO, DMF

$C_{32}H_{37}IKN_3O_7S_2$
 $M = 805.78 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 643 nm
 Emission λ_{max} (MeOH) 662 nm

Identity (NMR) complies

Order-No.	Quantity
A8506,0001	1 mg
A8506,0005	5 mg
A8506,0010	10 mg

Colorada 645 A - Azide



Solubility soluble in H_2O , MeOH, DMSO, DMF, Acetonitrile

$C_{30}H_{34}KN_5O_6S_2$
 $M = 663.85 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 643 nm
 Emission λ_{max} (MeOH) 662 nm

Identity (NMR) complies

Order-No.	Quantity
A8519,0001	1 mg
A8519,0005	5 mg
A8519,0010	10 mg

Colorada 645 A - Amine



Solubility soluble in H_2O , MeOH, DMSO, DMF, Acetonitrile

$C_{30}H_{37}KN_3O_6S_2$
 $M = 599.76 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $250,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 643 nm
 Emission λ_{max} (MeOH) 662 nm

Identity (NMR) complies

Order-No.	Quantity
A8501,0001	1 mg
A8501,0005	5 mg
A8501,0010	10 mg

Colorada 630 N L5H - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{40}H_{44}BF_2N_5O_4$
 $M = 707.61 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $113,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 629 nm
 Emission λ_{max} (MeOH) 646 nm

Identity (NMR) complies

Order-No.	Quantity
A8654,0001	1 mg
A8654,0005	5 mg
A8654,0010	10 mg

Colorada 630 N L5H - NHS ester



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{44}H_{47}BF_2N_5O_6$
 $M = 804.69 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $113,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 629 nm
 Emission λ_{max} (MeOH) 646 nm

Identity (NMR) complies

Order-No.	Quantity
A8609,0001	1 mg
A8609,0005	5 mg
A8609,0010	10 mg

Colorada 630 N L5H - Azide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{34}H_{36}BF_2N_5O_2$
 $M = 595.49 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $113,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 629 nm
 Emission λ_{max} (MeOH) 646 nm

Identity (NMR) complies

Order-No.	Quantity
A8705,0001	1 mg
A8705,0005	5 mg
A8705,0010	10 mg

Colorada 630 L5H N - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{47}H_{52}BF_2N_7O_3S_3$
 $M = 875.90 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $113,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 629 nm
 Emission λ_{max} (MeOH) 646 nm

Identity (NMR) complies

Order-No.	Quantity
A9049,0001	1 mg
A9049,0005	5 mg
A9049,0010	10 mg

Colorada 600 L5H N - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{37}H_{40}BF_2N_5O_4$
 $M = 667.55 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $50,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 593 nm
 Emission λ_{max} (MeOH) 624 nm

Identity (NMR) complies

Order-No.	Quantity
A8701,0001	1 mg
A8701,0005	5 mg
A8701,0010	10 mg

Colorada 600 L5H N - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{31}H_{32}BF_2N_5O_2$
 $M = 835.33 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $50,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 593 nm
 Emission λ_{max} (MeOH) 630 nm

Identity (NMR) complies

Order-No.	Quantity
A9045,0001	1 mg
A9045,0005	5 mg
A9045,0010	10 mg

Colorada 600 L5H N - NHS ester

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{41}H_{43}BF_2N_5O_6$
 $M = 764.62 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C

Specification:

Assay min. 95 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 593 nm
 Emission λ_{max} (MeOH) 624 nm

Identity (NMR) complies

Order-No.
A8649,0001 1 mg
A8649,0005 5 mg
A8649,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (DPD) derivative. Forms stable amide bond with primary amines at pH 7 - 9.

Colorada 600 L5H N - Azide

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{31}H_{32}BF_2N_5O_2$
 $M = 555.42 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 95 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 593 nm
 Emission λ_{max} (MeOH) 630 nm

Identity (NMR) complies

Order-No.
A8605,0001 1 mg
A8605,0005 5 mg
A8605,0010 10 mg

Colorada 550 - 599 nm (purple spectrum)

Colorada 580 N - Acid

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{36}H_{38}BF_2N_5O_3$
 $M = 637.53 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 98 %
 ϵ (MeOH) 75,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 581 nm
 Emission λ_{max} (MeOH) 605 nm

Identity (NMR) complies

Order-No.
A8363,0001 1 mg
A8363,0005 5 mg
A8363,0010 10 mg

Comment: Colrada 580 N - Acid is in water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines via carbodiimide activation.

Colorada 580 N - PDA

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{43}H_{46}BF_2N_7O_2S_2$
 $M = 805.81 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 98 %
 ϵ (MeOH) 75,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 581 nm
 Emission λ_{max} (MeOH) 605 nm

Identity (NMR) complies

Order-No.
A8881,0001 1 mg
A8881,0005 5 mg
A8881,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts with thiol bonds to form disulfides.

Colorada 580 N - NHS ester

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{40}H_{41}BF_2N_5O_5$
 $M = 734.60 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C

Specification:

Assay min. 98 %
 ϵ (MeOH) 75,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 581 nm
 Emission λ_{max} (MeOH) 605 nm

Identity (NMR) complies

Order-No.
A8554,0001 1 mg
A8554,0005 5 mg
A8554,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines at pH 7-9.

Colorada 580 N - Azide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{30}H_{30}BF_2N_5O$
 $M = 525.40$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 98 %
 ϵ (MeOH) $75,000\text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) 581 nm
 Emission λ_{max} (MeOH) 605 nm

Identity (NMR) complies

Order-No.	Quantity
A8567,0001	1 mg
A8567,0005	5 mg
A8567,0010	10 mg

Colorada 577 N - PEO-PFP



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{28}H_{19}F_5N_3O_5$
 $M = 571.45$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (EtOH) $60,000\text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (EtOH) 576 nm
 Emission λ_{max} (EtOH) 591 nm

Identity (NMR) complies

Order-No.	Quantity
A8745,0001	1 mg
A8745,0005	5 mg
A8745,0010	10 mg

Colorada 577 N - PEO Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{22}H_{19}N_3O_5$
 $M = 405.40$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (EtOH) $60,000\text{ M}^{-1}\text{cm}^{-1}$
 ϕ (EtOH) 0.80
 τ (EtOH) 8.43 ns

Absorption λ_{max} (EtOH) 576 nm
 Emission λ_{max} (EtOH) .. 591 nm
 Identity (NMR) complies

Order-No.	Quantity
A8697,0001	1 mg
A8697,0005	5 mg
A8697,0010	10 mg

Colorada 577 N - PEO Amine



Solubility soluble in H₂O, MeOH, DMSO, DMF, Acetonitrile

$C_{21}H_{21}ClN_4O_3$
 $M = 412.87$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (EtOH) $60,000\text{ M}^{-1}\text{cm}^{-1}$
 ϕ (EtOH) 0.80
 τ (EtOH) 8.35 ns

Absorption λ_{max} (EtOH) 576 nm
 Emission λ_{max} (EtOH) .. 592 nm
 Identity (NMR) complies

Order-No.	Quantity
A8645,0001	1 mg
A8645,0005	5 mg
A8645,0010	10 mg

Colorada 577 N - Iodoacetamide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{23}H_{21}IN_4O_2$
 $M = 512.34$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (EtOH) $60,000\text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (EtOH) 577 nm
 Emission λ_{max} (EtOH) 592 nm

Identity (NMR) complies

Order-No.	Quantity
A8599,0001	1 mg
A8599,0005	5 mg
A8599,0010	10 mg

Colorada 577 N - Amine



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{21}H_{21}ClN_4O$
 $M = 380.87$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 95 %
 ϵ (EtOH) $60,000\text{ M}^{-1}\text{cm}^{-1}$
 ϕ (EtOH) 0.72
 τ (EtOH) 8.80 ns

Absorption λ_{max} (EtOH) 577 nm
 Emission λ_{max} (EtOH) .. 592 nm
 Identity (NMR) complies

Order-No.	Quantity
A8769,0001	1 mg
A8769,0005	5 mg
A8769,0010	10 mg

Colorado 570 L5H N - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

C₃₄H₃₆BF₂N₃O
M = 627.49 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 98 %
ε (MeOH) 50,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 573 nm
Emission λ_{max} (MeOH) 612 nm

Identity (NMR) complies

Order-No.	Quantity
A8641,0001	1 mg
A8641,0005	5 mg
A8641,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines *via* carbodiimide activation.

Colorado 570 L5H N - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

C₄₁H₄₄BF₂N₇O₃S₂
M = 795.77 g/mol
HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
ε (MeOH) 50,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 573 nm
Emission λ_{max} (MeOH) 612 nm

Identity (NMR) complies

Order-No.	Quantity
A9041,0001	1 mg
A9041,0005	5 mg
A9041,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts with activated carboxylic acid at pH 7-9 to afford stable amide bond.

Colorado 570 L5H N - NHS ester



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

C₃₈H₃₆BF₂N₆O₆
M = 724.56 g/mol
HS-No.: 29322985

Storage: -20°C

B

Specification:

Assay min. 98 %
ε (MeOH) 50,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 573 nm
Emission λ_{max} (MeOH) 612 nm

Identity (NMR) complies

Order-No.	Quantity
A8594,0001	1 mg
A8594,0005	5 mg
A8594,0010	10 mg

Colorado 570 L5H N - Azide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

C₂₈H₂₈BF₂N₅O₂
M = 515.36 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 98 %
ε (MeOH) 50,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 573 nm
Emission λ_{max} (MeOH) 612 nm

Identity (NMR) complies

Order-No.	Quantity
A8693,0001	1 mg
A8693,0005	5 mg
A8693,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts under very mild conditions toward terminal alkynes in the presence of Cu(I) forming a 1,2,3-triazole type connection ("Click Reaction").

Colorado 570 L5H N - Amine



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

C₂₈H₃₀BF₂N₃O₂
M = 489.36 g/mol
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 98 %
ε (MeOH) 50,000 M⁻¹cm⁻¹
Absorption λ_{max} (MeOH) .. 573 nm
Emission λ_{max} (MeOH) 612 nm

Identity (NMR) complies

Order-No.	Quantity
A8741,0001	1 mg
A8741,0005	5 mg
A8741,0010	10 mg

Comment: Colorado 570 L5H N - Amine forms stable amide bond with primary amines at pH 7-9.

Colorada 555 N - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{30}H_{34}BF_2N_5O_3$
 $M = 561.43 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 98 % Identity (NMR) complies

ϵ (MeOH) $77,000 \text{ M}^{-1}\text{cm}^{-1}$

Absorption λ_{max} (MeOH) .. 551 nm

Emission λ_{max} (MeOH) 564 nm

Order-No.
A9025,0001 1 mg
A9025,0005 5 mg
A9025,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines *via* carbodiimide activation.

Colorada 555 N - NHS ester



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{34}H_{37}BF_2N_6O_5$
 $M = 658.50 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C

B

Specification:

Assay min. 98 % Identity (NMR) complies

ϵ (MeOH) $77,000 \text{ M}^{-1}\text{cm}^{-1}$

Absorption λ_{max} (MeOH) .. 551 nm

Emission λ_{max} (MeOH) 564 nm

Order-No.
A9029,0001 1 mg
A9029,0005 5 mg
A9029,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines at pH 7-9.

Colorada 555 N - Azide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{24}H_{26}BF_2N_5O$
 $M = 449.30 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 98 % Identity (NMR) complies

ϵ (MeOH) $77,000 \text{ M}^{-1}\text{cm}^{-1}$

Absorption λ_{max} (MeOH) .. 551 nm

Emission λ_{max} (MeOH) 564 nm

Order-No.
A9033,0001 1 mg
A9033,0005 5 mg
A9033,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts under very mild conditions toward terminal alkynes in the presence of Cu(I) forming a 1,2,3-triazole type connection ("Click Reaction").

Colorada 555 N - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{37}H_{42}BF_2N_3O_2S_2$
 $M = 729.71 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Specification:

Assay min. 98 % Identity (NMR) complies

ϵ (MeOH) $77,000 \text{ M}^{-1}\text{cm}^{-1}$

Absorption λ_{max} (MeOH) .. 551 nm

Emission λ_{max} (MeOH) 564 nm

Order-No.
A9037,0001 1 mg
A9037,0005 5 mg
A9037,0010 10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts with thiol bonds to form disulfides.

Colorada 550 Z - Acid



2-((1E,3E)-3-(1-(5-Carboxypentyl)-3,3-dimethylindolin-2-ylidene)prop-1-enyl)-1-ethyl-3,3-dimethyl-3H-indolium-5-sulfonate

$C_{31}H_{38}N_2O_5S$
 $M = 550.71 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, slightly in H₂O

Specification:

Assay min. 95 % Identity (NMR) complies

ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$

Absorption λ_{max} (MeOH) .. 550 nm

Emission λ_{max} (MeOH) 566 nm

Order-No.
A8765,0001 1 mg
A8765,0005 5 mg
A8765,0010 10 mg

Colorada 550 Z - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{38}H_{46}N_4O_4S_3$
 $M = 718.99 \text{ g/mol}$
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) 550 nm
Emission λ_{max} (MeOH) 566 nm

Identity (NMR) complies

Order-No.	Quantity
A8805,0001	1 mg
A8805,0005	5 mg
A8805,0010	10 mg

Colorada 550 Z - Iodoacetamide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{30}H_{36}I N_3 O_4 S$
 $M = 661.59 \text{ g/mol}$
HS-No.: 29322985

Storage: -20°C
protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) 551 nm
Emission λ_{max} (MeOH) 567 nm

Identity (NMR) complies

Order-No.	Quantity
A8789,0001	1 mg
A8789,0005	5 mg
A8789,0010	10 mg

Colorada 550 Z - Azide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{28}H_{33}N_5O_3S$
 $M = 519.66 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) 545 nm
Emission λ_{max} (MeOH) 565 nm

Identity (NMR) complies

Order-No.	Quantity
A8837,0001	1 mg
A8837,0005	5 mg
A8837,0010	10 mg

Colorada 550 Z - Amine



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, slightly in H_2O

$C_{28}H_{36}Cl N_3 O_3 S$
 $M = 530.12 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) 551 nm
Emission λ_{max} (MeOH) 567 nm

Identity (NMR) complies

Order-No.	Quantity
A8821,0001	1 mg
A8821,0005	5 mg
A8821,0010	10 mg

Colorada 550 C - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H_2O

$C_{31}H_{39}I N_3 O_2$
 $M = 598.56 \text{ g/mol}$
HS-No.: 29322985

Storage: 2-8°C
protected from light

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) 548 nm
Emission λ_{max} (MeOH) 567 nm

Identity (NMR) complies

Order-No.	Quantity
A8637,0001	1 mg
A8637,0005	5 mg
A8637,0010	10 mg

Comment: Water insoluble trimethine cyanine. Used to label proteins, antibodies, drugs and nucleotides. Forms stable amide bond with primary amines via carbodiimide activation. Suitable for 2D-DIGE (Two-dimensional difference gel electrophoresis) applications: the intrinsic single positive charge does not alter the pI (isoelectric point) of the labeled biomolecule.

Colorada 550 C - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile

$C_{38}H_{47}I N_4 O S_2$
 $M = 766.84 \text{ g/mol}$
HS-No.: 29322985

Storage: -20°C
protected from light
under argon

B

Specification:

Assay min. 95 %
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
Absorption λ_{max} (MeOH) 545 nm
Emission λ_{max} (MeOH) 565 nm

Identity complies (NMR)

Order-No.	Quantity
A8737,0001	1 mg
A8737,0005	5 mg
A8737,0010	10 mg

Colorado 550 C - Iodoacetamide



B

1-Ethyl-2-((1E,3E)-3-(1-(3-(2-iodoacetamido)propyl)-3,3-dimethylindolin-2-ylidene)prop-1-enyl)-3,3-dimethyl-3H-indolium iodide

$C_{30}H_{37}I_2N_3O$
 $M = 709.44 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light

Solubility soluble in
 Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 548 nm
 Emission λ_{max} (MeOH) 567 nm

Order-No.	Quantity
A8689,0001	1 mg
A8689,0005	5 mg
A8689,0010	10 mg

Comment: Thiol-reactive trimethine cyanine. Maleimide analogue. Water insoluble. Intrinsic single positive charge. Iodoacetyl group reacts toward thiols at pH > 7.5 to give a stable covalent bond.

Colorado 550 C - Amine



B

Solubility soluble in Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 slightly in H_2O

$C_{28}H_{37}ClIN_3$
 $M = 577.97 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 548 nm
 Emission λ_{max} (MeOH) 567 nm

Order-No.	Quantity
A8589,0001	1 mg
A8589,0005	5 mg
A8589,0010	10 mg

Comment: Trimethine cyanine with an amino group protected as hydrochloride. Reacts toward activated carboxylic acid at pH 7-9 bearing an intrinsic single positive charge.

Colorado 550 A - Acid



B

Solubility soluble in H_2O ,
 MeOH, DMSO,
 DMF

$C_{31}H_{37}KN_2O_6S_2$
 $M = 668.87 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 553 nm
 Emission λ_{max} (MeOH) 568 nm

Order-No.	Quantity
A8853,0001	1 mg
A8853,0005	5 mg
A8853,0010	10 mg

Colorado 550 A - PDA



B

Solubility soluble in H_2O ,
 MeOH, DMSO,
 DMF

$C_{39}H_{45}KN_4O_7S_4$
 $M = 779.75 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 553 nm
 Emission λ_{max} (MeOH) 568 nm

Order-No.	Quantity
A8857,0001	1 mg
A8857,0005	5 mg
A8857,0010	10 mg

Colorado 550 A - Iodoacetamide



B

Solubility soluble in H_2O ,
 MeOH, DMSO,
 DMF

$C_{30}H_{35}IKN_3O_7S_2$
 $M = 779.75 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 553 nm
 Emission λ_{max} (MeOH) 570 nm

Order-No.	Quantity
A8861,0001	1 mg
A8861,0005	5 mg
A8861,0010	10 mg

Colorado 550 A - Amine



B

Solubility soluble in H_2O ,
 MeOH, DMSO,
 DMF, Acetonitrile

$C_{28}H_{35}N_3O_6S_2$
 $M = 573.72 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 % Identity (NMR) complies
 ϵ (MeOH) $150,000 \text{ M}^{-1}\text{cm}^{-1}$
 Absorption λ_{max} (MeOH) .. 553 nm
 Emission λ_{max} (MeOH) 570 nm

Order-No.	Quantity
A8865,0001	1 mg
A8865,0005	5 mg
A8865,0010	10 mg

Colorado 501 - 549 nm (red spectrum)

Colorado 530 L5H N - PDA

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{36}H_{42}BF_2N_7O_2S_2$
 $M = 717.07 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 54,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 529 nm
 Emission λ_{max} (MeOH) 561 nm

Order-No.	Quantity
A9021,0001	1 mg
A9021,0005	5 mg
A9021,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts with activated carboxylic acid at pH 7-9 to afford stable amide bond.

Colorado 530 L5H N - NHS ester

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{33}H_{37}BF_2N_6O_5$
 $M = 646.49 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 54,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 529 nm
 Emission λ_{max} (MeOH) 561 nm

Order-No.	Quantity
A8633,0001	1 mg
A8633,0005	5 mg
A8633,0010	10 mg

Colorado 530 L5H N - Azide

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{23}H_{26}BF_2N_5O$
 $M = 437.29 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 54,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 529 nm
 Emission λ_{max} (MeOH) 561 nm

Order-No.	Quantity
A8733,0001	1 mg
A8733,0005	5 mg
A8733,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts under very mild conditions toward terminal alkynes in the presence of Cu(I) forming a 1,2,3-triazole type connection ("Click Reaction").

Colorado 530 L5H N - Amine

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{23}H_{26}BF_2N_3O$
 $M = 411.29 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 54,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 529 nm
 Emission λ_{max} (MeOH) 561 nm

Order-No.	Quantity
A8685,0001	1 mg
A8685,0005	5 mg
A8685,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts with activated carboxylic acid at pH 7-9 to afford stable amide bond.

Colorado 530 L5H N - Acid

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{29}H_{34}BF_2N_5O_3$
 $M = 549.42 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 54,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 529 nm
 Emission λ_{max} (MeOH) 561 nm

Order-No.	Quantity
A8583,0001	1 mg
A8583,0005	5 mg
A8583,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines via carbodiimide activation.

Colorada 515 L5H N - Acid



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{28}H_{32}BF_2N_5O_2$
 $M = 519.39$ g/mol
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 515 nm
 Emission λ_{max} (MeOH) 539 nm

Identity (NMR) complies

Order-No.	Quantity
A9001,0001	1 mg
A9001,0005	5 mg
A9001,0010	10 mg

Comment: Water insoluble dipyrrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines *via* carbodiimide activation.

Colorada 515 L5H N - PDA



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{35}H_{40}BF_2N_7OS_2$
 $M = 687.68$ g/mol
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 515 nm
 Emission λ_{max} (MeOH) 515 nm

Identity (NMR) complies

Order-No.	Quantity
A9017,0001	1 mg
A9017,0005	5 mg
A9017,0010	10 mg

Comment: Water insoluble dipyrrrometheneboron difluoride (BDP) derivative. Reacts with activated carboxylic acid at pH 7-9 to afford stable amide bond.

Colorada 515 L5H N - NHS ester



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{32}H_{35}BF_2N_5O_4$
 $M = 616.47$ g/mol
 HS-No.: 29322985

Storage: -20°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 515 nm
 Emission λ_{max} (MeOH) 539 nm

Identity (NMR) complies

Order-No.	Quantity
A9005,0001	1 mg
A9005,0005	5 mg
A9005,0010	10 mg

Comment: Forms stable amide bond with primary amines at pH 7-9.

Colorada 515 L5H N - Azide



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{22}H_{24}BF_2N_5$
 $M = 407.27$ g/mol
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 515 nm
 Emission λ_{max} (MeOH) 539 nm

Identity (NMR) complies

Order-No.	Quantity
A9009,0001	1 mg
A9009,0005	5 mg
A9009,0010	10 mg

Comment: Reacts under very mild conditions toward terminal alkynes in the presence of Cu(I) forming a 1,2,3-triazole type connection ("Click Reaction").

Colorada 515 L5H N - Amine



Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{22}H_{26}BF_2N_3$
 $M = 381.27$ g/mol
 HS-No.: 29322985

Storage: 2-8°C

B

Specification:

Assay min. 98 %
 ϵ (MeOH) 50,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 515 nm
 Emission λ_{max} (MeOH) 539 nm

Identity (NMR) complies

Order-No.	Quantity
A9013,0001	1 mg
A9013,0005	5 mg
A9013,0010	10 mg

Comment: Reacts under very mild conditions toward terminal alkynes in the presence of Cu(I) forming a 1,2,3-triazole type connection ("Click Reaction").

Colorada 450 - 500 nm (orange spectrum)

Colorada 500 L5H N - Acid

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{24}H_{32}BF_2N_5O_2$
 $M = 471.35 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 88,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 496 nm
 Emission λ_{max} (MeOH) 506 nm

Order-No.	Quantity
A8577,0001	1 mg
A8577,0005	5 mg
A8577,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Forms stable amide bond with primary amines via carbodiimide activation.

Colorada 500 L5H N - PDA

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{31}H_{40}BF_2N_7OS_2$
 $M = 639.63 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 88,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 496 nm
 Emission λ_{max} (MeOH) 506 nm

Order-No.	Quantity
A8877,0001	1 mg
A8877,0005	5 mg
A8877,0010	10 mg

Colorada 500 L5H N - NHS ester

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{28}H_{35}BF_2N_6O_4$
 $M = 568.42 \text{ g/mol}$
 HS-No.: 29322985

Storage: -20°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 88,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 496 nm
 Emission λ_{max} (MeOH) 506 nm

Order-No.	Quantity
A8628,0001	1 mg
A8628,0005	5 mg
A8628,0010	10 mg

Comment: Forms stable amide bond with primary amines at pH 7-9.

Colorada 500 L5H N - Azide

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{18}H_{24}BF_2N_5$
 $M = 359.22 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (MeOH) 88,000 M⁻¹cm⁻¹
 Absorption λ_{max} (MeOH) .. 496 nm
 Emission λ_{max} (MeOH) 506 nm

Order-No.	Quantity
A8681,0001	1 mg
A8681,0005	5 mg
A8681,0010	10 mg

Comment: Reacts under very mild conditions toward terminal alkynes in the presence of Cu(I) forming a 1,2,3-triazole type connection ("Click Reaction").

Colorada 500 L5H N - Amine

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{18}H_{26}BF_2N_3$
 $M = 333.23 \text{ g/mol}$
 HS-No.: 29322985

Storage: 2-8°C

Specification:

Assay min. 98 % Identity (NMR) complies
 ϵ (H₂O/DMSO) ϵ (MeOH)
 Absorption λ_{max} (MeOH) .. 496 nm
 Emission λ_{max} (MeOH) 506 nm

Order-No.	Quantity
A8729,0001	1 mg
A8729,0005	5 mg
A8729,0010	10 mg

Comment: Water insoluble dipyrrometheneboron difluoride (BDP) derivative. Reacts with activated carboxylic acid at pH 7-9 to afford stable amide bond.

Colorado 400 - 449 nm (yellow spectrum)

Colorado 425 N - Acid

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{20}H_{26}N_2O_5$
 $M = 374.43$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Specification:

Assay min. 95 %
 ϵ (H₂O/DMSO) 37,000 M⁻¹cm⁻¹
 Absorption λ_{max} (H₂O/DMSO) 425 nm

Emission λ_{max} (H₂O/DMSO) 476 nm
 Identity (NMR) complies

Order-No.	Quantity
A8570,0001	1 mg
A8570,0005	5 mg
A8570,0010	10 mg

Comment: Water insoluble coumarine derivative. Forms stable amide bond with primary amines via carbodiimide activation.

Colorado 425 N - NHS ester

B

Solubility soluble in Dichloromethane, MeOH, DMSO, DMF, Acetonitrile, insoluble in H₂O

$C_{24}H_{29}N_3O_7$
 $M = 471.50$ g/mol
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

Specification:

Assay min. 95 %
 ϵ (H₂O/DMSO) 37,000 M⁻¹cm⁻¹
 Absorption λ_{max} (H₂O/DMSO) 425 nm

Emission λ_{max} (H₂O/DMSO) 476 nm
 Identity (NMR) complies

Order-No.	Quantity
A8623,0001	1 mg
A8623,0005	5 mg
A8623,0010	10 mg

Comment: Colorado 425 N - NHS ester is an amine - reactive and in water insoluble coumarine derivative. Forms stable amide bond with primary amines at pH 7 - 9.

Colorado 425 N - Iodoacetamide

B

7-Diethylamino-N-6-(iodoacetylaminohexyl)-2-oxo-2H-chromen-3-carboxamid

$C_{22}H_{30}N_3O_4$
 $M = 527.40$ g/mol
 HS-No.: 29322985

Storage: -20°C
 protected from light
 under argon

Solubility soluble in
 Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 insoluble in H₂O

Specification:

Assay min. 95 %
 ϵ (H₂O/DMSO) 37,000 M⁻¹cm⁻¹
 Absorption λ_{max} (H₂O/DMSO) 425 nm

Emission λ_{max} (H₂O/DMSO) 476 nm
 Identity (NMR) complies

Order-No.	Quantity
A8725,0001	1 mg
A8725,0005	5 mg
A8725,0010	10 mg

Comment: Colorado 425 N - Iodoacetamide is a thiol-reactive coumarine derivative, Maleimide analogue. Iodoacetyl group reacts toward thiols at pH > 7.5 to give a stable covalent bond.

Colorado 425 N - Amine

B

7-Diethylamino-N-6-aminohexyl-2-oxo-2H-chromen-3-carboxamide

$C_{20}H_{29}N_3O_3$
 $M = 359.46$ g/mol
 HS-No.: 29322985

Storage: 2-8°C
 protected from light

Solubility soluble in
 Dichloromethane,
 MeOH, DMSO,
 DMF, Acetonitrile,
 insoluble in H₂O

Specification:

Assay min. 95 %
 ϵ (H₂O/DMSO) 37,000 M⁻¹cm⁻¹
 Absorption λ_{max} (H₂O/DMSO) 425 nm

Emission λ_{max} (H₂O/DMSO) 476 nm
 Identity (NMR) complies

Order-No.	Quantity
A8677,0001	1 mg
A8677,0005	5 mg
A8677,0010	10 mg

Comment: Coumarine derivative with a free amino group. Can reacts toward activated carboxylic acid at pH 7-9 to afford stable amide bond.

Columbia Blood Agar Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Peptones, extracts 23.0 g/L
Sodium chloride 5.0 g/L
Starch soluble 1.0 g/L

Specification:

pH before autoclaving ... approx. 7.3 (20°C)

Order-No.
A5700,0500
A5700,5000
Quantity
500 g
5 kg

Literature: (1) Ellner et al. (1966) *Am. J. Clin. Pathol.* **45**, 502

Comment: This is a multi-purpose medium, suitable for the cultivation of fastidious and non-fastidious organisms.

Directions: Suspend 42 g in 950 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 50 ml of sterile defibrinated blood. Mix well before pouring. Store the prepared medium at 2-8°C.

Concanavalin A see Lectins Page 484

Congo red (C.I. 22120)

C

Direct Red 28

 $C_{32}H_{22}N_6Na_2O_6S_2$
 $M = 696.68 \text{ g/mol}$
CAS-No.: 573-58-0
HS-No.: 32041400
EC-No.: 209-358-4

Storage: RT
LGK: 6.1 B

Class / PG: 6/III
UN2811
WGK: 3
Danger
H360d-H350
P281-P308+P313-P201

Transition interval pH 3.0 - 5.2 (violet
- orange red)

Specification:

Assay (photometr.) min. 85 %
 λ_{max} (pH 5.2) 497 - 500 nm
Loss on drying max. 5 %

UV/VIS-spectrum complies to standard

Order-No.
A2385,0005
A2385,0025
A2385,0100
Quantity
5 g
25 g
100 g

Literature: (1) Béguin, P. (1983) *Anal. Biochem.* **131**, 333-336

(2) Coughlan, M.P. (1983) *Methods Enzymol.* **160**, 135-144

(3) Hirota, S. et al. (1990) *Arch. Pathol. Lab. Med.* **114**, 429-431

(4) Mehta, S. & Rajput, Y.S. (1998) *Anal. Biochem.* **263**, 248-251

Detection of cellulase activity in polyacrylamide gels with congo red-stained agar-replicas.

Staining technique for the detection of individual components of cellulytic enzyme systems.

Crystalline deposits of I-light chains and amyloidosis in the thyroid gland.

Staining of proteins in nitrocellulose membranes and acrylamide gels with congo red.

Comment: Congo red is an anionic dye, which binds to carboxymethylcellulose and proteins in acidic acetate buffer. The sensitivity is higher than for Ponceau S staining and slightly lower than Coomassie Brilliant blue. The destaining of SDS gels is more slowly in comparison to Coomassie Brilliant blue (4).

Staining of proteins on nitrocellulose (4):

Incubate the membrane directly after blotting for 5 minutes at room temperature with gentle rocking in the staining solution (see below).

Finish the staining by rinsing with bidistilled water.

Destain the membrane in bidistilled water with gentle rocking, until the brown protein bands become visible. The back ground staining will be slightly pink.

Air-dry the membrane and store protected from light.

Sensitivity: 0.5 µg protein; duration: approx. 10 minutes;

Staining of proteins in SDS polyacrylamide gels (4):

Incubate the SDS gel for 30 minutes at room temperature in 0.2 M acetate buffer (pH 3.5).

Stain the gel for 30 minutes at room temperature in staining solution.

Destain the gel in 0.2 M acetate buffer (pH 3.5).

(The sensitivity may be slightly increased, if congo red is dissolved in 50 % ethanol and destaining is performed in 10 % ethanol.)

A 1 % stock solution is prepared in bidistilled water and is stable at room temperature. Dilute the stock solution 1:10 in 0.2 M acetate buffer (pH 3.5) just before use. It may form a precipitate upon dilution, without having any influence on the staining. Congo red is insoluble at low pH values (4).

Congo red - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 38220000
EC-No.: 209-358-4

Storage: RT

WGK: 3
Danger
H350
P281-P308+P313-P201

Composition:

Congo red (A2385) 0.2 %

Order-No.
A0574,0100
A0574,0500
Quantity
100 ml
500 ml

recombinant Human Connective Tissue Growth Factor see rHu CTGF Page 248

Coomassie® Brilliant blue G-250 (C.I. 42655)

B

Brilliant blue G

 $C_{47}H_{48}N_3NaO_7S_2$
 $M = 854.04 \text{ g/mol}$
CAS-No.: 6104-58-1
HS-No.: 32041200
EC-No.: 228-058-4

Storage: RT
LGK: 10 - 13

WGK: 1

Solubility (20°C) ~10 g/L (H₂O)

Specification:

 λ_{max} (buffer pH 7.0) 577 - 584 nm
E 1 %/1 cm, λ_{max} (pH 7.0) . 450 - 570

Order-No.	Quantity
A3480,0010	10 g
A3480,0025	25 g
A3480,0100	100 g

* registered trademark of Imperial Industries PLC

Literature: (1) Neuhoﬀ, V. *et al.* (1988) *Electrophoresis* **9**, 255-262

Improved staining of proteins in polyacrylamide gels including isoelectric focusing gels with clear background at nanogram sensitivity using Coomassie® Brilliant Blue G-250 and R-250.

Comment: The assays of Neuhoﬀ *et al.* (1) have shown that staining with Coomassie® G-250 is more sensitive than with R-250. For more informations see A1092.

Coomassie® Brilliant blue R-250 (C.I. 42660)

B

Brilliant blue R, Xylenebrilliantcyanine

 $C_{45}H_{44}N_3NaO_7S_2$
 $M = 825.98 \text{ g/mol}$
CAS-No.: 6104-59-2
HS-No.: 32041200
EC-No.: 228-060-5

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

 λ_{max} (buffer pH 7.0) 554 - 563 nm
E 1 %, 1 cm, λ_{max} >300 (pH 7.0)

Order-No.	Quantity
A1092,0010	10 g
A1092,0025	25 g
A1092,0100	100 g

* registered trademark of Imperial Industries PLC

Literature: (1) Fazekas De St. Groth, S. *et al.* (1963) *Biochim. Biophys. Acta* **71**, 377-391

(2) Chrambach, A. *et al.* (1967) *Anal. Biochem.* **20**, 150-154

(3) Neuhoﬀ, V. *et al.* (1988) *Electrophoresis* **9**, 255-262

(4) Choi, J.-K. *et al.* (1996) *Anal. Biochem.* **236**, 82-84

(5) Tal, M. *et al.* (1985) *J. Biol. Chem.* **260**, 9976-9980

Two new staining procedures for quantitative estimation of proteins on electrophoresis strips.

A procedure for rapid and sensitive staining of protein fractionated by polyacrylamide gel electrophoresis.

Improved staining of proteins in polyacrylamide gels including isoelectric focusing gels with clear background at nanogram sensitivity using Coomassie® Brilliant Blue G-250 and R-250.

Modified Coomassie® Blue staining of proteins in polyacrylamide gels with Bismark brown.

Why does Coomassie® Brilliant Blue R Interact Differently with Different Proteins?

Comment: Coomassie® Brilliant Blue R-250 is one of the most commonly used stains for proteins, after their separation by polyacrylamide gel electrophoresis. The protein-dye complex has an absorption maximum at 549 nm, the dye without protein at 555 nm (in 0.01 M citrate buffer, pH 3). The intensity in staining of proteins probably depends on the basicity of a protein (5). Per positively charged amino acid approximately 1.5 - 3 molecules of Coomassie® will be bound. This variation complicate the exact protein determination with albumin as a standard, since this protein contains more basic amino acids than many other proteins (5).

There do exist many protocols for sensitive staining procedures with Coomassie® (e. g. ref. 3, 4). The sensitivity reaches a limit at 25 ng protein (4). We recommend the following protocol:

I. Staining solution: 0.1 % Coomassie® Brilliant Blue R-250 (Prod.-No. A1092)

20 % methanol (or ethanol)

10 % acetic acid

The SDS gel (without 'stacking gel') is stained for 1 hour at 60°C or for 2 hours at 50°C or over night at RT.

II. Destaining solution: 20 % methanol (or ethanol)

10 % acetic acid

Destain the gel for 3 - 4 hours at 50 - 60°C. Add some sponges.

Subsequently wash the gel for 15 minutes in water and dry under vacuum at 60°C for 2 - 3 hours.

Copper(I) chloride pure

C

CuCl

 $CuCl$
 $M = 98.99 \text{ g/mol}$
CAS-No.: 7758-89-6
HS-No.: 28273985
EC-No.: 231-842-9

Storage: RT
LGK: 8 B
Disposal: 15

Class / PG: 8/III
UN2802
WGK: 2
Warning
H410-H302
P273


Boiling point 1367°C

Melting point 422°C

Specification:

Assay (cerimetric) min. 97 %
Acid-insoluble matter max. 0.05 %
H₂S-non-precip. matter (as SO₂) max. 0.5 %
Sulfate max. 0.05 %

As max. 0.0005 %
Fe max. 0.01 %

Order-No.	Quantity
A4134,0250	250 g
A4134,0500	500 g
A4134,1000	1 kg
A4134,10006	6 x 1 kg

Copper(II) chloride dihydrate pure

C

Copper dichloride

$\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$
M = 170.48 g/mol
 CAS-No.: 10125-13-0
 HS-No.: 28273985
 EC-No.: 231-210-2

Storage: RT
 LGK: 8 B
 Disposal: 15

Class / PG: 8/III
 UN2802
 WGK: 2
 Warning
 H302+H315+H319+H410
 P302+P352+P273+P260-
 P305+P351+P338



Melting point ~100°C
 Solubility (20°C) 1150 g/L (H₂O)

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O) 3.0 - 4.0
 Sulfate max. 0.01 %
 As max. 0.0005 %
 Ca max. 0.01 %

Fe max. 0.005 %
 Mg max. 0.01 %

Order-No.	Quantity
A2787,0250	250 g
A2787,0500	500 g
A2787,1000	1 kg
A2787,10006	6 x 1 kg

Copper dichloride see Copper(II) chloride dihydrate pure Page 243

Copper(II) ethylenediamine - Solution

C

for viscosimetry of cellulose (according to DIN 54270)

CAS-No.: 14552-35-3
 HS-No.: 29420000

Storage: RT
 LGK: 8 B
 Disposal: 15

Class / PG: 8(6.1)/II
 UN1761
 WGK: 3
 Danger
 H314+H302
 P305+P351+P338-P280



Density (d 20°C/4°C) .. 1.096 - 1.100

Specification:

Molar ratio (Ethylenediamine : Cu)
 1.95 - 2.05
 pH (1 %; H₂O; 25°C) 12.0 - 12.5

Order-No.	Quantity
A1804,0250	250 ml
A1804,0500	500 ml
A1804,1000	1 L
A1804,10006	6 x 1 L

Copper monooxide see Copper(II) oxide pure Page 243

Copper(II) nitrate trihydrate pure

C

Cu(NO₃)₂ · 3H₂O

$\text{Cu(NO}_3)_2 \cdot 3\text{H}_2\text{O}$
M = 241.60 g/mol
 CAS-No.: 10031-43-3
 HS-No.: 28342940
 EC-No.: 221-838-5

Storage: RT
 LGK: 5.1 B
 Disposal: 13

Class / PG: 5.1/II
 UN1477
 WGK: 2
 Danger
 H272+H302+H319+H410+H315
 P273+P210+P302+P352-
 P305+P351+P338



Melting point approx. 114° C
 Solubility (20°C) 2670 g/l (H₂O)

Specification:

Assay (iodometr.) min. 99
 H₂S non-precip. matter (as SO₄)
 max. 0.1 %
 Chloride max. 0.003 %
 Sulfate max. 0.01 %

Fe max. 0.001 %
 Pb max. 0.005 %

Order-No.	Quantity
A4476,0500	500 g
A4476,1000	1 kg
A4476,10006	6 x 1 kg
A4476,5000	5 kg

Copper(II) oxide pure

C

Copper monooxide

CuO
M = 79.55 g/mol
 CAS-No.: 1317-38-0
 HS-No.: 28255000
 EC-No.: 215-269-1

Storage: RT
 LGK: 10 - 13

WGK: 1
 Warning
 H410+H302
 P260+P273



Specification:

Assay (titr.) min. 97 %
 Loss on drying max. 1.0 %
 Fe max. 0.05 %
 Pb max. 0.05 %

Order-No.	Quantity
A4030,0100	100 g
A4030,0500	500 g
A4030,1000	1 kg
A4030,10006	6 x 1 kg

Copper(II) sulfate pentahydrate

$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Solubility (20°C) 317 g/L (H_2O)
Thermal dec. 110°C

$\text{CuO}_4\text{S} \cdot 5\text{H}_2\text{O}$

$M = 249.68 \text{ g/mol}$
CAS-No.: 7758-99-8
HS-No.: 28332500
EC-No.: 231-847-6

Storage: RT
LGK: 10 - 13
Disposal: 15

Class / PG: 9/III

UN3077
WGK: 2
Warning
H315-H302-H319-H410
P302+P352-P273-P305+P351+P338



Copper(II) sulfate pentahydrate *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Insoluble matter complies
pH (5 %; H_2O) 3.5 - 4.5 (20°C)
Chloride max. 0.001 %

As max. 0.00005 %
Ca max. 0.005 %
Fe max. 0.005 %
Pb max. 0.005 %

Order-No.	Quantity
A3880,0500	500 g
A3880,1000	1 kg
A3880,5000	5 kg

Copper(II) sulfate pentahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
pH (5 %; H_2O ; 20°C) 3.5 - 4.5
Chloride max. 0.001 %
As max. 0.00005 %
Ca max. 0.005 %
Fe max. 0.005 %
K max. 0.001 %

Na max. 0.005 %
Ni max. 0.005 %
Pb max. 0.005 %
Zn max. 0.005 %

Order-No.	Quantity
A1034,0500	500 g
A1034,1000	1 kg
A1034,10006	6 x 1 kg
A1034,5000	5 kg
A1034,9010	10 kg
A1034,9025	25 kg

Copper(II) sulfate pentahydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
Appearance of solution complies
Identity complies
Loss on drying 35.0 - 36.5 %
Organic vol. impurities complies
Chloride max. 0.01 %
Ca max. 0.005 %

Fe max. 0.003 %
K max. 0.01 %
Na max. 0.02 %
Ni max. 0.005 %
Pb max. 0.005 %

Order-No.	Quantity
A1367,0500	500 g
A1367,1000	1 kg
A1367,10006	6 x 1 kg
A1367,5000	5 kg
A1367,9010	10 kg
A1367,9025	25 kg

Copper(II)-sulfate solution see Fehling's Reagents Page 346

Copper(II) sulfate - Solutions

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 2

Copper(II) sulfate - Solution 20 %

HS-No.: 28332500

Warning

H411-H319-H302-H315
P305+P351+P338-P280-P273



Composition:

$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (A1034) 312.73 g/L

Specification:

pH (H_2O) 3.0 - 5.0 (20°C)

Order-No.	Quantity
A3348,0500	500 ml
A3348,1000	1 L
A3348,5000	5 L

Copper(II) sulfate - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

H412
P273

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3327,0500	500 ml
A3327,1000	1 L
A3327,10006	6 x 1 L
A3327,5000	5 L

Copper(II) sulfate - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

HS-No.: 38220000

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4787,0500	500 ml
A4787,1000	1 L
A4787,10006	6 x 1 L
A4787,5000	5 L

Coptisin HPLC grade

B

Bis(methylenedioxy)protoberberin
from *Chelidonium majus*

C₁₉H₁₄NO₄Cl
M = 355.78 g/mol
CAS-No.: 3486-66-6
HS-No.: 29420000

Storage: 2-8°C

Class / PG: 6.1/III
UN2811
Danger
H312-H331-H300-H373
P301+P310-P280-P270-P260



Specification:

Assay min. 99 %

Order-No.	Quantity
A5279,0010	10 mg
A5279,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Cori ester see α-D-Glucose 1-phosphate disodium salt hydrate *BioChemica* Page 378

Corn sugar see D(+)-Glucose anhydrous Page 377

Cortisol see Hydrocortisone *BioChemica* Page 420

Cosmosiin see Apigenin-7-glucoside Page 113

Cot-1 DNA, human see DNA Cot-I, human Page 294

C-reactive Protein (CRP), human

B

supplied liquid in 50 mM Tris, pH 8.0, 250
mM NaCl, 0.1 % sodium azide
from human pleural fluid

HS-No.: 30021091

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 98 %
Concentration min. 1 mg/ml

Order-No.	Quantity
A6939,0100	100 µg
A6939,0001	1 mg

Comment: **CERTIFICATION:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Creatine Kinase BB Fraction, human

B

CK-BB
supplied in 50 % glycerol, 25 mM
imidazole, 1 mM DTE, pH 6.5
from human brain

HS-No.: 35079090

Storage: -20°C

Specification:

Activity (37°C) approx. 100 U/ml
Protein approx. 1 mg/ml

Order-No.	Quantity
A6962,0100	100 µg
A6962,0250	250 µg

Comment: **Unit Definition:** One unit will transfer one micromole of phosphate from creatine phosphate to ADP per minute at 37°C. Measured at 340 nm as one equimolar amount of NADH produced by a coupled reaction. **Electrophoresis:** Only one major band (CKMB) is visible on CK agarose electrophoresis.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Creatine Kinase MB Fraction, human

B

CK-MB, CK-2
supplied in 50 % glycerol, 5 mM
Succinate, 1 mM EDTA, 1 mM DTE, 10
mM NaCl, pH 7.0
from human heart

HS-No.: 35079090

Storage: -20°C

Specification:

Assay (SDS-PAGE) min. 90 %
Activity (37°C) min. 1,000 U/ml
Electrophoresis 1 major band

Protein (by Coomassie) . min. 0.5 mg/ml

Order-No.	Quantity
A6944,0100	100 µg
A6944,0250	250 µg

Comment: **Unit Definition:** One unit will transfer one micromole of phosphate from creatine phosphate to ADP per minute at 37°C. Measured at 340 nm as one equimolar amount of NADH produced by a coupled reaction. **Electrophoresis:** Only one major band (CKMB) is visible on CK agarose electrophoresis.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Creatine Kinase MM Fraction, human

B

CK-MM
supplied in 50 % glycerol, 50 mM Tris, 2
mM DTT, pH 7.5
from human skeletal muscle

HS-No.: 35079090

Storage: -20°C

Specification:

Assay Control Grade
Activity (37°C) min. 1000 U/ml

Order-No.	Quantity
A6951,0100	100 µg
A6951,0250	250 µg

Comment: The recommended storage temperature for this product is -20°C, in order to give you the best shelf life possible. The creatine kinase may still be stored as supplied at 2-8°C for short times (less than 30 days) without loss of activity. You may make an intermediate dilution (10-fold, for example) in 50 % glycerol with Tris buffer and 1 mM DTT, pH 7.5. This solution should be stored at -20°C for best stability. The final dilution of the product should be in a buffer such as Tris buffered saline with 1 mM dithiothreitol and 1 % bovine serum albumin. This will protect the enzyme from oxidation and adsorption to plastic or glass surfaces. This solution will retain its activity for at least 24 hours at 2-8°C.

Unit Definition: One unit will transfer one micromole of phosphate from creatine phosphate to ADP per minute at 37°C. Measured at 340 nm as one equimolar amount of NADH produced by a coupled reaction. **Electrophoresis:** Only one major band (CKMB) is visible on CK agarose electrophoresis.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Creatine monohydrate BioChemica

B

N-Guanyln-*N*-methylglycine monohydrate

$C_4H_9N_3O_2 \cdot H_2O$
 $M = 149.15 \text{ g/mol}$
 CAS-No.: 6020-87-7
 HS-No.: 29252900
 EC-No.: 200-306-6

Storage: RT
 LGK: 10 - 13

Melting point 295°C (dec.)

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying approx. 12 %

Order-No.	Quantity
A3132,0025	25 g
A3132,0100	100 g

Creatine phosphate disodium salt tetrahydrate BioChemica

B

Phosphocreatine

$C_4H_8N_3Na_2O_5P \cdot 4H_2O$
 $M = 327.14 \text{ g/mol}$
 CAS-No.: 922-32-7
 HS-No.: 29299000
 EC-No.: 213-074-6

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

Solubility (20°C) 100 g/L (H₂O)**Specification:**

Assay (titr.) min. 99 %
 Solubility (10 %; H₂O) clear, colorless
 Free Creatine max. 0.5 %
 Loss on drying 20 - 25 %

Order-No.	Quantity
A2247,0001	1 g
A2247,0005	5 g
A2247,0025	25 g

***m*-Cresol purple**

C

MCP, 2',2''-
Dimethylphenolsulfonphthalein

$C_{21}H_{18}O_5S$
 $M = 382.44 \text{ g/mol}$
 CAS-No.: 2303-01-7
 HS-No.: 29349990
 EC-No.: 218-960-6

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 2

1. Transition interval .. pH 1.2 - 2.8 (rose - yellow)
2. Transition interval .. pH 7.4 - 9.0 (brown yellow - violet)

Specification:

Assay (photometr.) min. 90 %
 Loss on drying max. 1 %
 UV/VIS spectrum complies to standard

Order-No.	Quantity
A2376,0001	1 g
A2376,0005	5 g
A2376,0010	10 g

***m*-Cresol purple - Solution**

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13
 Disposal: 1

Composition:

Cresol purple (A2376) 0.04 %

Order-No.	Quantity
A0557,0100	100 ml
A0557,0500	500 ml
A0557,1000	1 L



Something missing ?

service@applichem.de

Cresol red

o-Cresolsulfonphthalein

$C_{21}H_{18}O_5S$
 $M = 382.44$ g/mol
 CAS-No.: 1733-12-6
 HS-No.: 29349990
 EC-No.: 217-064-2

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1

1. Transition interval ... pH 0.5 - 2.5 (rose
 - brown yellow)
 2. Transition interval ... pH 6.5 - 8.5
 (yellow - purple)

Cresol red Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (photometr.) min. 95 %
 Loss on drying max. 5 %
 UV/VIS spectrum complies to standard

Order-No.
A7688,0001
A7688,0005
Quantity
 1 g
 5 g

- Literature:** (1) Hoppe, B.L. *et al.* (1992) *Biotechniques* **12**, 679-680
 (2) Hodges, E. *et al.* (1997) *J. Clin. Pathol. Mol. Pathol.* **50**, 164-166
 (3) Stewart, S. & Nassuth, A. (2001) *Plant Dis.* **85**, 617-620

Gel-Loading Dyes Compatible with PCR.
 Modification of IgH PCR clonal analysis by the addition of sucrose and cresol red directly to PCR reaction mixes.
 RT-PCR Based Detection of *Rupestis stem pitting associated virus* Within Field-Grown Grapevines Throughout the Year.
 Manufacturing DNA microarrays from unpurified PCR products.

Comment: Originally, cresol red is known as a pH indicator (base-acid indicator) with transitions in the pH range 0.2 - 2.5 (red to yellow) and pH 6.5 - 8.5 (yellow to purple; see Merck Index 13. Ed. (2001) Monograph 2607; pages 451-452). In the analysis of nucleic acids, cresol red has proven of being a good tracking dye. *Taq* polymerase is not inhibited (1). Therefore, the dye with a yellow color at pH 7.2, may be included in such reactions. If sucrose is included additionally the samples may be loaded onto an analytical gel directly after the PCR reaction (1). The dye itself migrates with a size of approx. 300 bp through a 2 % agarose gel (1) between the commonly used dyes xylene cyanol and bromophenol blue, both of them would inhibit *Taq* polymerase. Since cresol red isn't seen as a shadow in UV light, analysis of gels after staining with ethidium bromide is not impaired (4).
Solubility: Cresol red is soluble in alcohol. Aqueous solutions may be prepared by dissolving it in NaOH. The final concentration of NaOH in a 10 mM cresol red stock solution is approx. 10 mM as well. The working concentration is 0.1 - 0.2 mM (ref. 2-5). Solutions are stored at ambient temperature.

Cresol red pure

C

Specification:

Assay (photometr.) min. 95 %
 Loss on drying max. 5 %
 UV/VIS spectrum complies to standard

Order-No.
A2378,0001
A2378,0005
A2378,0010
A2378,0025
Quantity
 1 g
 5 g
 10 g
 25 g

Cresol red - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13
 Disposal: 1

WGK: 1

Composition:

Cresol red (A2378) 0.1 %

Order-No.
A0580,0100
A0580,0500
Quantity
 100 ml
 500 ml

o-Cresolsulfonphthalein see Cresol red Page 247

Cross reactivity reduction see Immunoassay Buffer Page 446

Crystal violet (C.I. 42555)

C

Pyocyanin coeruleum,
Hexamethylene pararosaniline chloride,
Methyl violet 10 B, *Gentian violet*

$C_{25}H_{30}ClN_3$
 $M = 407.99$ g/mol
 CAS-No.: 548-62-9
 HS-No.: 32041300
 EC-No.: 208-953-6

Storage: RT
 LGK: 10 - 13

Class / PG: 9/III
 UN3077
 WGK: 3
 Danger
 H410-H318-H351-H302
 P305+P351+P338-P273-P308+P313



Melting range 189 - 194°C
 Solubility (25°C) 16 g/L (H₂O)
 Transition interval ... pH 0.8 - 2.6
 (yellow - blue
 violet)

Specification:

Assay (photometr.) min. 85 %
 λ_{max} 580 - 595 nm
 E 1 %/1 cm, λ_{max} 2000 - 2450
 Loss on drying (110°C) max. 10 %

Order-No.
A0691,0025
A0691,0100
A0691,0250
Quantity
 25 g
 100 g
 250 g

- Literature:** (1) Yang, Y.-I. *et al.* (2001) *Electrophoresis* **22**, 855-859

Counter-dye staining method for DNA in agarose gels using crystal violet and methyl orange.

Comment: The commonly used DNA staining method employing ethidium bromide (EtBr) has two major drawbacks: The DNA has to be illuminated with UV-light damaging the DNA and the laboratory personnel and it is a strong mutagen. Therefore, staining methods employing visible light and less hazardous dyes are preferable. Crystal violet (CV) has a positively charged ammonium ion and three aromatic rings, binding to the negatively charged phosphate backbone of DNA. The optimal concentration for staining DNA in agarose gels turned out to be 0.001 % in the pH range of 6 - 8. Staining for 30 minutes resulted in a detection limit of 16 ng DNA. Thus, CV staining is four times less sensitive than EtBr staining. Combination of CV with the negatively charged counterion-dye methyl orange (MO), having 2 aromatic rings and one negatively charged sulfonic group, sensitivity could be improved to 8 ng detection limit. Under identical conditions (see above), CV was applied at a concentration of 0.0025 % and MO of 0.0005 %, respectively. Stock solutions were made up each at 0.25 %.
 Since both dyes are easily removed (destaining for 2 hours with 50 % ethanol, subsequently 1 hour equilibration with distilled water), DNA was successfully applied in PCR assays and cloning experiments (ref. 1).

Crystal violet - Solution

C

Ready-to-use indicator solution in acetic acid
glacial

HS-No.: 38220000

Storage: RT
LGK: 8 B

Class / PG: 8(3)/II
UN2920
WGK: 1
Danger
H312-H226-H314
P280-P260-P305+P351+P338



Composition:
Crystal violet (A0691) 0.5 %

Order-No.	Quantity
A0577,0100	100 ml
A0577,0500	500 ml

CsCl see Cesium chloride Page 192
CSF-1 see rHu M-CSF Page 522
CTAB see Cetyltrimethylammonium bromide Page 194
CTAB extraction solution see CTAB - Lysis buffer *BioChemica* Page 248

CTAB - Lysis buffer *BioChemica*

B

Lysis buffer with CTAB, CTAB extraction
solution

HS-No.: 38220000

Storage: RT

WGK: 2

Composition:
CTAB 20.00 g/L (2 % w/v)
EDTA · Na₂ · 2H₂O 7.44 g/L (20 mM)
Sodium chloride 81.82 g/L (1.4 M)
Tris ultrapure 12.11 g/L (100 mM)

Specification:
pH (20°C) 8.0 ± 0.1

Order-No.	Quantity
A4150,0500	100 ml
A4150,1000	1 L

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (2001) *Current Protocols in Molecular Biology*: Page 2.3.5 (Suppl. 45) Greene Publishing & Wiley-Interscience, New York.

Comment: The cationic detergent cetyltrimethylammonium bromide (CTAB) is used to liberate and complex with total cellular nucleic acids. CTAB forms an insoluble complex with nucleic acids when the initial NaCl concentration is lowered to ~0.5 M. Polysaccharides, phenolic compounds and other enzyme-inhibiting contaminants found in plant cells are efficiently removed in the supernatant because most do not precipitate under these conditions (1).

CTC see Cyanodityltetrazolium chloride *BioChemica* Page 249
C-terminal Fragment of Glucagon 1-37 (Oxyntomodulin) H-Lys-Arg-Asn-Lys-Asn-Asn-Ile-Ala-OH see Glucagon Fragment 30-37 Page 375

rHu CTGF



B

recombinant Human Connective Tissue
Growth Factor
sterile filtered and lyophilized from 1.0
mg/ml in 10 mM sodium acetate buffer,
pH 6.0
from *E. coli*

M = 11.2 kDa
HS-No.: 29371900

Storage: -20°C

reconstitute at 0.1 mg/ml with 5 mM sodium acetate buffer, pH 6.0

Specification:
Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8240,0002	2 µg
A8240,0010	10 µg
A8240,0100	100 µg

Comment: CTGF belongs to the CCN family of secreted proteins. CTGF is a member of cysteine rich regulatory proteins playing an important role in mitogenic and chemotaxis. Each protein has an IGF-binding domain, a thrombospondin type 1 domain and cysteine knot region. CTGF has multiple effects on development and differentiation. H-CTGF is comprised of 98 amino acids with a molecular weight of 11.2 kDa.

CTLA-8 see rR IL-17A Page 441
CTP disodium salt see Cytidine 5'-triphosphoric acid disodium salt dihydrate *BioChemica* Page 256
CuCl see Copper(I) chloride pure Page 242
Cu(NO₃)₂ · 3H₂O see Copper(II) nitrate trihydrate pure Page 243
Cupral see Sodium diethyldithiocarbamate trihydrate *BioChemica* Page 730

Curcumin HPLC grade

B

Diferuloylmethane
from *Curcuma longa*

C₂₁H₂₀O₆
M = 368.39 g/mol
CAS-No.: 458-37-7
HS-No.: 32030010
EC-No.: 207-280-5

Storage: 2-8°C

Specification:
Assay min. 98 %

Order-No.	Quantity
A5277,0020	20 mg
A5277,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

CuSO₄ · 5H₂O see Copper(II) sulfate pentahydrate Page 244
CXCL10 see rM IP-10 Page 458
rM CXCL12 see rM SDF-1α Page 705
Cyanidanon-4'-methyl ether see Hesperetin HPLC grade Page 405

Cyanidin chloride HPLC grade



B

Cyanidol
from *Rosa centifolia*

$C_{15}H_{11}ClO_6$
 $M = 322.70$ g/mol
CAS-No.: 528-58-5
HS-No.: 29329900
EC-No.: 208-438-6

Storage: 2-8°C

Specification:

Assay min. 97 %

Order-No.
A8674,0020

Quantity
20 mg

Cyanidin-3,5-diglucoside see Cyanin chloride Page 249

Cyanidin-3-glucoside chloride see Kuromanin chloride HPLC grade Page 474

Cyanidin-3-rutinoside HPLC grade



B

Antirrhin, Keracyanin
from *Ribes nigrum*

$C_{21}H_{21}ClO_{11}$
 $M = 630.98$ g/mol
CAS-No.: 18719-76-1
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.
A8971,0020
A8971,0050

Quantity
20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Cyanidol see Cyanidin chloride HPLC grade Page 249

Cyanin chloride

Cyanidin-3,5-diglucoside
from *Rosa centifolia*

$C_{27}H_{31}ClO_{16}$
 $M = 646.96$ g/mol
CAS-No.: 2611-67-8
HS-No.: 29389090

Storage: 2-8°C

Cyanin chloride HPLC grade

B

Specification:

Assay min. 98 %

Order-No.
A5276,0020
A5276,0050

Quantity
20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Cyanin chloride pure

B

Specification:

Assay min. 95 %

Order-No.
A6905,0100

Quantity
100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Cyanocobalamin see Vitamin B₁₂ Page 856

Cyanodityltetrazolium chloride BioChemica

B

CTC

$C_{16}H_{14}ClN_5$
 $M = 311.80$ g/mol
CAS-No.: 102568-47-8
HS-No.: 29341000

Storage: 2-8°C
protected from light

Class / PG: 6.1/II
UN2811
Danger
H301
P280



Melting point 230°C

Specification:

Assay min. 95 %

Order-No.
A4286,0100
A4286,0001

Quantity
100 mg
1 g

Comment: The 5-cyano-2,3-dityl tetrazolium chloride (CTC) is a monotetrazolium redox dye which produces a fluorescent formazan (CTF) when it is chemically or biologically reduced. The CTF is deposited intracellularly. CTC is employed as a cellular redox indicator of respiratory (i.e. electron transport) activity in cytochemical experiments and for microscopic visualization of actively respiring bacteria in native and nutrient-amended environmental samples.

Cyanol FF see Xylene cyanol FF (C.I. 42135) Page 872

Cyanosine see Phloxine B (C.I. 45410) Microscopy grade Page 622

α-Cyclodextrin BioChemica

B

Schardinger-α-Dextrin,
Cyclomaltohexaose

C₃₆H₆₀O₃₀
M = 972.86 g/mol
CAS-No.: 10016-20-3
HS-No.: 29400000
EC-No.: 233-007-4

Storage: RT
LGK: 10 - 13
Disposal: 3

Warning
H319
P305+P351+P338



Melting range 295 - 300°C

Specification:

Assay min. 98 %
α20°C/D; 10 %, H₂O +145° - +151°

Order-No.	Quantity
A2146,0005	5 g
A2146,0010	10 g
A2146,0025	25 g

Comment: α-Cyclodextrin will be cleaved in an acidic environment. It is more sensitive to cleavage than β- and γ-Cyclodextrin.

β-Cyclodextrin BioChemica

B

Schardinger-β-Dextrin,
Cyclomaltoheptaose

C₄₂H₇₀O₃₅
M = 1135.00 g/mol
CAS-No.: 7585-39-9
HS-No.: 29400000
EC-No.: 231-493-2

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting range 290 - 300°C

Specification:

Assay min. 98 %
α20°C/D; 1.5 %, H₂O +159° - +165°
Loss on drying 10 - 13 %

Order-No.	Quantity
A2147,0025	25 g
A2147,0100	100 g

γ-Cyclodextrin BioChemica

B

Schardinger-γ-Dextrin, Dextrin,
Cyclomaltooctaose

C₄₈H₈₀O₄₀
M = 1297.14 g/mol
CAS-No.: 17465-86-0
HS-No.: 29400000
EC-No.: 241-482-4

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting range > 300°C

Specification:

Assay min. 98 %
α20°C/D; 1 %, H₂O +169° - +175°
Loss on drying 9 - 14 %

Order-No.	Quantity
A2148,0500	500 mg
A2148,0001	1 g
A2148,0005	5 g

1,4-Cyclohexadiene-3,6-dione see *p*-Benzoquinone for synthesis Page 134

Cyclohexan : Ethanol 1 : 2, v/v - Mixture of solvents see Mixture of solvents (Cyclohexane : Ethanol 1 : 2, v/v) p. A. Page 547

Cyclohexane

Hexahydrobenzene, Naphthene

C₆H₁₂
M = 84.16 g/mol
CAS-No.: 110-82-7
HS-No.: 29021100
EC-No.: 203-806-2

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1145
WGK: 1
Danger
H225-H410-H336-H304-H315
P331-P210-P240-P273-P403+P235-
P301+P310



Boiling point 80°C

Density (d 20°C/4°C) .. 0.779

Melting point 6°C

n 20°C/D 1.4266

Cyclohexane Residue analysis grade

C

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.005 %
Water (K.F.) max. 0.02 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1573,2500	2.5 L
A1573,25004	4 x 2,5 L

Cyclohexane HPLC grade

C

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %
A (1 cm/water HPLC grade)
210 nm max. 0.225
220 nm max. 0.10
230 nm max. 0.025
240 nm max. 0.01
250 nm max. 0.005

Order-No.	Quantity
A1576,1000	1 L
A1576,10006	6 x 1 L
A1576,2500	2.5 L
A1576,25004	4 x 2,5 L

Cyclohexane p. A.

C

Specification:

Assay (HPLC)	min. 99.5 %	Mg	max. 0.00001 %
Non-volatile matter	max. 0.001 %	Na	max. 0.0001 %
Total P	max. 0.00001 %	Pb	max. 0.000005 %
Total Si	max. 0.00001 %	Zn	max. 0.00002 %
Benzene	max. 0.005 %		
Cyclohexene	max. 0.005 %		
Water (K.F.)	max. 0.01 %		
Ca	max. 0.00005 %		
Cu	max. 0.00005 %		
Fe	max. 0.00002 %		
K	max. 0.00002 %		

Order-No.	Quantity
A0781,0500	500 ml
A0781,1000	1 L
A0781,10006	6 x 1 L
A0781,2500	2.5 L
A0781,25004	4 x 2,5 L
A0781,5000	5 L
A0781,9010	10 L
A0781,9025BK	25 L
A0781,9025PE	25 L

Cyclohexane pure

C

Specification:

Assay (HPLC)	min. 98 %
Non-volatile matter	max. 0.05 %
Water (K.F.)	max. 0.05 %

Order-No.	Quantity
A0782,1000	1 L
A0782,10006	6 x 1 L
A0782,2500	2.5 L
A0782,25004	4 x 2,5 L
A0782,5000	5 L
A0782,9010	10 L
A0782,9025BK	25 L
A0782,9025PE	25 L

Cyclohexane Technical grade

C

Specification:

Assay (HPLC)	min. 98 %

Order-No.	Quantity
A4493,2500	2.5 L
A4493,25004	4 x 2,5 L
A4493,5000	5 L
A4493,9010	10 L
A4493,9025BK	25 L
A4493,9025PE	25 L

Cyclohexane D₁₂

C

Boiling point	80°C
Density (d 20°C/4°C)	0.89
Melting point	6°C

C ₆ D ₁₂
M = 86.26 g/mol
CAS-No.: 1735-17-7
HS-No.: 28459010
EC-No.: 217-077-3

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1145
WGK: 1
Danger
H304-H410-H225-H315-H336
P301+P310-P210-P273-P240-
P403+P235-P331



Specification:

Deuteration degree	min. 99.7 %

Order-No.	Quantity
DS-6,0001	1 ml
DS-6,0005	5 ml

Cyclohexanesulfamic acid sodium salt see Sodium cyclamate pure Ph. Eur. Page 729

Cyclohexanol for synthesis

C

Hexaline, Hexahydrophenol

C ₆ H ₁₂ O
M = 100.16 g/mol
CAS-No.: 108-93-0
HS-No.: 29061200
EC-No.: 203-630-6

Storage: RT
LGK: 3 B
Disposal: 1

WGK: 1
Warning
H302-H315-H335-H332
P262



Boiling point	161°C
Density (d 20°C/4°C)	0.94
Melting point	24°C
n 20°C/D	1.4656

Specification:

Assay (HPLC)	min. 99 %
Water (K.F.)	max. 0.25 %

Order-No.	Quantity
A0783,1000	1 L
A0783,10006	6 x 1 L
A0783,2500	2.5 L
A0783,25004	4 x 2,5 L
A0783,5000	5 L
A0783,9010	10 L

Cyclohexanone

Boiling point 155°C
Density (d 20°C/4°C) .. 0.95
Melting range -32 - -26°C
Solubility (20°C) 80 g/L (H₂O)

C₆H₁₀O
M = 98.15 g/mol
CAS-No.: 108-94-1
HS-No.: 29142200
EC-No.: 203-631-1

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1915
WGK: 1
Warning
H226-H332
P262



Cyclohexanone p. A.

Specification:

Assay (HPLC) min. 99.5 %
Non-volatile matter max. 0.005 %
Water (K.F.) max. 0.1 %
Co max. 0.0001 %
Cr max. 0.0001 %

Fe max. 0.0001 %
Ni max. 0.0001 %
Pb max. 0.0001 %
Zn max. 0.0001 %

Order-No.	Quantity
A6331,0500	500 ml
A6331,1000	1 L
A6331,2500	2.5 L
A6331,25004	4 x 2,5 L

C

Cyclohexanone pure

Specification:

Assay (HPLC) min. 99.5 %
Non-volatile matter max. 0.05 %
Water (K.F.) max. 0.2 %
Pb max. 0.001 %

Order-No.	Quantity
A2553,0500	500 ml
A2553,1000	1 L
A2553,2500	2.5 L
A2553,25004	4 x 2,5 L

C

Cyclohexanone for synthesis

Specification:

Assay (titr.) min. 98 %
Non-volatile matter max. 0.1 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A0446,1000	1 L
A0446,2500	2.5 L
A0446,5000	5 L

C

Cyclohexatriene see Benzene Page 132

Cyclohexatriene deuterated see Benzene D₆ Page 132

Cyclohexene for synthesis

Tetrahydrobenzene
stabilized with approx. 0.01 % BHT

C₆H₁₀
M = 82.15 g/mol
CAS-No.: 110-83-8
HS-No.: 29021900
EC-No.: 203-807-8

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN2256
WGK: 1
Danger
H304-H411-H225-H302
P273-P260-P210



Boiling point 83°C
Density (d 20°C/4°C) .. 0.81
Melting point -104°C
n 20°C/D 1.4460

Specification:

Assay (HPLC) min. 99 %
Water (K.F.) max. 0.25 %

Order-No.	Quantity
A0784,0500	500 ml
A0784,1000	1 L
A0784,10006	6 x 1 L
A0784,2500	2.5 L
A0784,25004	4 x 2,5 L

Cycloheximide BioChemica

Actidion

Melting point 106 - 112°C
Solubility (20°C) 21 g/L (H₂O)

C₁₅H₂₃NO₄
M = 281.36 g/mol
CAS-No.: 66-81-9
HS-No.: 29419000
EC-No.: 200-636-0

Storage: RT
LGK: 6.1 A

Class / PG: 6.1/I
UN2811
WGK: 3
Danger
H360D-H411-H341-H300
P280-P309+P311-P262-P302+P352



Specification:

Assay min. 98 %
α20°C/D; 1 %, CHCl₃ -26° - -32°

Order-No.	Quantity
A0879,0001	1 g
A0879,0005	5 g
A0879,0025	25 g

Literature: (1) Oberg, T.G. *et al.* (1971) *J. Biol. Chem.* **246**, 174-181

(2) Wilson, T. & Treisman, R. (1988) *Nature* **336**, 396-399

(3) Subramaniam, M. *et al.* (1989) *Nature* **340**, 64-66

The mechanism by which cycloheximide and related glutarimide antibiotics inhibit peptide synthesis in reticulocyte ribosomes. Removal of poly(A) and consequent degradation of c-fos - mRNA facilitated by 3' AU-rich sequences. Negative regulation of serum-responsive enhancer elements.

Comment: Cycloheximide belongs to the group of the glutarimide antibiotics and has been isolated from *Streptomyces griseus*. It inhibits the binding of the aminoacyl-tRNA to the ribosomes, the transfer of amino acids from the aminoacyl-tRNA to the growing peptide chain and the release of the deacylated tRNA from the donor site of the ribosomes, as well as the translocation of the aminoacyl-tRNA from the acceptor site to the donor site of the ribosomes. The initiation of the peptide synthesis at reticulocyte ribosomes is stronger influenced, than the elongation of the peptide. The degradation and the reconstitution of polysomes is inhibited in several systems (1). The degradation of mRNA, as it has been shown for the c-fos mRNA, can be inhibited by cycloheximide, too (2). Inhibition of the protein biosynthesis leads, in the case of the so-called 'immediate early genes', to a superinduction by serum, with other words, to an increased transcription rate in response to the stimulus (3).

Stability and solubility: Cycloheximide is watersoluble (2.1 g/100 ml at 2°C) or soluble in amyl acetate (7 g/100 ml). It is also soluble in chloroform, ether, acetone, methanol or ethanol. As a stock solution, prepare a filter-sterilized solution with a concentration of 10 mg/ml and store at -20°C. The working concentration is 10 µg/ml. Cycloheximide is rapidly inactivated at room temperature by diluted alkali. It is relatively heat-stable and acid-stable. Boiling at pH 7 for 15 minutes will not inactivate Cycloheximide, while boiling for one hour will destroy it. At pH 2 it is not destroyed by boiling for 1 hour.

2-(N-Cyclohexylamino)-ethanesulfonic acid see CHES Page 199
 3-(Cyclohexylamino)-2-hydroxy-1-propane sulfonic acid see CAPSO Buffer grade Page 185
 3-(Cyclohexylamino)-1-propanesulfonic acid see CAPS Page 184
 3-(Cyclohexylamino)-1-propanesulfonic acid sodium salt see CAPS sodium salt Buffer grade Page 185

1,2-Cyclohexylene dinitrilotetraacetic acid monohydrate p. A.

C

$C_{14}H_{22}N_2O_8 \cdot H_2O$ Storage: RT WGK: 3*
 $M = 364.36 \text{ g/mol}$ LGK: 10 - 13
 CAS-No.: 87095-89-4 Disposal: 3
 HS-No.: 29224985
 EC-No.: 236-308-9

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 pH (1 %; H_2O) 2.0 - 3.5

Water (K.F.) 4.6 - 5.6 % Fe max. 0.002 %
 Sulfate max. 0.01 % Mn max. 0.0005 %
 Cu max. 0.0005 % Zn max. 0.0005 %

Order-No. **Quantity**
A4915,0025 25 g
A4915,0100 100 g

Cycloleucyl-N-methylalanylglucyl-N-methyl dehydrophenylalanine see Tentoxin *BioChemica* Page 801
 Cyclomaltoheptaose see β -Cyclodextrin *BioChemica* Page 250
 Cyclomaltohexaose see α -Cyclodextrin *BioChemica* Page 250
 Cyclomaltooctaose see γ -Cyclodextrin *BioChemica* Page 250

Cyclopiazonic acid *BioChemica*

B

from *Penicillium griseofulvum*

$C_{20}H_{20}N_2O_3$ Storage: -20°C
 $M = 336.38 \text{ g/mol}$
 CAS-No.: 18172-33-3
 HS-No.: 29339980

Class / PG: 6.1/II
 UN2811
 Danger
 H300
 P301+P310-P264



Solubility (10 mg/ml MeOH)
 clear, bright
 yellow

Specification:

Assay (TLC) approx. 98 %
 λ_{max} 223, 260 nm

Order-No. **Quantity**
A7863,0005 5 mg
A7863,0010 10 mg
A7863,0050 50 mg

Comment: Cyclopiazonic acid is a pentacyclic alkaloid (indole tetramic acid) from *Penicillium* and *Aspergillus* species. The mycotoxin is a reversible inhibitor of endoplasmic reticulum Ca^{2+} ATPase. It is soluble in methanol (10 mg/ml) and DMSO (20 mg/ml).

Cyclosan see Hypericin HPLC grade Page 430

D-Cycloserine

D-4-Amino-3-isoxazolidinone,
 Oxamycine

$C_3H_6N_2O_2$ Storage: RT
 $M = 102.10 \text{ g/mol}$ LGK: 10-13
 CAS-No.: 68-41-7
 HS-No.: 29419000
 EC-No.: 200-688-4

Melting point 145°C

D-Cycloserine *BioChemica*

B

Specification:

Assay min. 95 %
 $\alpha/20^\circ C/D; 1 \text{ \% } H_2O$ +109° - +112°
 Loss on drying max. 1 %
 Residue on ignition max. 0.5 %
 Solubility (2 %; H_2O) clear, colorless

pH (10 %; H_2O ; 20°C) .. 5.5 - 6.5

Order-No. **Quantity**
A1943,0001 1 g
A1943,0005 5 g
A1943,0010 10 g
A1943,0025 25 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001. *Current Protocols in Molecular Biology*. Supplement 59, Page 1.4.2. John Wiley & Sons, New York.

Comment: D-Cycloserine was isolated from different *Streptomyces* species. It is a D-4-Amino-3-isoxazolidinone and acts competitive, antagonistic against D-Alanine. Cycloserine is more active against gram positive than gram negative bacteria, besides several Spirochaetae, Rickettsia, different Protozoa and Chlamydiaeae. Fungi are resistant. It is active (bacteriostatic) against extra- and intracellular located bacteria. The optimum pH value is in the range of pH 6.4 - 7.4. As a competitive antagonist of D-Alanine, one component of bacterial cell walls, several enzymes are inhibited. Inhibition of Alanine Racemase and Alanine Synthetase results in the accumulation of an incomplete cell wall component (nucleomucopeptide) and thereby damage of the cell wall, since these enzymes cannot process the component anymore. Several Transaminases are target of Cycloserine as well. **Solubility and Stability:** D-Cycloserine is readily water-soluble (100 mg/ml), slightly soluble in methanol and almost insoluble in organic solvents. It is more stable at alkaline pH (pH 8 - 10), than in the neutral or acidic pH range. At pH 7 and 37°C, it will be inactivated by 25 % after 7 days and by 38 % after 14 days. Sodium carbonate-buffered, aqueous solutions (pH 10) are stable for approximately one week at +4°C (The Merck Index, 13th Edition (2001), Monography 2780). According to ref. 1, stock solutions may be prepared at a concentration of 10 mg/ml in 0.1 M sodium phosphate buffer pH 8. They should be made immediately before use (1). The working concentration is 200 µg/ml.

D-Cycloserine pure USP

C

Specification:

Activity min. 900 µg/mg
 $\alpha/20^\circ C/D; 5 \text{ \% } 2 \text{ N NaOH}$ +108° - +114°
 Condensation products max. 0.80 (285 nm)
 Crystallinity complies

Identity complies
 Loss on drying max. 1.0 %
 Residue on ignition max. 0.5 %
 pH (10 %; H_2O ; 20°C) .. 5.5 - 6.5

Order-No. **Quantity**
A7039,0001 1 g
A7039,0005 5 g
A7039,0010 10 g

Cynarin HPLC grade

B

from *Cynara scolymus*

$C_{25}H_{24}O_{12}$
 $M = 516.46$ g/mol
CAS-No.: 1182-34-9
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A3965,0010	10 mg
A3965,0010DOC	10 mg
A3965,0020	20 mg
A3965,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Cynarosid see Luteolin-7-glucoside HPLC grade Page 498

Cysteamine hydrochloride BioChemica

B

2-Mercaptoethylamine hydrochloride

$C_2H_7NS \cdot HCl$
 $M = 113.61$ g/mol
CAS-No.: 156-57-0
HS-No.: 29309099
EC-No.: 205-858-1

Storage: RT
under argon
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr.) min. 98 %
Solubility (10 %; H_2O) clear, colorless

Order-No.	Quantity
A1546,0025	25 g
A1546,0100	100 g

L-Cysteine

L-2-Amino-3-mercaptopropionic acid

$C_3H_7NO_2S$
 $M = 121.16$ g/mol
CAS-No.: 52-90-4
HS-No.: 29309013
EC-No.: 200-158-2

Storage: RT
LGK: 10 - 13

WGK: 1
Warning
H302
P330-P264-P301+P312


Solubility (25°C) 280 g/L (H_2O)

L-Cysteine Cell culture grade

B

Specification:

Pyrogen test complies	Ammonium max. 0.1 %	Fe max. 0.001 %
Assay (titr.) min. 99 %	Chloride max. 0.02 %	Pb max. 0.001 %
$\alpha 20^\circ C/D$; 5 %, HCl +8° - +9.5°	Sulfate max. 0.02 %	
Other amino acids max. 0.5 %	As max. 0.0001 %	

♦ All amino acids from AppliChem are of non-animal origin!

Order-No.	Quantity
A3634,0050	50 g
A3634,0100	100 g
A3634,0500	500 g

L-Cysteine BioChemica

B

Specification:

Assay (titr.) min. 99 %	Ammonium max. 0.1 %
$\alpha 20^\circ C/D$; 5 %, HCl +8° - +9.5°	Chloride max. 0.02 %
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.02 %
Insoluble matter complies	
Other amino acids max. 0.5 %	

♦ All amino acids from AppliChem are of non-animal origin!

Order-No.	Quantity
A3694,0050	50 g
A3694,0100	100 g
A3694,0500	500 g
A3694,1000	1 kg

L-Cysteine pure DAB

C

Specification:

Assay (titr.) 98.0 - 101.0 %	Loss on drying max. 0.5 %	Chloride max. 0.04 %
$\alpha 20^\circ C/D$; 5 %, HCl +8° - +9.5°	Sulfated ash max. 0.1 %	Sulfate max. 0.03 %
Appearance of solution complies	pH (2.5 %; H_2O) 4.5 - 6.0	Fe max. 0.002 %
Heavy metals (as Pb) max. 0.001 %	Other amino acids max. 0.5 %	
Identity complies	Ammonium max. 0.02 %	

♦ All amino acids from AppliChem are of non-animal origin!

Order-No.	Quantity
A1425,0050	50 g
A1425,0100	100 g
A1425,0500	500 g
A1425,1000	1 kg

L-Cysteine hydrochloride monohydrate

L-2-Amino-3-mercaptopropionic acid
hydrochloride monohydrate

$C_3H_7NO_2S \cdot HCl \cdot H_2O$
 $M = 175.64 \text{ g/mol}$
CAS-No.: 7048-04-6
HS-No.: 29309016
EC-No.: 200-157-7

Storage: RT
LGK: 10 - 13

WGK: 1

Solubility (25°C) 650 g/L (H₂O)

L-Cysteine hydrochloride monohydrate Cell culture grade

B

Specification:

Pyrogen test complies	Ammonium max. 0.1 %	Pb max. 0.001 %
Assay (titr.) min. 99 %	Sulfate max. 0.02 %	
α 20°C/D; 8 %, 6 M HCl +5.7° - +6.8°	As max. 0.0001 %	
Other amino acids max. 0.5 %	Fe max. 0.001 %	

Order-No.	Quantity
A3665,0050	50 g
A3665,0100	100 g
A3665,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Cysteine hydrochloride monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %	Ammonium max. 0.1 %
α 20°C/D; 8 %, 6 M HCl +5.7° - +6.8°	Sulfate max. 0.02 %
Heavy metals (as Pb) max. 0.001 %	
Insoluble matter complies	
Other amino acids max. 0.5 %	

Order-No.	Quantity
A3698,0050	50 g
A3698,0100	100 g
A3698,0500	500 g
A3698,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Cysteine hydrochloride monohydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %	Identity complies	Sulfate max. 0.03 %
α 20°C/D; 8 %, HCl 250 g/L +5.5° - +7.0°	Loss on drying 8 - 12 %	Fe max. 0.002 %
α 25°C/D; 8 %, 6 M HCl +5.7° - +6.8°	Organic vol. impurities complies	
Appearance of solution complies	Sulfated ash max. 0.1 %	
Chromatogr. purity complies	Other amino acids max. 0.5 %	
Heavy metals (as Pb) max. 0.001 %	Ammonium max. 0.02 %	

Order-No.	Quantity
A1702,0050	50 g
A1702,0100	100 g
A1702,0500	500 g
A1702,1000	1 kg
A1702,10006	6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Cystine

3,3'-Dithio-bis-(2-aminopropionic acid)

$C_6H_{12}N_2O_4S_2$
 $M = 240.30 \text{ g/mol}$
CAS-No.: 56-89-3
HS-No.: 29309013
EC-No.: 200-296-3

Storage: RT
LGK: 10 - 13

Solubility (25°C) 0.11 g/L (H₂O)

L-Cystine Cell culture grade

B

Specification:

Pyrogen test complies	Chloride max. 0.02 %
Assay (HPLC) min. 99 %	Sulfate max. 0.02 %
α 20°C/D; 2 %, 1 M HCl -218° - -224°	As max. 0.0001 %
Other amino acids max. 0.5 %	Fe max. 0.001 %
Ammonium max. 0.1 %	Pb max. 0.001 %

Order-No.	Quantity
A3671,0050	50 g
A3671,0100	100 g
A3671,0500	500 g
A3671,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Cystine BioChemica

B

Specification:

Assay (HPLC) min. 99 %	Ammonium max. 0.1 %
α 20°C/D; 2 %, 1 M HCl -218° - -224°	Chloride max. 0.02 %
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.02 %
Insoluble matter complies	
Other amino acids max. 0.5 %	

Order-No.	Quantity
A3685,0050	50 g
A3685,0100	100 g
A3685,0500	500 g
A3685,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Cystine pure Ph. Eur.

C

Specification:

Assay (titr.) 98.5 - 101.0 %	Loss on drying max. 0.5 %	Sulfate max. 0.03 %
α 20°C/D; 2 %, 1 M HCl -218° - -224°	Sulfated ash max. 0.1 %	Fe max. 0.001 %
Appearance of solution complies	Other amino acids max. 0.2 %	
Heavy metals (as Pb) max. 0.001 %	Ammonium max. 0.02 %	
Identity complies	Chloride max. 0.02 %	

Order-No.	Quantity
A1703,0100	100 g
A1703,0500	500 g
A1703,1000	1 kg
A1703,10006	6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Cystine dihydrochloride pure

C

3,3'-Dithio-bis-(2-aminopropionic acid)
hydrochloride
 $C_6H_{12}N_2O_4S_2 \cdot 2HCl$
 $M = 313.22 \text{ g/mol}$
 CAS-No.: 30925-07-6
 HS-No.: 29309016
 EC-No.: 250-391-9

Storage: RT

Specification:
 Assay (titr.) min. 98 %
 α 20°C/D; 0.1 %, H_2O -220° - -222°
 Residue on ignition max. 0.1 %

 Solubility (0.1 %; 0.05 M NaOH) (tate)
 clear, colourless
 Water (K.F.) max. 1.0 %
 pH (0.1 %; H_2O ; 25°C) 2.0 - 3.0 (precipi-)
Order-No.

A0622,0050

Quantity

50 g

A0622,0100

100 g

♦ All amino acids from AppliChem are of non-animal origin!

Cytidine 5'-diphosphocholine sodium salt see Citicoline sodium salt *BioChemica* Page 213**Cytidine *BioChemica***

B

Cytosine 1- β -D-ribofuranoside
 $C_9H_{13}N_3O_5$
 $M = 243.22 \text{ g/mol}$
 CAS-No.: 65-46-3
 HS-No.: 29349990
 EC-No.: 200-610-9
Storage: RT
LGK: 10 - 13

WGK: 3

Melting point 216°C (dec.)

Specification:
 Assay min. 99 %
 α 20°C/D; 1 %, H_2O +30° - +35°
 Heavy metals (as Pb) max. 0.001 %

 pK₁ (20°C) 4.2
 pK₂ (20°C) 12.3
Order-No.

A0814,0010

Quantity

10 g

A0814,0025

25 g

Cytidine 5'-diphosphoric acid trisodium salt dihydrate *BioChemica*

B

CDP trisodium salt dihydrate

 $C_9H_{12}N_3Na_3O_{11}P_2 \cdot 2H_2O$
 $M = 505.16 \text{ g/mol}$
 CAS-No.: 34393-59-4
 HS-No.: 29349990
 EC-No.: 251-990-8

Storage: -20°C

Specification:
 Assay min. 95 %
 α 20°C/D; 1 %, 0.5 M Na_2HPO_4
 +11° - +15°

 CMP max. 1.5 %
 CTP max. 1.5 %
Order-No.

A3781,0100

Quantity

100 mg

A3781,0500

500 mg

Cytidine 5'-monophosphoric acid disodium salt hydrate *BioChemica*

B

CMP disodium salt

 $C_9H_{12}N_3Na_2O_9P \cdot xH_2O$
 $M = 367.20 \text{ g/mol} \cdot xH_2O$
 CAS-No.: 6757-06-8
 HS-No.: 29349990
 EC-No.: 229-819-3
Storage: 2-8°C
LGK: 10-13

WGK: 1

Specification:
 Assay min. 99 %
 α 20°C/D; 1 %, 0.5 M Na_2HPO_4
 +5° - +7°
Order-No.

A3788,0001

Quantity

1 g

A3788,0005

5 g

Cytidine 5'-triphosphoric acid disodium salt dihydrate *BioChemica*

B

CTP disodium salt

 $C_9H_{14}N_3Na_2O_{14}P_3 \cdot 2H_2O$
 $M = 563.14 \text{ g/mol}$
 CAS-No.: 81012-87-5
 HS-No.: 29349990
 EC-No.: 252-849-3
Storage: -20°C
Shipment: wet ice
LGK: 10 - 13
Disposal: 3**Specification:**
 Assay min. 95 %
 Loss on drying max. 15 %
Order-No.

A2145,0100

Quantity

100 mg

A2145,0500

500 mg

Cytisine HPLC grade

B

Baptitoxin, Laburnin, Ulexin, Sophorin
from *Laburnum anagyroides*
 $C_{11}H_{14}N_2O$
 $M = 190.25 \text{ g/mol}$
 CAS-No.: 485-35-8
 HS-No.: 29399900
 EC-No.: 207-616-0

Storage: 2-8°C

 Class / PG: 6.1/III
 UN2811
 Danger
 H335-H301-H331-H311
 P305+P351+P338-P301+P310-P261
**Specification:**

Assay min. 98 %

Order-No.

A8680,0020

Quantity

20 mg

A8680,0050

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Cytochalasins

Cytochalasins comprise a group of more than 20 fungal metabolites that are known primarily for their inhibition of polymerization and elongation of actin and tubulin filaments in animal cells. Thereby, processes like cell division, endocytosis, enzyme secretion, cell motility and morphology are influenced. Fungi and several gram-positive bacteria are affected by the toxic metabolites as well. Chemically, they are all characterized by an isoindole ring fused to a macrocyclic ring. The latter consists of 11 to 14 atoms and may be either a carbocycle or a lactone (Merck Index 13. Edition 2001; page 488, monograph 2819). Cytochalasins may permeate the cell membrane.

The most popular and characterized members of the cytochalasins are:

Cytochalasin A inhibits the glucose transport and actin polymerization.

Cytochalasin B inhibits microtubule formation and induces cellular DNA fragmentation.

Cytochalasin C acts as strong inhibitor of actin filaments and contractile microfilaments.

Cytochalasin D inhibits actin filaments and contractile microfilaments as well. In addition it protects hippocampal neurons from the β -amyloid peptide toxicity.

Cytochalasin E inhibits angiogenesis and tumor growth, enhances the PKC-dependent processes of the secretion, but does not inhibit the glucose transport.

Cytochalasin A BioChemica

from *Drechslera dematoidea*

$C_{29}H_{35}NO_5$

$M = 477.59$ g/mol

CAS-No.: 14110-64-6

HS-No.: 29349990

EC-No.: 237-964-9

Storage: -20°C

protected from light

Class / PG: 6.1/II

UN1544

Danger

H300-H330-H310-H361

P284-P310-P302+P350-P260-P264-

P280



B

Specification:

Assay min. 99 %

Solubility (5 mg/ml acetone) clear, colorless

Order-No.

A7700,0001

A7700,0005

Quantity

1 mg

5 mg

Literature: (1) Kletzien, R.F. *et al.* (1972) *J. Biol. Chem.* **247**, 2964-2966

(2) Cunningham, D. *et al.* (1979) *J. Bacteriol.* **137**, 925-932

(3) Torralba, S. *et al.* (1998) *Microbiology* **144**, 45-53

(4) Lingham, R.B. *et al.* (1992) *J. Antibiot.* **45**, 686-691

(5) Herath, K.B. *et al.* (2005) *J. Antibiot.* **58**, 686-694

Cytochalasin A and B: Inhibition Of Sugar Uptake In Cultured Cells.

Physiological Responses of Bacteria to Cytochalasin A: Effects on Growth, Transport, and Enzyme Induction.

Effect of cytochalasin A on apical growth, actin cytoskeleton organization and enzyme secretion in *Aspergillus nidulans*.

L-696,474, a novel cytochalasin as an inhibitor of HIV-1 protease. III. Biological activity.

Isolation and Structures of Novel Fungal Metabolites as Chemokine Receptor (CCR2)

Antagonists.

Comment: Cytochalasin A is soluble in DMSO, acetone and ethanol. If stored protected from light and frozen, the shelf life is at least 3 years.

Cytochalasin B BioChemica

Phomin

from *Drechslera dematoidea*

$C_{29}H_{37}NO_5$

$M = 479.61$ g/mol

CAS-No.: 14930-96-2

HS-No.: 29349990

EC-No.: 239-000-2

Storage: -20°C

protected from light

Class / PG: 6.1/II

UN1544

Danger

H361-H330-H300-H310

P310-P264-P284-P260-P280-

P302+P350



B

Specification:

Assay min. 98 %

λ_{max} 220 nm

Solubility (2 %; EtOH) clear, colorless

Order-No.

A7657,0001

A7657,0005

A7657,0010

Quantity

1 mg

5 mg

10 mg

Comment: Cytochalasin B inhibits, like Cytochalasin A, not just the actin and tubulin filament formation, but the glucose uptake into cells as well. Therefore, if you study the microfilament system, it may be advantageous to employ Cytochalasin D instead, since this drug does not influence glucose uptake.

Stability and Solubility: Cytochalasin B dissolved in DMSO shows no decrease in potency even after 3 years if stored at +4°C. In DMF, Cytochalasin B shows the highest solubility with 492 mg/ml. In DMSO 371 mg/ml can be dissolved, while in ethanol solubility drops to 35.4 and in Acetone to 10.3 mg/ml, respectively (Merck Index 13th Edition 2001; page 489, monograph 2819). Please note the toxicity of certain solvents. The problem can be circumvented if stock solutions are prepared in high concentrations (100X or even higher e.g. 10 mM) and the solvent becomes diluted if added to the sample. The working concentration is 1 to 20 μ M.

Cytochalasin C BioChemica

from *Metarrhizium anisopliae*

$C_{30}H_{37}NO_6$

$M = 507.62$ g/mol

CAS-No.: 22144-76-9

HS-No.: 29337900

EC-No.: 244-803-6

Storage: -20°C

protected from light

Class / PG: 6.1/II

UN1544

WGK: 3

Danger

H310-H300-H330-H361

P302+P350-P284-P264-P310-P260-

P280



B

Specification:

Assay (TLC) approx. 97 %

Order-No.

A7670,0001

A7670,0010

Quantity

1 mg

10 mg

Cytochalasin D *BioChemica*

Zygosporin A
from *Zygosporium mansonii*

$C_{30}H_{37}NO_6$
 $M = 507.62$ g/mol
CAS-No.: 22144-77-0
HS-No.: 29337900
EC-No.: 244-804-1

Storage: -20°C
protected from light

Class / PG: 6.1/II
UN1544
Danger
H300-H361
P264-P301+P310-P281



B

Specification:

Assay (TLC) min. 98 %

Order-No.	Quantity
A7641,0001	1 mg
A7641,0005	5 mg
A7641,0010	10 mg

Literature: (1) Goddette, D.W. & Frieden, C. (1986) *J. Biol. Chem.* **261**, 15974-15980
(2) Rubtsova, S.N. *et al.* (1998) *FEBS Lett.* **430**, 353-357

Actin Polymerization: The Mechanism of Action of Cytochalasin D.
Disruption of actin microfilaments by cytochalasin D leads to activation of p53.

Comment: Like Cytochalasin A and B, Cytochalasin D inhibits the assembly of actin and tubulin filaments, but this metabolite is approx. 10fold more potent. Since the glucose uptake is not impaired by Cytochalasin D, this is the preferred tool to investigate the microfilament function.

Stability and Solubility: Stock solutions are made 10 mM and stored protected from light at -20°C. The working concentration varies from 1 to 20 µM.

Cytochalasin E *BioChemica*

from *Aspergillus clavatus*

$C_{28}H_{33}NO_7$
 $M = 495.56$ g/mol
CAS-No.: 36011-19-5
HS-No.: 29349990
EC-No.: 252-835-7

Storage: -20°C
protected from light

Class / PG: 6.1/II
UN1544
WGK: 3
Danger
H300-H310-H330-H361
P310-P264-P280-P302+P350-P260-
P284



B

Specification:

Assay (TLC) min. 98 %

Order-No.	Quantity
A7629,0001	1 mg
A7629,0005	5 mg
A7629,0010	10 mg

Literature: (1) Olorundare, O.E. *et al.* (1992) *Blood* **79**, 99-109

(2) Gan, Y. *et al.* (1998) *Pharm. Res.* **15**, 1760-1766

(3) Udagawa, T. *et al.* (2000) *J. Pharm. Exp. Ther.* **294**, 421-427

(4) Ikewaki, N. *et al.* (2003) *Microbiol. Immunol.* **47**, 775-783

(5) Diez-Sampedro, A. *et al.* (1999) *Can. J. Physiol. Pharmacol.* **77**, 96-101.

Cytochalasin D and E: Effects on Fibrinogen Receptor Movement and Cytoskeletal Reorganization in Fully Spread, Surface-Activated Platelets.
Antiproliferative and cytotoxic Effects of Geldanamycin, Cytochalasin E, Suramin and Thiocetazone in Human Prostate Xenograft Tumor Histocultures.
Cytochalasin E, an Epoxide Containing *Aspergillus*-Derived Fungal Metabolite, Inhibits Angiogenesis and Tumor Growth.
Depolymerization of Actin Filament by Cytochalasin E Induces Interleukin-8 Production and Up-Regulates CD54 in the HeLa Epithelial Cell Line.
Galactose transport inhibition by cytochalasin E in rat intestine *in vitro*.

Comment: Cytochalasin E is an inhibitor of actin polymerization in blood platelets (1,4). It inhibits angiogenesis and tumor growth (2,3). Unlike cytochalasin A and cytochalasin B, it inhibits galactose transport but does not inhibit glucose transport (20 µM; ref. 5).

Solubility and Storage: Cytochalasin E is soluble in organic solvents like DMSO, chloroform and ethyl acetate. Store the solutions frozen and protected from light. Under these conditions, the solution is stable for a minimum of three years.

Cytochrom C from porcine heart *BioChemica*

B

Solubility (6 mg/ml; H₂O)
..... clear, dark-red

$M = \sim 12300$ g/mol
CAS-No.: 9007-43-6
HS-No.: 35040090

Storage: -20°C

Specification:

Assay (photometr., red.) ... approx. 90 %
Loss on drying max. 10 %
Fe approx. 0.3 %

Order-No.	Quantity
A7674,0100	100 mg
A7674,0500	500 mg

Cytokinin B see 6-Benzylaminopurine *BioChemica* Page 136
Cytosine 1-β-D-ribofuranoside see Cytidine *BioChemica* Page 256

Cytosine *BioChemica*

B

4-Amino-2-hydroxypyrimidine

$C_4H_5N_3O$
 $M = 111.10$ g/mol
CAS-No.: 71-30-7
HS-No.: 29335995
EC-No.: 200-749-5

Melting point > 300°C
pK₁ (20°C) 4.4
pK₂ (20°C) 12.5

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

Assay min. 97 %
Heavy metals (as Pb) max. 0.001 %

Order-No.	Quantity
A0815,0005	5 g
A0815,0025	25 g

Cytosine deoxyriboside hydrochloride see 2'-Deoxycytidine hydrochloride *BioChemica* Page 264
D₂O see Water D₂ Page 859
DAB see 3,3'-Diaminobenzidine tetrahydrochloride *BioChemica* Page 273
Dactinomycin see Actinomycin D *BioChemica* Page 66

Dansyl chloride *BioChemica*

B

DNSCl, 5-Dimethylaminonaphthalene-1-sulfonyl chloride

$C_{12}H_{12}ClNO_2S$
 $M = 269.75$ g/mol
 CAS-No.: 605-65-2
 HS-No.: 29214900
 EC-No.: 210-092-6

Storage: 2-8°C
 LGK: 8 B
 Disposal: 11

Class / PG: 8/II
 UN3261
 WGK: 3
 Danger
 H314-H290
 P280-P301+P330+P331-
 P305+P351+P338



Melting point 70°C
 Solubility (20°C) 10 g/L (H₂O)

Specification:

Assay min. 98 %

Order-No.	Quantity
A1119,0001	1 g
A1119,0005	5 g
A1119,0025	25 g

- Literature:** (1) Seiler, N. (1970) *Methods Biochem. Anal.* **18**, 259-337
 (2) Gray, W.R. (1972) *Methods Enzymol.* **25**, 121-138
 (3) Vera, J.C. et al. (1988) *Anal. Biochem.* **174**, 38-45

Use of Dansyl reaction in biochemical analysis.
 End-group analysis using Dansyl chloride.
 Purification, amino terminal analysis and peptide mapping of proteins after *in situ* postelectrophoretic fluorescence labeling.

Comment: Dansyl chloride reacts with different basis, like primary and secondary amines of the terminal amino groups from peptides and proteins and with the reactive side chains of proteins (cysteine > tyrosine > lysine > histidine). Since dansyl chloride reacts just with the free base (R-NH₂), the labeling has to be performed at alkaline pH values. At a concentration of 5 mM dansyl chloride, most amino acids will be labeled at pH 9.8 (2).

Dansyl fluoride *BioChemica*



B

5-(Dimethylamino)-1-naphthalenesulphonyl fluoride, *DNSF*

$C_{12}H_{12}FNO_2S$
 $M = 253.29$ g/mol
 CAS-No.: 34523-28-9
 HS-No.: 29214500
 EC-No.: 252-071-4

Storage: -20°C
 LGK: 8 B
 Disposal: 11

Class / PG: 8/II
 UN3261
 WGK: 3
 Danger
 H314-H290
 P301+P330+P331-P280-
 P305+P351+P338



Specification:

Assay min. 99 %
 UV spectrum (MeOH) complies

Order-No.	Quantity
A8034,0001	1 g
A8034,0005	5 g

DAPI

4',6-Diamidino-2-phenylindole dihydrochloride

$C_{16}H_{15}N_5 \cdot 2HCl$
 $M = 350.25$ g/mol
 CAS-No.: 28718-90-3
 HS-No.: 29339980
 EC-No.: 249-186-7

Storage: 2-8°C
 protected from light
 LGK: 10 - 13

Melting point approx. 330°C

DAPI Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay min. 98 %
 Solubility (1 %; H₂O) clear
 UV spectrum complies to standard

Order-No.	Quantity
A4099,0005	5 mg
A4099,0010	10 mg
A4099,0025	25 mg

DAPI *BioChemica*

B

Specification:

Assay (TLC) min. 98 %
 Solubility (1 %; H₂O) clear
 N min. 18 %
 UV spectrum
 λ_{max} 223 nm, 261 nm,
 342 nm
 λ_{min} 246 nm, 282 nm

Order-No.	Quantity
A1001,0010	10 mg
A1001,0025	25 mg
A1001,0100	100 mg

- Literature:** (1) Russel, W.C. et al. (1975) *Nature* **253**, 461-462

- (2) Kapuscinski, J. & Szer, W. (1979) *Nucleic Acids Res.* **6**, 3519-3534
 (3) Wilson, W.D. et al. (1989) *J. Am. Chem. Soc.* **111**, 5008-5010
 (4) Otto, F. (1990) *Methods Cell Biol.* **33**, 105-110
 (5) Schweizer, D. (1976) *Chromosoma* **58**, 307-324
 (6) Naimski, P. et al. (1980) *Anal. Biochem.* **106**, 471-475
 (7) Daxhelet, G.A. et al. (1989) *Anal. Biochem.* **179**, 401-403
 (8) Xia, H. et al. (1997) *BioTechniques* **22**, 934-936

A simple cytochemical technique for demonstration of DNA in cells infected with mycoplasmas and viruses.
 Interaction of 4',6-diamidino-2-phenylindole with synthetic polynucleotides.
 Binding of 4',6-Diamidino-2-phenylindole (DAPI) to GC and mixed sequences in DNA: Intercalation of a classical groove-binding molecule.
 DAPI-staining of cells fixed for "flow cytometry".
 'Reverse Fluorescent Chromosome Banding' with Chromomycin and DAPI.
 Quantitative Fluoreszenzanalyse verschiedener Konformationen von DAPI-gebundener DNA.
 Spectrofluorometry of Dyes with DNAs of Different Base Composition and Conformation.
 Detection of Mycoplasma infections of mammalian cells.

Comment: DAPI is an excellent dye for the staining of DNA. Originally, only the specific binding to AT-base pairs without an intercalation was known (2), but later on, the intercalation into GC-base pairs was shown (3). The most popular application of DAPI is its use as a reagent to **detect mycoplasma or virus DNA** (e. g. vaccinia infection or 'unwanted' viral contamination of cell culture cells) in the cell culture.

AppliChem recommends the following simple procedure: Grow cells on a coverslip in a cell culture dish to reach approx. 70 % confluence. Pour off the medium from the cells. Wash the coverslip once with 1 µg/ml DAPI in methanol. Incubate the cells on the coverslip at 37°C for 15 minutes in 1 µg DAPI/ml in methanol. Pour off the staining solution and wash the coverslip once with methanol. Put it up-side-down on a slide with PBS or glycerol as mounting medium. Do not use water. Examine the cells under a microscope (excitation: 365 nm; emission maximum at 450 nm). Prolonged incubation with DAPI increases the nuclear fluorescence, shorter incubation time leads to a weaker nuclear staining, which facilitates the examination of the cytoplasmic fluorescence.

Solubility / Stability: Dissolve DAPI in double-distilled water to a final concentration of 1 - 5 mg. The maximum solubility in water is approx. 25 mg/ml. DAPI is insoluble in PBS. Do not use any buffers. Dilute the stock solution with methanol to a final concentration of 1 µg/ml. Solutions are stable at room temperature for 1 - 2 weeks (4), at +4°C up to 6 months and frozen between 6 and 12 months (1 ml aliquots). If the solution becomes turbid, DAPI is hydrolyzed. DAPI bleaches quickly in contact with light, even if it is quite stable against UV-light. Incubate your samples in the dark. If your samples are stored at +4°C for one day, fluorescence is stabilized.

DAS see Diacetoxyscirpenol *BioChemica* Page 272
 DATD see N,N'-Diallyltartardiamide *BioChemica* Page 272
 dATP-Na₂ see 2'-Deoxyadenosine 5'-triphosphoric acid disodium salt *BioChemica* Page 263
 dATP - Solution see 2'-Deoxyadenosine 5'-triphosphoric acid - Solution (100 mM) *BioChemica* Page 263
 dATP with aminolinker see Deoxyribonucleotides with aminolinkers Page 267

Davidson - Solution

C

HS-No.: 38220000

Storage: RT

Warning
 H312-H335-H317-H351-H332-H302-H315
 P312-P280-P305+P351+P338-P301-P271



Composition:

Acetic acid 100 % 111 mL/L
 Deionized water 347 mL/L
 Ethanol 99 % 320 mL/L
 Formaldehyde - Solution 10 % phosphate buffered 222 mL/L

Order-No.	Quantity
A3200,1000	1 L
A3200,2500	2.5 L
A3200,5000	5 L

DCC see N,N'-Dicyclohexylcarbodiimide for synthesis Page 277
 dCTP-Na₂ see 2'-Deoxycytidine 5'-triphosphoric acid disodium salt *BioChemica* Page 264
 dCTP - Solution see 2'-Deoxycytidine 5'-triphosphoric acid - Solution (100 mM) *BioChemica* Page 265
 dCTP with aminolinker see Deoxyribonucleotides with aminolinkers Page 267
 N-Deacetyl-N-methylcolchicine see Demecolcine *BioChemica* Page 262

DEAE-Dextran *BioChemica*

B

Diethylaminoethyl-dextran

M = approx. 500000 g/mol Storage: RT

CAS-No.: 9013-34-7

HS-No.: 39123985

Specification:

Loss on drying max. 10 %
 Solubility (10 %; H₂O) clear
 pH (1 %; 1 M KCl; 20°C) 4.0 - 6.0

Order-No.	Quantity
A2149,0025	25 g
A2149,0100	100 g

Literature: (1) Sompayrac, L.M. & Danna, K.J. (1981) *Proc. Natl. Acad. Sci. USA* **78**, 7575-7578 Efficient infection of monkey cells with DNA of simian virus 40.
 (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition p. 16.41-16.46. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: The use of DEAE-Dextran improved the transfection efficiency of monkey cells with SV40 DNA from 4 % to 25 % (1). DEAE-Dextran was dissolved in culture medium / 50 mM Tris - HCl (pH 7.3) in a concentration of 500 µg/mL. Not all cell types can be exposed to calcium phosphate, because of its toxicity. DEAE-Dextran is less toxic than calcium phosphate (ref. 2). But this method can only be applied for the transient expression of cloned genes, but not for the stable transformation of cells. Some cell types give very good results with DEAE-Dextran (BSC-1, CV-1 and COS cells). BSC-1 cells shall not be exposed longer than 8 hours to the reagent (1).
 The DEAE-Dextran method has one big advantage over the calcium phosphate technique: It requires less DNA (2).

Deanol see 2-Dimethylaminoethanol *BioChemica* Page 283

Decalcifier for removal of scale

C

HS-No.: 38220000

Storage: RT

Warning
 H319
 P305+P351+P338-P302+P352



Order-No.	Quantity
A3659,1000	1 L
A3659,5000	5 L
A3659,9025	25 L

1-Decanesulfonic acid sodium salt IPC grade

C

Sodium-1-decane sulfonate

C₁₀H₂₁NaO₃S

Storage: RT

Melting point > 300°C

M = 244.33 g/mol
 CAS-No.: 13419-61-9
 HS-No.: 29041000
 EC-No.: 236-525-9

LGK: 10 - 13
 Disposal: 3

Specification:

Assay (titr.) min. 99 %
 Alkylbromide max. 0.01 %
 Heavy metals (as Pb) max. 0.001 %
 Solubility (10 %; H₂O) clear, colorless

A (1 cm/0.005 M in water HPLC grade)
 200 nm max. 0.40
 220 nm max. 0.05

Order-No.	Quantity
A1018,0005	5 g
A1018,0010	10 g
A1018,0025	25 g

1-Decanol for synthesis

C

Decyl alcohol, Capryl alcohol

 $C_{10}H_{22}O$
 $M = 158.29$ g/mol
CAS-No.: 112-30-1
HS-No.: 29051900
EC-No.: 203-956-9

Storage: RT
LGK: 3 B
Disposal: 1

Class / PG: 9/II
UN3082
WGK: 1
Warning
H319-H411-H315
P305+P351+P338-P302+P352-P273

Boiling point 228 - 235°C
Density (d 20°C/4°C) ... 0.830
Melting point 5 - 7°C

Specification:

Assay (HPLC) min. 98 %

Order-No.	Quantity
A3212,1000	1 L
A3212,10006	6 x 1 L
A3212,2500	2.5 L
A3212,25004	4 x 2,5 L

N-Decanoyl-N-methylglucamine see MEGA-10 Page 524

Decontamination removal solution for RNase see RNase-ExitusPlus™ Page 691

Decontamination solution for the removal of DNA and RNA contaminations see DNA-ExitusPlus™ Page 302

Decyl alcohol see 1-Decanol for synthesis Page 261

n-Decyl-β-D-glucopyranoside BioChemica

B

CMC (20°C; H₂O) 2.2 mM
Classification: nonionic detergent

 $C_{16}H_{32}O_6$
 $M = 320.43$ g/mol
CAS-No.: 58846-77-8
HS-No.: 29329900
EC-No.: 261-469-7

Storage: 2-8°C

Specification:

Assay min. 99 %
α20°C/D; 1 %, EtOH -27° ± 1°
Identity (IR) complies
Solubility (1 %; H₂O, EtOH) . clear, colorless
Thermal transition 75.2°C (smectic A)

n-Decanol max. 0.002 %
n-Decyl-α-D-glucoside (HPLC) max. 0.03
Water (K.F.) max. 0.01 %

A (1 cm/1 %, water HPLC grade)
260 nm max. 0.03

Order-No.	Quantity
A3208,0001	1 g
A3208,0005	5 g
A3208,0010	10 g
A3208,0025	25 g

n-Decyl-β-D-maltoside

CMC (H₂O) 1.8 mM
Classification: nonionic detergent

 $C_{22}H_{42}O_{11}$
 $M = 482.57$ g/mol
CAS-No.: 82494-09-5
HS-No.: 29329900

Storage: 2-8°C

n-Decyl-β-D-maltoside Crystallography grade

B

Specification:

Assay min. 99.5 %
α20°C/D; 4 %, H₂O +53° ± 0.5°
Solubility (10 %; H₂O; 21°C) . clear, colorless
Thermal transition 89.2°C (smectic A)

α-Isomere (HPLC) max. 0.01 %
n-Decanol (HPLC) max. 0.001 %

A (1 cm/1 %, water HPLC grade)
260 nm max. 0.04

Order-No.	Quantity
A6769,0001	1 g
A6769,0005	5 g
A6769,0010	10 g

n-Decyl-β-D-maltoside BioChemica

B

Specification:

Assay min. 99 %
α20°C/D; 4 %, H₂O +53° ± 0.5°
Solubility (10 %; H₂O; 21°C) . clear, colorless
α-Isomere (HPLC) max. 0.01 %

n-Decanol (HPLC) max. 0.001 %

A (1 cm/1 %, water HPLC grade)
260 nm max. 0.04

Order-No.	Quantity
A6816,0001	1 g
A6816,0005	5 g
A6816,0010	10 g

Dehydronivalenol monoacetate see 3-Acetyldeoxynivalenol Page 49

Dehydrothio-p-toluidine see APMBT ultrapure Page 113

2-(Dehydroxy)-coelenterazine see Coelenterazine H BioChemica Page 220

Delphinidin-3-galactoside chloride HPLC grade



B

Empetrin
from *Vaccinium myrtillus*
 $C_{21}H_{21}ClO_{12}$
 $M = 500.84$ g/mol
CAS-No.: 28500-00-7
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 95 %

Order-No.	Quantity
A8676,0010	10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Delphinidin-3-glucorhamnoside see Delphinidin-3-rutinoside HPLC grade Page 262

Delphinidin-3-glucoside chloride HPLC grade



B

Delphinin, Myrtilin
from *Vaccinium myrtillus*

$C_{21}H_{21}ClO_{12}$
 $M = 500.84$ g/mol
CAS-No.: 6906-38-3
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 95 %

Order-No.
A8688,0010

Quantity
10 mg

Delphinidin-3-rutinoside HPLC grade



B

Delphinidin-3-glucorhamnoside,
Tulipanin
from *Ribes nigrum*

$C_{27}H_{31}Cl_2O_{16}$
 $M = 646.98$ g/mol
CAS-No.: 15674-58-5
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.
A8974,0020
A8974,0050

Quantity
20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Delphinin see Delphinidin-3-glucoside chloride HPLC grade Page 262

Demecolcine BioChemica

B

N-Deacetyl-*N*-methylcolchicine,
Colcemide

$C_{21}H_{25}NO_5$
 $M = 371.44$ g/mol
CAS-No.: 477-30-5
HS-No.: 29399900
EC-No.: 207-514-6

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
WGK: 3
Danger
H301
P260-P308+P313-P281



Melting point 182 - 185°C

Specification:

Assay min. 98 %
 α 20°C/D; 1 %, $CHCl_3$ -119° - -123°
Solubility (1 %; $CHCl_3$) light yellow

Order-No.
A4347,0005
A4347,0010
A4347,0025

Quantity
5 mg
10 mg
25 mg

Comment: Beside Colchicin, Demecolcine is the most abundant alkaloid of *Colchicum autumnale*. By disrupting microtubuli formation, Demecolcine influences cell division and other cellular processes. It inhibits spindle fibre formation in M phase, leading to polyploid cells. Demecolcine is much less toxic for humans than Colchicin, making it a drug in cancer treatment. It is of low solubility in water, but soluble in alcohol, ether and chloroform.

Denaturing - Solution Molecular biology grade

B

HS-No.: 38220000

Storage: RT
LGK: 8 B

Class / PG: 8/III
UN1824
WGK: 1
Danger
H314
P305+P351+P338-P313-P280



Composition:

NaCl 87.7 g/L
NaOH 20.0 g/L

Specification:

DNases/RNases/Proteases
..... not detectable

Order-No.
A0816,0500
A0816,1000

Quantity
500 ml
1 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; page 9.38. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: Before the DNA is transferred from the gel to the nitrocellulose filter (Southern blot), the DNA is denatured in the gel by incubation in several volumes of denaturing solution (1.5 M NaCl; 0.5 N NaOH) for 45 minutes under gentle rocking (1).

Denhardt's powder mixture (for 50X stock solution)

B

HS-No.: 38220000

Storage: 2-8°C
LGK: 10 - 13

Composition:

Albumin Fraction V 0.5 g/50 ml
Ficoll® 400 0.5 g/50 ml
Polyvinylpyrrolidone K30 ... 0.5 g/50 ml

Order-No.
A3792,0010
A3792,0050

Quantity
10 ml
50 ml

Denhardt's - Solution (50X) BioChemica

B

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

Composition:

Albumin Fraction V 0.1 g/10 ml
Ficoll® 400 0.1 g/10 ml
Polyvinylpyrrolidone K30 ... 0.1 g/10 ml

Order-No.	Quantity
A2248,0005	5 ml
A2248,0010	10 ml

Literature: (1) Denhardt, D.T. (1966) *Biochem. Biophys. Res. Com.* **23**, 641-646 A membrane-filter technique for the detection of complementary DNA.
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; p. 9.47-9.55, 6.12. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: Denhardt's solution is a blocking reagent for preventing the unspecific binding of nucleic acids to nitrocellulose or nylon membranes in hybridisation experiments. Denatured DNA binds to nitrocellulose membranes, but not free RNA. Pretreatment of the membrane with Denhardt's solution prevents the binding of single stranded or (unspecific) denatured DNA. The specific 'annealing' of denatured DNA to its complementary DNA is not inhibited. The use of Denhardt's reagent is recommended for Northern hybridisation, hybridisation of RNA, 'single copy Southern hybridisation' or hybridisation of DNA, immobilized on nylon membranes (2).
Denhardt's solution is set up as a 50X stock solution (50X reagent: 5 g Ficoll® 400, 5 g polyvinylpyrrolidone, 5 g BSA fraction V in water ad 500 ml), filtered and stored at -20°C. This stock solution is diluted tenfold with prehybridisation buffer (usually 6X SSC or 6X SSPE with 0.5 % SDS and 100 µg/ml denatured, sonified salmon sperm DNA; ref. 2).

27-Deoxyactein HPLC grade

B

from *Cimicifuga racemosa*
 $C_{37}H_{56}O_{10}$
 $M = 660.84 \text{ g/mol}$
CAS-No.: 264624-38-6
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5273,0005	5 mg
A5273,0005DOC	5 mg
A5273,0010	10 mg
A5273,0010DOC	10 mg
A5273,0020	20 mg
A5273,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), IR, MS, hrMS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

2'-Deoxyadenosine monohydrate BioChemica

B

9-(2-Deoxy-β-D-ribofuranosyl)-adenine,
Adenine deoxyriboside

 $C_{10}H_{13}N_5O_3 \cdot H_2O$
 $M = 269.26 \text{ g/mol}$
CAS-No.: 16373-93-6
HS-No.: 29349990
EC-No.: 213-488-7

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Warning
H302
P312-P301+P330+P331


Melting point 187 - 189°C

Specification:

Assay min. 98.5 %
Water (K.F.) max. 10 %

Order-No.	Quantity
A2150,0001	1 g
A2150,0005	5 g

2'-Deoxyadenosine 5'-triphosphoric acid disodium salt BioChemica

B

dATP-Na₂
 $C_{10}H_{14}N_5Na_2O_{12}P_3$
 $M = 535.15 \text{ g/mol}$
CAS-No.: 74299-50-6
HS-No.: 29349990
EC-No.: 277-809-2

Storage: -20°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:

Assay min. 98 %
Water (K.F.) max. 10 %

Order-No.	Quantity
A2002,0010	10 mg
A2002,0025	25 mg
A2002,0100	100 mg

2'-Deoxyadenosine 5'-triphosphoric acid - Solution (100 mM) BioChemica

B

dATP - Solution

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

Specification:

Concentration 100 mM dATP
pH (20°C) 7.5 ± 0.1

Order-No.	Quantity
A2079,0025	25 µmol
A2079,0100	100 µmol
A2079,0500	500 µmol

Deoxy-BIGCHAP BioChemica

B

N,N-Bis-[3-(*D*-gluconamido)-propyl]-
deoxycholamideC₄₂H₇₅N₃O₁₅
M = 862.07 g/mol
CAS-No.: 86303-22-2
HS-No.: 29239000Storage: 2-8°C
LGK: 10 - 13

Classification: nonionic detergent

Specification:Assay (from C) min. 95 %
CMC (25°C) 1.1 - 1.4 x 10⁻³ mol/L
Micellar weight approx. 7000 -
14000**Order-No. Quantity****A1698,0250** 250 mg**A1698,0001** 1 g**A1698,0005** 5 g**Literature:** (1) Hjelmeland, L.M. et al. (1983) *Anal. Biochem.* **130**, 485-490

A new class of non-ionic detergents with a Gluconamide polar group.

Comment: Deoxy-BIGCHAP has an uncharged, polar head group and is completely soluble at 0°C. It is suitable for the extraction of the opiate receptor in its active state from membranes (concentration 15 mM Deoxy-BIGCHAP in 0.01 M TrisCl, pH 7.5; ref. 1). It is a good alternative to CHAPS and octylglucoside.2'-Deoxy-5-bromouridine see 5-Bromo-2'-deoxyuridine *BioChemica* Page 160**Deoxycholate Citrate Agar, Leifson, Modified**

C

Leifson Agar (modified)

HS-No.: 38220000

Storage: RT
LGK: 10 - 13**Composition:**Agar 15.0 g/L
Ferric citrate 1.0 g/L
L-Phenylalanine 1.0 g/L
Lactose 10.0 g/L
Neutral red 0.02 g/LPeptones 26.5 g/L
Sodium citrate 5.0 g/L
Sodium deoxycholate 2.5 g/L
Sodium thiosulfate 5.0 g/L**Specification:**pH before autoclaving
..... approx. 7.0 (20°C)**Order-No. Quantity****A5701,0500** 500 g**A5701,5000** 5 kg**Literature:** (1) Leifson (1935) *J. Path. Bact.* **40**, 581**Comment:** This is a selective and differential medium for the isolation of gram-negative enteric microorganisms. Deoxycholate Citrate Agar, Leifson is less selective than Deoxycholate Citrate Agar, Hynes. The medium supplemented with phenylalanine is suitable to distinguish *Salmonella spp.* from *Proteus spp.***Direction:** Suspend 66 g in 1 L of distilled water and heat with frequent agitation until the medium boils. Mix well and pour plates immediately. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. The prepared medium may be used at once or refrigerated for a few days.**Deoxycholic acid BioChemica**

B

3 α ,12 α -Dihydroxy-5 β -cholanoic acidC₂₄H₄₀O₄
M = 392.56 g/mol
CAS-No.: 83-44-3
HS-No.: 29181930
EC-No.: 201-478-5Storage: RT
LGK: 10 - 13
Disposal: 3WGK: 1
Warning
H315-H319-H302-H335
P261-P305+P351+P338Melting point 173 - 178°C
Solubility (20°C) 44 mg/L (H₂O)**Specification:**Assay min. 99 %
Heavy metals max. 0.004 %
Loss on drying max. 2 %Solubility (2 %; EtOH) ... clear
Cholic acid max. 1 %**Order-No. Quantity****A2835,0025** 25 g**A2835,0100** 100 gDeoxycholic acid sodium salt see Sodium deoxycholate *BioChemica* Page 729**2'-Deoxycytidine hydrochloride BioChemica**

B

Cytosine deoxyriboside hydrochloride,
1-(2-Deoxy- β -*D*-ribofuranosyl)-cytosine
hydrochlorideC₉H₁₃N₃O₄ · HCl
M = 263.68 g/mol
CAS-No.: 3992-42-5
HS-No.: 29349990
EC-No.: 223-639-9Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point 168 - 170°C

Specification:Assay min. 98 %
 α 20°C/D; 1 %, H₂O +54° - +60°**Order-No. Quantity****A2151,0500** 500 mg**A2151,0001** 1 g**A2151,0005** 5 g**2'-Deoxycytidine 5'-triphosphoric acid disodium salt BioChemica**

B

*dCTP-Na₂*C₉H₁₃N₃Na₂O₁₃P₃
M = 511.13 g/mol
CAS-No.: 102783-51-7
HS-No.: 29349990Storage: -20°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:Assay (UV) min. 98 %
Water (K.F.) max. 10 %**Order-No. Quantity****A2001,0010** 10 mg**A2001,0025** 25 mg**A2001,0100** 100 mg

2'-Deoxycytidine 5'-triphosphoric acid - Solution (100 mM) BioChemica

B

dCTP - Solution

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

Specification:

Concentration 100 mM dCTP
pH (20°C) 7.5 ± 0.1

Order-No.	Quantity
A2080,0025	25 µmol
A2080,0100	100 µmol
A2080,0500	500 µmol

3'-Deoxy-2',3'-didehydrothymidine 5'-triphosphate TEA salt BioChemica

B

aqueous solution

 $C_{33}H_{69}N_6O_{13}P_3$
 $M = 850.79$ g/mol
HS-No.: 38220000

Storage: -20°C

Specification:

Assay min. 96 %
Concentration 100 mM

Order-No.	Quantity
A5202,0050	50 µl

TEA salt = Tetra-(triethylammonium) salt

2-Deoxy-D-erythropentose see 2-Deoxy-D-ribose BioChemica Page 267

6-Deoxy-D-galactose see D(+)-Fucose BioChemica Page 365

6-Deoxy-L-galactose see L(-)-Fucose BioChemica Page 365

2'-Deoxyguanosine monohydrate BioChemica

B

 $C_{10}H_{13}N_5O_4 \cdot H_2O$
 $M = 285.27$ g/mol
CAS-No.: 961-07-9
HS-No.: 29349990
EC-No.: 213-505-8

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %
 α 20°C/D; 0.5 %, H₂O -31° - -33°

Order-No.	Quantity
A2152,0500	500 mg
A2152,0001	1 g
A2152,0005	5 g

2'-Deoxyguanosine 5'-triphosphoric acid trisodium salt BioChemica

B

dGTP-Na₃
 $C_{10}H_{13}N_5Na_3O_{13}P_3$
 $M = 573.13$ g/mol
CAS-No.: 93919-41-6
HS-No.: 29349990
EC-No.: 300-026-5

Storage: -20°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay (UV) min. 98 %
Loss on drying max. 10 %

Order-No.	Quantity
A2004,0010	10 mg
A2004,0025	25 mg
A2004,0100	100 mg

2'-Deoxyguanosine 5'-triphosphoric acid - Solution (100 mM) BioChemica

B

dGTP - Solution

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice

Specification:

Concentration 100 mM dGTP
pH (20°C) 7.5 ± 0.1

Order-No.	Quantity
A2081,0025	25 µmol
A2081,0100	100 µmol
A2081,0500	500 µmol

2'-Deoxy-5-iodouridine see 5-Iodo-2'-deoxyuridine BioChemica Page 456

6-Deoxy-L-mannose see L(+)-Rhamnose monohydrate BioChemica Page 686

Deoxynivalenol BioChemica

B

DON, Vomitoxin

$C_{15}H_{20}O_6$
 $M = 298.3$ g/mol
CAS-No.: 51481-10-8
HS-No.: 29329900

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
Danger
H300
P264-P301+P310


Specification:

Assay (TLC) min. 98 %

Order-No.	Quantity
A4360,0001	1 mg
A4360,0005	5 mg

Comment: Deoxynivalenol is one of about 150 related compounds known as trichothecenes that are formed by a number of species of *Fusarium* and some other fungi. Since *Fusarium* invades crops, its toxic compounds are often found in foodstuffs. Deoxynivalenol is thermally and chemically very stable. It is soluble in water and polar solvents such as methanol and acetonitrile.

Deoxynivalenol monoacetate see 3-Acetyldeoxynivalenol Page 49

Deoxynojirimycin hydrochloride BioChemica

B

$C_6H_{13}NO_4 \cdot HCl$
 $M = 199.63$ g/mol
CAS-No.: 73285-50-4
HS-No.: 29419000

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr.) min. 98 %

Order-No.	Quantity
A2268,0005	5 mg
A2268,0010	10 mg

Literature: (1) Gross, V. *et al.* (1983) *J. Biol. Chem.* **258**, 12203-12209

(2) Peyrieras, N. *et al.* (1983) *EMBO J.* **2**, 823-832

(3) Fuhrmann, U. *et al.* (1984) *Nature* **307**, 755-758

(4) Lemansky, P. *et al.* (1984) *J. Biol. Chem.* **259**, 10129-10135

(5) Fuhrmann, U. *et al.* (1985) *Biochim. Biophys. Acta* **825**, 95-110

(6) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 17.10.7 (Suppl. 22) Greene Publishing & Wiley-Interscience, New York.

1-Deoxynojirimycin impairs oligosaccharide processing of α_1 -Proteinase-Inhibitor and inhibits its secretion in primary cultures of rat Hepatocytes. Effects of the glucosidase inhibitors nojirimycin and deoxynojirimycin on the biosynthesis of membrane and secretory glycoproteins. Novel mannosidase inhibitor blocking conversion of high mannose to complex oligosaccharides. Cathepsin D and β -Hexosaminidase accumulate in the endoplasmic reticulum after treatment with Deoxynojirimycin. Review: Inhibitors of oligosaccharide processing.

Comment: Deoxynojirimycin is an antibiotic and was isolated from different *Bacillus spec.* It is an analogue of glucose with nitrogen substituting the oxygen in the cyclic structure. Deoxynojirimycin competitively inhibits the glucosidase I and II (iC_{50} 20 μ M and 2 μ M for the yeast enzyme, respectively; 3 μ M and 20 μ M for mammalian enzyme, respectively; ref. 5) and the pancreatic α -amylase. Thereby, it disturbs the processing of the glycosylation of proteins with glucose in their sugar moiety by inhibiting the cleavage of glucose residue. This may result in an accumulation of glycoproteins, e. g. in the endoplasmic reticulum (working concentration 1-10 mM; ref. 1-4). The stock solution (e. g. 1 M; ref. 4) is set up in water. According to ref. 6, a stock solution is prepared by dissolving Deoxynojirimycin to a final concentration of 400 mM in water. Filter-sterilize (0.22 μ m filter). Store at -20°C (stable indefinitely).

9-(2-Deoxy- β -D-ribofuranosyl)-adenine see 2'-Deoxyadenosine monohydrate BioChemica Page 263

1-(2-Deoxy- β -D-ribofuranosyl)-cytosine hydrochloride see 2'-Deoxycytidine hydrochloride BioChemica Page 264

1-(2-Deoxy- β -D-ribofuranosyl)-thymine see 2'-Deoxythymidine BioChemica Page 267

Deoxyribonuclease I see DNase I Page 305

Deoxyribonucleic acid from salmon sperm see Salmon sperm DNA sodium salt Page 701

Deoxyribonucleotide - Mix BioChemica

B

Mixture of the sodium salts of the deoxyribonucleotide triphosphates (dATP, dCTP, dGTP, dTTP), phosphate buffered

HS-No.: 29349990

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

Specification:

Concentration 10 mM per dNTP
pH (20°C) 7.5 $\pm$ 0.1

Order-No.	Quantity
A2704,0002	2 μ mol
A2704,0010	10 μ mol
A2704,0050	50 μ mol

Deoxyribonucleotide - Set BioChemica

B

Separate solutions of the sodium salts of the deoxyribonucleotide triphosphates (dATP, dCTP, dGTP, dTTP), phosphate buffered

HS-No.: 29349990

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

Specification:

Concentration 100 mM per dNTP
pH (20°C) 7.5 $\pm$ 0.1

Order-No.	Quantity
A2591,0025	25 μ mol
A2591,0100	100 μ mol

Deoxyribonucleotides with aminolinkers

HS-No.: 38220000

Storage: -20°C

Aminoallyl-dUTP

B

AA-dUTP, 5-(3-Aminoallyl)-2'-
deoxyuridin-5'-triphosphat trilitium salt, *dNTP with aminolinker*

$C_{12}H_{17}Li_3N_3O_{14}P_3$
 $M = 541.02 \text{ g/mol}$

- incorporation into DNA by Reverse Transcriptase, Taq DNA Polymerase or Klenow Fragment
- for enzymatic, indirect, non-radioactive labeling of DNA

Specification:

Assay min. 98 %
Concentration 10 mM in H₂O

Order-No.
A7668,0100

Quantity
100 µl

Aminobutyl-dATP

B

N-(4-Aminobutyl)-2'-deoxyadenosine-5'-
triphosphate tetralithium salt, *dATP with aminolinker*

$C_{14}H_{21}Li_4N_6O_{12}P_3$
 $M = 586.04 \text{ g/mol}$

- incorporation into DNA by Reverse Transcriptase, Taq DNA Polymerase or Klenow Fragment
- for enzymatic, indirect, non-radioactive labeling of DNA

Specification:

Assay min. 98 %
Concentration 10 mM in H₂O

Order-No.
A7701,0100

Quantity
100 µl

Aminohexyl-dCTP

B

N-(6-Aminohexyl)-2'-deoxycytidine-5'-
triphosphate tetralithium salt, *dCTP with aminolinker*

$C_{15}H_{25}Li_4N_4O_{13}P_3$
 $M = 590.06 \text{ g/mol}$

- incorporation into DNA by Reverse Transcriptase, Taq DNA Polymerase or Klenow Fragment
- for enzymatic, indirect, non-radioactive labeling of DNA

Specification:

Assay min. 98 %
Concentration 10 mM in H₂O

Order-No.
A7636,0100

Quantity
100 µl

2-Deoxy-D-ribose BioChemica

B

Thymine, 2-Deoxy-D-erythrose

$C_5H_{10}O_4$
 $M = 134.13 \text{ g/mol}$
CAS-No.: 533-67-5
HS-No.: 29400000
EC-No.: 208-573-0

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point approx. 90°C
Solubility (20°C) 50 g/L (H₂O)

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, H₂O, 24 h -55° - -58°
Heavy metals (as Pb) max. 0.002 %

Solubility (5 %; H₂O) ... clear, colorless to
yellowish
Loss on drying max. 1 %

Order-No.
A1885,0005
A1885,0025

Quantity
5 g
25 g

2'-Deoxythymidine BioChemica

B

1-(2-Deoxy-β-D-ribofuranosyl)-thymine,
Thymidine, Thymine deoxyriboside

$C_{10}H_{14}N_2O_5$
 $M = 242.23 \text{ g/mol}$
CAS-No.: 50-89-5
HS-No.: 29349990
EC-No.: 200-070-4

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point 186 - 188°C
Solubility (20°C) 50 g/L (H₂O)

Specification:

Assay min. 98 %
 α 20°C/D; 1 %, H₂O +18° - +20°
Heavy metals max. 0.001 %

Order-No.
A2265,0001
A2265,0005
A2265,0025

Quantity
1 g
5 g
25 g

2'-Deoxythymidine 5'-triphosphoric acid trisodium salt *BioChemica*

B

Thymidine 5'-triphosphate trisodium salt,
dTTP- Na_3

$\text{C}_{10}\text{H}_{14}\text{N}_2\text{Na}_3\text{O}_{14}\text{P}_3$
 $M = 548.12 \text{ g/mol}$
CAS-No.: 3624-46-2
HS-No.: 29349990
EC-No.: 248-679-4

Storage: -20°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:

Assay (UV) min. 98 %
Water (K.F.) max. 10 %

Order-No.	Quantity
A2003,0010	10 mg
A2003,0025	25 mg
A2003,0100	100 mg

2'-Deoxythymidine 5'-triphosphoric acid - Solution (100 mM) *BioChemica*

B

pTTP - Solution

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

Specification:

Concentration 100 mM dTTP
pH (20°C) 7.5 ± 0.1

Order-No.	Quantity
A2082,0025	25 µmol
A2082,0100	100 µmol
A2082,0500	500 µmol

2'-Deoxyuridine 5'-triphosphoric acid tetralithium salt trihydrate *BioChemica*

B

$\text{C}_9\text{H}_{11}\text{Li}_4\text{N}_2\text{O}_{14}\text{P}_3 \cdot 3\text{H}_2\text{O}$
 $M = 545.93 \text{ g/mol}$
HS-No.: 29349990

Storage: -20°C

Specification:

Assay min. 96 %

Order-No.	Quantity
A5199,0025	25 mg
A5199,0100	100 mg
A5199,0500	500 mg

Comment: dUTP (2'-Deoxyuridine 5'-triphosphate tetralithium salt) may be used instead of dTTP in PCR and RT-PCR protocols to prevent carryover from previous amplifications. The substitution of dTTP for dUTP in PCR results in uracil-containing PCR products that are suitable for most standard applications. The enzyme uracil-DNA-glycosylase, UDG (Order number A5234), can be added to a PCR premix to excise uracil from any contaminating PCR product, thereby preventing false positives. Each lot of dUTP is tested in PCR reactions for specific DNA amplification.

DEPC *BioChemica*

B

Diethylpyrocarbonate,
Diethyldicarbonate

$\text{C}_6\text{H}_{10}\text{O}_5$
 $M = 162.14 \text{ g/mol}$
CAS-No.: 1609-47-8
HS-No.: 29209085
EC-No.: 216-542-8

Storage: 2-8°C
LGK: 3 B
Disposal: 1

Warning
H332-H335-H302-H315-H319
P280-P305+P351+P338

Boiling point 160 - 163°C
Density (d 20°C/4°C) .. 1.122
n 20°C/D 1.398

Specification:

Assay (NT) min. 97 %

Order-No.	Quantity
A0881,0020	20 ml
A0881,0050	50 ml
A0881,0100	100 ml
A0881,0250	250 ml

- Literature:** (1) Summers, W.C. (1970) *Anal. Biochem.* **33**, 459-463
(2) Berger, S.L. (1975) *Anal. Biochem.* **67**, 428-437
(3) Ehrenberg, L. et al. (1976) *Progr. Nucl. Acid Res. Mol. Biol.* **16**, 189-262
(4) Miles, E.W. (1977) *Methods Enzymol.* **47**, 431-442
(5) Herr, W. (1985) *Proc. Natl. Acad. Sci. USA* **82**, 8009-8013
(6) McCarthy, J.G. et al. (1990) *Biochemistry* **29**, 6071-6081

A simple method for the extraction of RNA from *E. coli* with DEPC.
DEPC: An examination of its properties in buffered solutions with a new assay technique.
Diethyl pyrocarbonate in nucleic acid research.
Modification of Histidyl residues in proteins by Diethyl pyrocarbonate.
DEPC: A chemical probe for secondary structure in negatively supercoiled DNA.
Chemical reactivity of DEPC with B-DNA: Specific reactivity with short A-Tracts.

Comment: Diethylpyrocarbonate (DEPC) modifies histidyl-residues in proteins and leads to the inactivation of many enzymes. In molecular biology it is mainly used as a strong, but not absolute, inhibitor of RNase activity. In addition, DEPC reacts with adenosine of single-stranded nucleic acids (2) and purines in Z-DNA (4) and B-DNA (5), respectively. For the treatment of water with DEPC, add 1 ml of DEPC to 1 liter bidistilled water (0.1 % DEPC v/v) and stir over night. Autoclaving at 20 psi for 20 minutes inactivates DEPC. DEPC reacts with water and hydrolyses to ethanol and CO_2 . It is of low solubility in aqueous buffers (solubility in water max. 40 mM). DEPC in its pure form has a concentration of 6.9 M (3). As a diluent you may use anhydrous ethanol or acetonitrile (e. g. stock solution 10 mM, ref. 3). Autoclaving totally inactivates DEPC in solutions, even if the typical smell does not disappear (1). Since DEPC acylates histidyl- and tyrosyl-residues, do not use it in combination with reagents containing these residues (e. g. Tris). Tris inactivates DEPC!

Caution: DEPC is suspected to be a carcinogen and should be handled with great care. Do not breathe fumes and avoid contact with skin! DEPC may damage eyes and mucous membranes! The combination with ammonia ions (e.g. ammonium acetate from the precipitation of nucleic acids) forms the strong carcinogen ethylcarbamate (2).

Derma-ExitusPlus™

B

HHDK, Skin decontamination reagent
(nucleic acids)

HS-No.: 38220000

Storage: RT

◆ **The first skin-friendly nucleic acid decontamination reagent!**

- removes DNA and RNA contaminations from hands and skin
- **dermatologically tested!**
- delivered as spray bottles (100 ml and 250 ml)

◆ **The special features:**

- non-enzymatic degradation of DNA and RNA by catalytic and cooperative effects of the components
- All components of Derma-ExitusPlus™ are readily biologically degradable and not harmful or toxic for humans.
- Doesn't contain aggressive mineralic acids or alkaline substances

Order-No.	Quantity
A8740,0100	100 ml
A8740,0250	250 ml

Comment: A major source of contamination with nucleic acids is the researcher himself. The nucleic acids originate from e.g. danders, hairs, and saliva or microorganism colonizing the skin are released while sneezing. Once they have entered the PCR reaction or PCR reagents, they are easily detected by the corresponding primers (especially 16S rDNA for bacterial DNA). In addition, while opening or closing reaction tubes containing DNA, such as primer, plasmid DNA or genomic DNA, there is the risk of taking up nucleic acids on skin or gloves and subsequently distributing them all over the work space by touching the equipment. This risk might be reduced but not eliminated by intensive and frequent hand washing and frequently changing gloves and wearing several gloves one upon the other. Conventional nucleic acid decontamination reagents are NOT suited to directly applying them on skin, due to their irritant, corrosive and toxic potential or other harmful properties. Derma-ExitusPlus™ is the first dermatologically tested decontamination reagent, destroying free nucleic acids on skin within a few minutes. Based on the ingredients of the ExitusPlus™ products, the degradation of nucleic acids is revealed by a chemical-catalytical mechanism. Derma-ExitusPlus™ completes the surface decontamination (DNA-ExitusPlus™) and the autoclave additive Autoclave-ExitusPlus™ which prevents the release of free nucleic acids with aerosols.

Desiccant see Calcium chloride granulated Page 177

Desmethylemetin dihydrobromide see Cephaline dihydrobromide HPLC grade Page 191

DETAPAC see Diethylenetriaminepentaacetic acid p. A. Page 278

Detritylation - Solution DNA synthesis grade

B

3 % Trichloroacetic acid in
dichloromethane

HS-No.: 38220000

Storage: 2-8°C
LGK: 10 - 13

Class / PG: 6.1/III

UN2810

WGK: 2

Warning

H351-H319-H315

P262-P301+P312-P260-P280



Density (d 20°C/4°C) ... 1.33

Specification:

Assay (CH₂Cl₂) approx. 97 %

Assay (TCA) approx. 3 %

Coupling efficiency min. 98.5 %

Order-No.	Quantity
A0817,0250	250 ml
A0817,1000	1 L

Deuterium chloride see Hydrochloric acid D₁ (DCI, 20 % solution in D₂O) Page 416

Deuterium oxide see Water D₂ Page 859

DEV-Nutrient Agar see Nutrient Agar, DEV Page 579

Dexamethason BioChemica

B

9α-Fluoro-16α-methylprednisolone

C₂₂H₂₉FO₅

M = 392.47 g/mol

CAS-No.: 50-02-2

HS-No.: 29372200

EC-No.: 200-003-9

Storage: RT

LGK: 6.1B

WGK: 3

Danger

H335-H315-H317-H334-H319

P342+P311-P261-P280-

P305+P351+P338



Melting point 250 - 260°C

Specification:

Assay min. 97 %

α20°C/D; 1 %, Dioxane +72° - +77°

Loss on drying max. 0.5 %

Order-No.	Quantity
A2153,0500	500 mg
A2153,0001	1 g
A2153,0005	5 g

Comment: The solubility of dexamethasone in water at 25°C is 10 mg/100 ml. It is soluble in acetone, ethanol and chloroform.

Dextran 40 BioChemica

B

endotoxin free

(C₆H₁₀O₅)_n

M = ~40000 g/mol

CAS-No.: 9004-54-0

HS-No.: 39139000

EC-No.: 232-677-5

Storage: RT

LGK: 10 - 13

WGK: 2

Specification:

Endotoxin complies

Order-No.	Quantity
A2249,0025	25 g
A2249,0100	100 g
A2249,0500	500 g

Dextran 70 BioChemica

B

endotoxin free

$(C_6H_{10}O_5)_n$
 $M = \sim 70000$ g/mol
CAS-No.: 9004-54-0
HS-No.: 39139000
EC-No.: 232-677-5

Storage: RT
LGK: 10 - 13

Specification:

Endotoxin complies

Order-No.	Quantity
A1847,0025	25 g
A1847,0100	100 g
A1847,0500	500 g

Dextran sulfate sodium salt

CAS-No.: 9011-18-1
HS-No.: 39139000

Storage: 2-8°C
LGK: 13
Disposal: 3

WGK: nwg
hygroscopic

Dextran sulfate 40 sodium salt BioChemica

B

Specification:

Loss on drying max. 10 %	Ca max. 0.02 %
Sulfated ash 40 - 50 %	Fe max. 0.1 %
average mol wt approx. 40,000 g/mol	Pb max. 0.0005 %
Chloride max. 0.01 %	

Order-No.	Quantity
A3261,0025	25 g
A3261,0050	50 g
A3261,0100	100 g
A3261,0250	250 g

Dextran sulfate 500 sodium salt Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable	pH (1 %; H ₂ O) 5.0 - 7.5
Loss on drying max. 10 %	Chloride max. 0.01 %
Solubility (10 %; H ₂ O) clear, colorless	Fe max. 0.0002 %
Sulfated ash 40 - 50 %	
average mol wt approx. 500,000 g/mol	

Order-No.	Quantity
A4970,0010	10 g
A4970,0025	25 g
A4970,0050	50 g
A4970,0100	100 g
A4970,0250	250 g

Dextran sulfate 500 sodium salt BioChemica

B

Specification:

Loss on drying max. 10 %	pH (1 %; H ₂ O) 5.0 - 7.5
Solubility (10 %; H ₂ O) clear, colorless	Chloride max. 0.01 %
Sulfated ash 40 - 50 %	Fe max. 0.0002 %
average mol wt approx. 500,000 g/mol	

Order-No.	Quantity
A2250,0025	25 g
A2250,0050	50 g
A2250,0100	100 g
A2250,0250	250 g

Literature: (1) Wetmur, J.G. (1975) *Biopolymers* **14**, 2517-2524

(2) Wahl, G.M. et al. (1979) *Proc. Natl. Acad. Sci. USA* **76**, 3683-3687

(3) Meinkoth, J. & Wahl, G. (1984) *Anal. Biochem.* **138**, 267-284

(4) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*. 2nd Edition page 9.50. Cold Spring Harbor Laboratory Press. Cold Spring Harbor, New York.

Acceleration of DNA renaturation rates.

Efficient transfer of large DNA fragments from agarose gels to diazobenzylxymethyl-paper and rapid hybridization by using dextran sulfate.

Review: Hybridisation of immobilized nucleic acids.

Comment: Dextran sulfate is a heparin-like polysaccharide, which improves the hybridisation rate of nucleic acids, depending on the probe employed, by a factor of 3 - 100 (2-4). This results from a reduction of the volume of the DNA-containing sample by the polymere, leading to a DNA-concentration (1, 4). Dextran sulfate should only be applied, when the hybridisation rate or the DNA-quantity is a limiting factor for the identification of 'rare' sequences. The highest effect with Dextran sulfate is observed with polynucleotides of > 250 nucleotides in length. There is no improvement with oligonucleotides less than 14 bases in length. In addition, there is no advantage for the hybridisation of bacterial colonies or plaques. It even may result in a high back ground. The handling of Dextran sulfate is made more difficult by its high viscosity (4). A 50 % stock solution is slightly yellow (2), the working concentration is 10 %. If aqueous solutions of Dextran sulfate have to be autoclaved, they have to be buffered with sodium bicarbonate to prevent a decomposition during autoclaving.

DextraSEC NA2



B

Gel Filtration Nucleic Acids

HS-No.: 38220000

Storage: RT
Do not freeze!

- ◆ contains 2 or 50 columns, respectively
- ◆ Hydrated gel filtration column for nucleic acid purification
- Column matrix: AppliXchange-G25 M
- max. sample volume: 200 µl
- Oligonucleotides should be 10 bp and more

- ◆ Applications
- Oligo desalting
- Dye Terminator Removal
- Removal of ammonia

Order-No.	Quantity
A8590,0002	1 Pack
A8590,0050	1 Pack

DextraSEC NA10



B

Gel Filtration Nucleic Acids

HS-No.: 38220000

Storage: RT
Do not freeze!

- ◆ contains 2 or 50 columns, respectively
- ◆ Hydrated gel filtration column for nucleic acid purification
 - Column matrix: AppliXchange-G25 M
 - max. sample volume: 1 ml
 - Oligonucleotides should be 10 bp and more
- ◆ Applications
 - Oligo desalting
 - Dye Terminator Removal
 - Removal of ammonia

Order-No.	Quantity
A8870,0002	1 Pack
A8870,0050	1 Pack

DextraSEC PRO2



B

Gel Filtration Protein

HS-No.: 38220000

Storage: RT
Do not freeze!

- ◆ contains 2 or 50 columns, respectively
- ◆ Hydrated gel filtration column for protein purification
 - Column matrix: AppliXchange-G25 M
 - max. sample volume: 200 µl
 - Size exclusion cut-off 10 kDa
- ◆ Applications
 - Protein desalting
 - Removal of dyes, biotin etc.
 - Removal of ammonia

Order-No.	Quantity
A8710,0002	1 Pack
A8710,0050	1 Pack

DextraSEC PRO10



B

Gel Filtration Column for Protein
Purification, Size-exclusion
Chromatography Protein

HS-No.: 38220000

Storage: RT
Do not freeze!

- ◆ contains 2 or 50 columns, respectively
- ◆ Hydrated gel filtration column for protein purification
 - Column matrix: AppliXchange-G25 M
 - max. sample volume: 1 ml
 - Size exclusion cut-off 10 kDa
- ◆ Applications
 - Protein desalting
 - Removal of dyes, biotin etc.
 - Removal of ammonia

Order-No.	Quantity
A8822,0002	1 Pack
A8822,0050	1 Pack

DextraSEC 96W



B

Gel Filtration Dye Terminator Removal,
Dye Terminator Removal by Gel Filtration

HS-No.: 38220000

Storage: RT
Do not freeze!

- ◆ contains 2 or 25 96-well plates, respectively
- ◆ Hydrated gel filtration column for nucleic acid purification
 - Column matrix: AppliXchange-G25 M
 - max. sample volume: 15 µl
 - Oligonucleotides should be 10 bp and more
- ◆ Applications
 - Oligo desalting
 - **Main application:** Dye Terminator Removal
 - Removal of ammonia

Order-No.	Quantity
A8595,0296	1 Pack
A8595,2596	1 Pack

Schardinger- α -Dextrin see α -Cyclodextrin *BioChemica* Page 250
 Dextrin see γ -Cyclodextrin *BioChemica* Page 250
 Schardinger- β -Dextrin see β -Cyclodextrin *BioChemica* Page 250
 Dextrin from corn starch see Maltodextrin white pure Page 511
 Dextrose see D(+)-Glucose anhydrous Page 377
 dGTP-Na₃ see 2'-Deoxyguanosine 5'-triphosphoric acid trisodium salt *BioChemica* Page 265
 dGTP - Solution see 2'-Deoxyguanosine 5'-triphosphoric acid - Solution (100 mM) *BioChemica* Page 265
 DHEBA see 1,2-Dihydroxyethylene-bisacrylamide *BioChemica* Page 281
 3,5-Diacetamido-2,4,6-triodobenzoic acid sodium salt see Sodium diatrizoate dihydrate Cell culture grade Page 730

Diacetone alcohol for synthesis

C

4-Hydroxy-4-methyl-2-pentanone

C₆H₁₂O₂
 M = 116.16 g/mol
 CAS-No.: 123-42-2
 HS-No.: 29144010
 EC-No.: 204-626-7

Storage: RT
 LGK: 10 - 13
 Disposal: 1

Class / PG: 3/III
 UN1148
 WGK: 1
 Warning
 H319-H226
 P262-P305+P351+P338-P210



Boiling point 166°C
 Density (d 20°C/4°C) .. 0.937
 Melting point -47°C

Specification:
 Assay (HPLC) min. 98 %

Order-No.	Quantity
A3541,1000	1 L
A3541,10006	6 x 1 L
A3541,2500	2.5 L
A3541,25004	4 x 2,5 L

Diacetoxyscirpenol *BioChemica*



B

Anguidin, DAS, Anguidine
 from *Fusarium* sp.

C₁₉H₂₆O₇
 M = 366.4 g/mol
 CAS-No.: 2270-40-8
 HS-No.: 29419000

Storage: 2-8°C

Class / PG: 6.1/II
 UN2811
 Danger
 H310-H319-H330-H300-H315
 P309+P311-P260-P262



Melting point 160 - 164°C

Specification:
 Assay (TLC) approx. 97 %
 Appearance white powder
 Solubility (10 mg/ml MeOH) clear, colorless

Order-No.	Quantity
A8571,0001	1 mg
A8571,0005	5 mg
A8571,0025	25 mg

Comment: Diacetoxyscirpenol is soluble in Chloroform, Diethyl ether, Ethyl acetate, Acetone.

1,4-Diacryloylpiperazine *BioChemica*

B

BAP, 1,4-Bis-acryloylpiperazine,
 Piperazinediacrylamide

C₁₀H₁₄N₂O₂
 M = 194.23 g/mol
 CAS-No.: 6342-17-2
 HS-No.: 29335995

Storage: 2-8°C
 LGK: 10 -13
 Disposal: 3

Warning
 H335-H315-H319
 P305+P351+P338-P261



Solubility (20 %, H₂O) clear, colorless

Specification:
 Assay (TLC) min. 99 %
 Free acid max. 0.05 %
 Heavy metals (as Pb) max. 0.001 %

Order-No.	Quantity
A2074,0001	1 g
A2074,0005	5 g
A2074,0010	10 g

Literature: (1) Artoni, G. *et al.* (1984) *Anal. Biochem.* **137**, 420-428

(2) Hochstrasser, D.F. *et al.* (1988) *Anal. Biochem.* **173**, 412-423

(3) Hochstrasser, D.F. *et al.* (1988) *Anal. Biochem.* **173**, 424-435

Fractionation techniques in a hydro-organic environment: Acryloyl-morpholine polymers as a matrix for electrophoresis in hydro-organic solvents.
 Development of polyacrylamide gels that improve the separation of proteins and their detection by Silver staining.
 Methods for increasing the resolution of two-dimensional protein electrophoresis.

Comment: The reason for a high back ground in polyacrylamide gels during the detection of proteins or nucleic acids with silver, is the staining of the amide group of bisacrylamide (Bis), the crosslinker for acrylamide in the polyacrylamide gel electrophoresis. Bis contains two amide groups, which are separated by just one C-atom. The use of diacryloylpiperazine (PIP) results in an improved staining. It is better water-soluble than Bis, gels with PIP as crosslinker show a higher conductivity, the gels does not swell that much in water and gives a higher mechanical stability to the gel. The same molarity of PIP and Bis results in a smaller pore size in SDS gels than with Bis. It increases the transfer and the separation in the second dimension of 2D-gels (2, 3)
 Diacryloylpiperazine can substitute for Bis (same concentration, same polymerisation time of approx. 1 hour).

N,N'-Diallyltartardiamide *BioChemica*

B

N,N'-Diallyltartramide, DATD
 Cross-linker

C₁₀H₁₆N₂O₄
 M = 228.25 g/mol
 CAS-No.: 58477-85-3
 HS-No.: 29241900
 EC-No.: 261-277-3

Storage: 2-8°C

WGK: 3
 Warning
 H319-H335-H315
 P305+P351+P338-P261



Specification:
 Assay (TLC) min. 99 %
 Solubility (5 %; EtOH) clear, colorless

Order-No.	Quantity
A3793,0010	10 g
A3793,0050	50 g

N,N'-Diallyltartramide see N,N'-Diallyltartardiamide *BioChemica* Page 272
 4',6-Diamidino-2-phenylindole dihydrochloride see DAPI Page 259
 1,2-Diaminobenzene see o-Phenylenediamine, free base *BioChemica* Page 620
 1,4-Diaminobenzene see p-Phenylenediamine, free base Page 620
 1,4-Diaminobenzene dihydrochloride see p-Phenylenediamine dihydrochloride *BioChemica* Page 621

3,3'-Diaminobenzidine tetrahydrochloride *BioChemica*

B

DAB, 3,3',4,4'-Tetraaminobiphenyl
tetrahydrochloride

C₁₂H₁₄N₄ · 4HCl
M = 360.12 g/mol
CAS-No.: 7411-49-6
HS-No.: 29215990
EC-No.: 231-018-9

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 3

Melting point > 300°C

Specification:

Assay (titr.) min. 97 %

Order-No.	Quantity
A0596,0001	1 g
A0596,0005	5 g
A0596,0010	10 g

- Literature:** (1) Pukac, L.A. *et al.* (1997) *BioTechniques* **23**, 385-388
(2) Fahimi, H.D. & Baumgart, E. (1999) *J. Histochem. Cytochem.* **47**, 1219-1232
(3) Togo, S.H. *et al.* (2000) *Eur. J. Biochem.* **267**, 1307-1312

Improvement of the staining of immunoblots with diaminobenzidine.
Current Cytochemical Techniques for the Investigation of Peroxisomes: A Review.
Immunological detection of alkaline-diaminobenzidine-negative peroxisomes of the nematode *Caenorhabditis elegans*.

Comment: 3,3'-Diaminobenzidine (DAB) is a widely used stain in immuno histochemistry. The substance was originally introduced for the localization of horseradish peroxidase. It forms a brown precipitate upon oxidation, insoluble in aqueous and organic solvents. It was noted that DAB simultaneously stained several organelles with endogenous peroxidase activity, i.e. peroxisomes, due to peroxidatic activity of catalase, mitochondria, due to cytochrome oxidase activity, and the endoplasmatic reticulum in Kupffer cells, due to endogenous peroxidase involved in prostanoid synthesis (2). The optimal conditions for detection of peroxisomal catalase with DAB are tissue fixation with an aldehyde fixation, incubation with 1 - 2 % DAB at high-alkaline pH of 10.5, at 37°C or 45°C, and a high concentration (0.15 %) of hydrogen peroxide (2). Peroxisomal catalase and peroxidase from the nematode *Caenorhabditis elegans* cannot be detected due to the acidic pH optimum of these enzymes (3).
Imidazole, metal ions (Ni, Cu, Co, Ag) and a low pH value improve the sensitivity and intensity of the staining reaction in immunoblotting. The type of metal ion determines the color of the precipitate (Ni: blue-grey; Ni + imidazole: grey-black; Co + imidazole: blue). This system is suitable for immunoblots (Western-blot), too (1).

1,4-Diaminobutane dihydrochloride see Putrescin dihydrochloride Page 677
3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl-phenanthridinium iodide methiodide see Propidium iodide *BioChemica* Page 669
1,2-Diaminoethane see Ethylenediamine p. A. Page 341
2,7-Diamino-10-ethyl-9-phenylphenanthridinium bromide see Ethidium bromide *BioChemica* Page 338
2,7-Diamino-10-ethyl-9-phenylphenanthridinium bromide - Solution see Ethidium bromide - Solutions Page 338
(s)-2,6-Diaminohexanoic acid see L-Lysine acetate salt pure USP Page 500
L-2,6-Diamino-n-hexanoic acid monohydrate see L-Lysine monohydrate Page 499
L-2,6-Diamino-n-hexanoic acid monohydrochloride see L-Lysine monohydrochloride Page 499
3,6-Diamino-10-methyl-acridiniumchloride hydrochloride see Acriflavine hydrochloride *BioChemica* Page 51
3,8-Diamino-5-methyl-6-phenylphenanthridinium bromide see Dimidium bromide *BioChemica* Page 288
L-2,5-Diaminovaleric acid hydrochloride see L-Ornithine hydrochloride Page 586
Diammonium hydrogen citrate see di-Ammonium hydrogen citrate Page 96
Diamond green see Brilliant green (C.I. 42040) Page 158
3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride) see Tetrazolium blue chloride Page 809

DIASALM Medium Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 2.7 g/L
Bromocresol purple 0.08 g/L
Buffers 1.2 g/L
Ferrous ammonium sulfate 0.2 g/L
Lactose 0.5 g/L

Peptones 27.0 g/L
Sodium deoxycholate 0.037 g/L
Sodium thiosulfate 0.8 g/L
Sucrose 7.5 g/L

Specification:

pH before autoclaving
..... approx. 5.5 (20°C)

Order-No.	Quantity
A5718,0500	500 g
A5718,5000	5 kg

♦ **Attention:** Please note that two supplements (A6785 & A6920) exist for this agar. Please order separately.

Literature: (1) Van der Zee & Van Netten (1992) *Proc. Symp. "Salmonella and Salmonellosis". Ploufragan: 69.*

Comment: This semi-solid selective diagnostic motility medium is used for the isolation of *Salmonella* spp.

Direction: Fill up 40 ml of DIASALM-MSRV Magnesium Chloride Solution (A6920) to 1 L with distilled water. Suspend 40 g of dehydrated medium and bring to boil with frequent agitation until the medium is dissolved completely. Cool to 50°C and aseptically add the contents of one vial of DIASALM-MSRV "Selective Supplement" (A6785) reconstituted with 4 ml of sterile distilled water. Mix gently before pouring. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. The prepared medium may be stored at 2-8°C, no longer than 7 days.

DIASALM-MSRV Magnesium Chloride Solution see Supplements for Microbiological Media Page 786
DIASALM-MSRV Selective Supplement see Supplements for Microbiological Media Page 786
Diatom earth see Kieselguhr calcined and purified, NF Page 471
Diatrizoic acid sodium salt dihydrate see Sodium diatrizoate dihydrate Cell culture grade Page 730
1,3-Diaza-2,4-cyclopentadiene see Imidazole Page 445
4,5,4',5'-Dibenzo-3,3'-diethyl-9-methylthio-carbocyanine bromide see Stains all Page 762
2,8-Dibenzyl-6-(p-hydroxyphenyl)-imidazo-[1,2a]pyrazine-3-(7H)-one see Coelenterazine H *BioChemica* Page 220
5',5"-Dibromo-o-cresolsulfonaphthalein see Bromocresol purple Page 160
5',5"-Dibromo-3',3'-dichlorophenolsulfone-phthalein see Bromochlorophenol blue Page 159
47,57-Dibromo-22,77-dinitrofluorescein disodium salt see Eosin B (C.I. 45400) Page 328
3',3"-Dibromophenolsulfonaphthalein see Bromophenol red Page 162
3',3"-Dibromo-p-xylenolsulfonaphthalein see Bromoxylenol blue Page 163
3',3"-Dibromothymolsulfonaphthalein see Bromothymol blue Page 163
3',3"-Dibromothymolsulfonaphthalein sodium salt see Bromothymol blue sodium salt Page 163

N⁶-2'-O-Dibutryl-adenosine 3',5'-cyclophosphate sodium salt monohydrate**B**

Bucladesine

C₁₈H₂₃N₅NaO₈P · H₂O
M = 509.39 g/mol
 CAS-No.: 16980-89-5
 HS-No.: 29349990
 EC-No.: 241-059-4

Storage: -20°C

WGK: 1

Specification:

Assay min. 99 %
 Solubility (10 %; H₂O) clear, colorless
 cAMP max. 0.01 %
 N⁶-Monobutryladenosine-3',5'-cyclophosphate max. 0.5 %

Order-No.	Quantity
A0455,0100	100 mg
A0455,0250	250 mg
A0455,1000	1 g

Literature: (1) Cook, S.J. & McCormick, F. (1993) *Science* **262**, 1069-1072

Inhibition of the Ras-dependent activation of Raf by cAMP.

2,3-Dicaffeoyltartaric acid see Cichoric acid HPLC grade Page 212

Dicarboxylic acid C₂ see Oxalic acid dihydrate Page 587

Dichlorodimethylsilane see Dimethyldichlorosilane BioChemica Page 283

1,2-Dichloroethane

Ethylene dichloride, Ethylene chloride

C₂H₄Cl₂
M = 98.97 g/mol
 CAS-No.: 107-06-2
 HS-No.: 29031500
 EC-No.: 203-458-1

Storage: RT
 LGK: 3 A
 Disposal: 2

Class / PG: 3(6.1)/II
 UN1184
 WGK: 3
 Danger
 H335-H319-H225-H315-H350-H302
 P302+P352-P304+P340-
 P305+P351+P338-P210-P201-
 P308+P313



Boiling point 83.5 - 84.1°C
 (1013 hPa)
 Density (20°C) 1.25 g/cm³
 Melting point -35.5°C

1,2-Dichloroethane HPLC grade**C****Specification:**

Assay (HPLC) min. 99.8 %
 Acidity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.01 %

A (1 cm/water HPLC grade)
 250 nm max. 0.3
 260 nm max. 0.05
 280 nm max. 0.01
 300 nm max. 0.005

Order-No.	Quantity
A1579,1000	1 L
A1579,10006	6 x 1 L
A1579,2500	2.5 L
A1579,25004	4 x 2,5 L

1,2-Dichloroethane p. A.**C****Specification:**

Assay (HPLC) min. 99.5 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0002 %
 Total P max. 0.00002 %
 Total S max. 0.00005 %
 Water (K.F.) max. 0.03 %

Ca max. 0.00002 %
 Cu max. 0.00005 %
 Fe max. 0.0001 %
 K max. 0.00002 %
 Mg max. 0.00001 %
 Na max. 0.00005 %
 Pb max. 0.000002 %
 Zn max. 0.00002 %

Order-No.	Quantity
A2345,0500	500 ml
A2345,1000	1 L
A2345,10006	6 x 1 L
A2345,2500	2.5 L
A2345,25004	4 x 2,5 L

1,2-Dichloroethane pure**C****Specification:**

Assay (HPLC) min. 99 %
 Acidity/Alkalinity max. 0.001 meq/g
 Non-volatile matter max. 0.0003 %
 Water (K.F.) max. 0.02 %
 Al max. 0.00005 %
 Ca max. 0.00005 %

Cu max. 0.00005 %
 Fe max. 0.0001 %
 K max. 0.00005 %
 Na max. 0.0001 %
 Pb max. 0.00001 %
 Zn max. 0.00005 %

Order-No.	Quantity
A3554,0500	500 ml
A3554,1000	1 L
A3554,10006	6 x 1 L
A3554,2500	2.5 L
A3554,25004	4 x 2,5 L

1,2-Dichloroethane for synthesis**C****Specification:**

Assay (HPLC) min. 99 %

Order-No.	Quantity
A6300,2500	2.5 L
A6300,25004	4 x 2,5 L
A6300,5000	5 L
A6300,9010	10 L
A6300,9025BK	25 L
A6300,9025PE	25 L

3,5-Dichloro-2-hydroxybenzenesulfonic acid sodium salt**B**

Melting point > 300°C

C₆H₃Cl₂NaO₃S
M = 265.05 g/mol
 CAS-No.: 54970-72-8
 HS-No.: 29089990
 EC-No.: 259-416-8

Storage: RT
 LGK: 10 - 13

WGK: 3

Specification:

Assay (titr.) min. 98 %
 Solubility (5 %; H₂O) clear, colorless

Order-No.	Quantity
A3098,0005	5 g
A3098,0025	25 g

D(-)-threo-2,2-Dichloro-N-[β-(hydroxy-α-(hydroxymethyl)-β-(4-nitrophenyl)-ethyl]-acetamide see Chloramphenicol Page 201

Dichloromethane

Boiling point 40°C
Density (d 20°C/4°C) .. 1.326
Melting point -95°C
Solubility (20°C) 20 g/L (H₂O)
n 20°C/D 1.4244

CH₂Cl₂
M = 84.93 g/mol
CAS-No.: 75-09-2
HS-No.: 29031200
EC-No.: 200-838-9

Storage: RT
LGK: 10 - 13
Disposal: 2

Class / PG: 6.1/III
UN1593
WGK: 2
Warning
H351
P281-P308+P313



Dichloromethane DNA synthesis and protein sequencing grade

B

stabilized with 50 ppm Amylene

Specification:

Assay (HPLC) min. 99.9 %
Acidity/Alkalinity max. 0.0003 meq/g
Free chlorine max. 5 ppm
Non-volatile matter max. 2 ppm
Water (K.F.) max. 0.01 %

A (1 cm in water)
240 nm max. 0.1
250 nm max. 0.01
270 nm max. 0.005

Order-No.	Quantity
A2338,0500	500 ml
A2338,1000	1 L
A2338,2500	2.5 L

Dichloromethane Residue analysis grade

C

stabilized with 50 ppm Amylene

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.05 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1607,2500	2.5 L
A1607,2504	4 x 2,5 L

Dichloromethane HPLC grade

C

stabilized with 50 ppm Amylene

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %

A (1 cm/water HPLC grade)
240 nm max. 0.125
250 nm max. 0.01
260 nm max. 0.005

Order-No.	Quantity
A1609,1000	1 L
A1609,10006	6 x 1 L
A1609,2500	2.5 L
A1609,2504	4 x 2,5 L

Dichloromethane for GPC

C

stabilized with 50 ppm Amylene

To be used in gel permeation chromatography, filtered through 0.2 μm filter.

Specification:

Assay (HPLC) min. 99.8 %
Color max. 5 APHA
Non-volatile matter max. 0.0002 %
Water (K.F.) max. 0.02 %

Order-No.	Quantity
A2352,0500	500 ml
A2352,1000	1 L
A2352,2500	2.5 L

Dichloromethane dried, p. A.

C

stabilized with 50 ppm Amylene

Specification:

Assay (HPLC) min. 99.8 %
Non-volatile matter max. 0.0002 %
Water (K.F.) max. 0.01 %

Order-No.	Quantity
A2360,0500	500 ml
A2360,1000	1 L
A2360,10006	6 x 1 L

◆ This product contains molecular sieve as a drying agent!

Dichloromethane p. A.

C

Methylene chloride

stabilized with 50 ppm Amylene

Specification:

Assay (HPLC)	min. 99.5 %	K	max. 0.00005 %
Acidity/Alkalinity	max. 0.0005 meq/g	Mg	max. 0.000005 %
Non-volatile matter	max. 10 ppm	Na	max. 0.00005 %
Total P	max. 0.00002 %	Ni	max. 0.00005 %
Total S	max. 0.00005 %	Pb	max. 0.000005 %
Total Si	max. 0.000005 %	Zn	max. 0.00001 %
1,1-Dichloroethane	max. 0.005 %		
CCl ₄	max. 0.01 %		
Chloroform	max. 0.01 %		
Water (K.F.)	max. 0.02 %		
Ca	max. 0.00005 %		
Cu	max. 0.000002 %		
Fe	max. 0.00001 %		

Order-No.	Quantity
A0618,0100	100 ml
A0618,0500	500 ml
A0618,1000	1 L
A0618,10006	6 x 1 L
A0618,2500	2.5 L
A0618,25004	4 x 2.5 L
A0618,5000	5 L
A0618,9010	10 L
A0618,9020	20 L
A0618,9025BK	25 L
A0618,9025PE	25 L

Dichloromethane pure Ph. Eur.

C

*stabilized with 50 ppm Amylene***Specification:**

Assay (HPLC)	min. 99 %	Water (K.F.)	max. 0.02 %
Acidic reacting subst.	complies		
Appearance of substance	complies		
EtOH, 2-Methyl-2-buten, other rel. subst.	complies		
Free chlorine	complies		
Heavy metals (as Pb)	max. 0.0001 %		
Identity	complies		
Refractive index	1.423 - 1.425		
Relative density	1.320 - 1.332		
Residue after evaporation	max. 0.002 %		

Order-No.	Quantity
A3185,0500	500 ml
A3185,1000	1 L
A3185,10006	6 x 1 L
A3185,2500	2.5 L
A3185,25004	4 x 2.5 L
A3185,5000	5 L
A3185,9010	10 L
A3185,9025BK	25 L
A3185,9025PE	25 L

Dichloromethane pure

C

*stabilized with 50 ppm Amylene***Specification:**

Assay (HPLC)	min. 99 %
Water (K.F.)	max. 0.1 %

Order-No.	Quantity
A1608,1000	1 L
A1608,10006	6 x 1 L
A1608,2500	2.5 L
A1608,25004	4 x 2.5 L
A1608,5000	5 L
A1608,9010	10 L
A1608,9020	20 L
A1608,9025BK	25 L
A1608,9025PE	25 L

Dichloromethane for synthesis

C

*stabilized with 50 ppm Amylene***Specification:**

Assay	min. 99 %
Density (d 20°C/4°C)	1.323 - 1.325

Order-No.	Quantity
A4709,1000	1 L
A4709,10006	6 x 1 L
A4709,2500	2.5 L
A4709,25004	4 x 2.5 L
A4709,5000	5 L
A4709,9010	10 L
A4709,9025BK	25 L
A4709,9025PE	25 L

Dichloromethane Technical grade

C

*stabilized with 50 ppm Amylene***Specification:**

Assay (HPLC)	approx. 98 %

Order-No.	Quantity
A3177,2500	2.5 L
A3177,25004	4 x 2.5 L
A3177,5000	5 L
A3177,9010	10 L
A3177,9025BK	25 L
A3177,9025PE	25 L

Dichloromethane D₂

C

Boiling point 39°C
Density (d 20°C/4°C) .. 1.36
Melting point -97°C
Solubility (20°C) 20 g/L (H₂O)

CD₂Cl₂
M = 86.95 g/mol
CAS-No.: 1665-00-5
HS-No.: 28459010
EC-No.: 216-776-0

Storage: RT
LGK: 10 - 13
Disposal: 2

Class / PG: 6.1/II
UN1593
WGK: 2
Warning
H351
P308+P313-P281



Specification:
Deuteration degree min. 99.6 %

Order-No.	Quantity
DS-15,0001	1 ml
DS-15,0005	5 ml
DS-15,0025	25 ml

3',3''-Dichlorophenolsulfonephthalein see Chlorophenol red Page 206
recombinant Human Dickkopf-Related Protein-1 see rHu DKK-1 Page 291

N,N'-Dicyclohexylcarbodiimide for synthesis

C

DCC

Boiling point (15 hPa) 148 - 152°C
Melting point 32 - 35°C

C₁₃H₂₂N₂
M = 206.33 g/mol
CAS-No.: 538-75-0
HS-No.: 29252900
EC-No.: 208-704-1

Storage: RT
LGK: 6.1 B
Disposal: 3

Class / PG: 6.1/II
UN2811
WGK: 3
Danger
H317-H318-H311-H302
P305+P351+P338-P280-P302+P352



Specification:
Assay (HPLC) min. 99 %
Identity (IR) complies

Order-No.	Quantity
A0407,0100	100 g
A0407,0500	500 g
A0407,1000	1 kg
A0407,10006	6 x 1 kg

13,19-Didehydro-12-hydroxy senecionane-11,16-dione see Seneciphyllin HPLC grade Page 708

Diethanolamine BioChemica

B

2,2'-Iminodiethanol, Bis-(2-hydroxyethyl)-amine

Boiling point 269 - 271°C
Density (d 20°C/4°C) .. 1.09
Melting point 26 - 28°C

C₄H₁₁NO₂
M = 105.14 g/mol
CAS-No.: 111-42-2
HS-No.: 29221200
EC-No.: 203-868-0

Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1
Danger
H302-H373-H315-H318
P302+P352-P305+P351+P338-P314



Specification:
Assay (HPLC) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 0.5 %

Order-No.	Quantity
A2155,0100	100 g
A2155,0250	250 g
A2155,0500	500 g

Literature: (1) Engvall, E. (1980) *Methods Enzymol.* **70**, 419-439

Enzyme-Immuno-Assays: ELISA and EMIT.

Comment: The activity of the alkaline phosphatase may be determined in an ELISA with p-nitrophenyl phosphate (1 mg/ml; Order-No. A1442) in 1 M diethanolamine buffer (pH 9.8). The reaction is stopped by the addition of one quarter of the volume 2 M NaOH. The yellow dye of p-nitrophenyl is determined at 405 nm (1).

2-Diethylaminoethanol pure

C

N,N-Diethyl ethanolamine

Boiling point 269 - 271°C
Density (d 20°C/4°C) .. 0.883 - 0.885
Water (K.F.) max. 0.5 %

C₆H₁₅NO
M = 117.19 g/mol
CAS-No.: 100-37-8
HS-No.: 29221985
EC-No.: 202-845-2

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 8(3)/II
UN2686
WGK: 1
Danger
H226-H314-H302-H332-H312
P301+P330+P331-P302+P352-P262-
P305+P351+P338-P210-P280



Specification:
Assay (titr.) min. 99 %
Density (d 20°C/4°C) 0.883 - 0.885
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A4811,1000	1 L
A4811,10006	6 x 1 L
A4811,2500	2.5 L

Diethylaminoethylidextran see DEAE-Dextran BioChemica Page 260

7-Diethylamino-N-6-aminohexyl-2-oxo-2H-chromen-3-carboxamide see Colorado 400 - 449 nm (yellow spectrum) Page 240

7-Diethylamino-N-6-((iodoacetylaminohexyl)-2-oxo-2H-chromen-3-carboxamid see Colorado 400 - 449 nm (yellow spectrum) Page 240

Diethylidicarbonate see DEPC BioChemica Page 268

Diethylidithiocarbamic acid sodium salt see Sodium diethylidithiocarbamate trihydrate BioChemica Page 730

Diethylene glycol for synthesis

C

2,2'-Dihydroxyethyl ether, Diglycol

 $C_4H_{10}O_3$ $M = 106.12 \text{ g/mol}$

CAS-No.: 111-46-6

HS-No.: 29094100

EC-No.: 203-872-2

Storage: RT

LGK: 1

Disposal: 10

WGK: 1

Warning

H302

P301+P312

Boiling point 244 - 247°C

Density (d 20°C/4°C) .. 1.116

Melting point -6°C

n 20°C/D 1.4475



Specification:

Assay (HPLC) min. 99 %

Water (K.F.) max. 0.3 %

Order-No.

A1289,1000

A1289,10006

A1289,2500

A1289,5000

A1289,9010

A1289,9025

Quantity

1 L

6 x 1 L

2.5 L

5 L

10 L

25 L

Diethylene oxide see 1,4-Dioxane Page 289

Diethylenetriaminepentaacetic acid p. A.

C

DTPA, DETAPAC,

Penta(carboxymethyl)diethylenetriamine

 $C_{14}H_{23}N_5O_{10}$ $M = 393.34 \text{ g/mol}$

CAS-No.: 67-43-6

HS-No.: 29224985

EC-No.: 200-652-8

Storage: RT

LGK: 10-13

Disposal: 3

WGK: 2

Warning

H319

P305+P351+P338



Specification:

Assay (titr.) min. 98 %

Identity (IR) complies

Chloride max. 0.1 %

Sulfate max. 0.02 %

Cd max. 0.0005 %

Cu max. 0.0005 %

Pb max. 0.0005 %

Order-No.

A6304,0250

A6304,1000

A6304,10006

Quantity

250 g

1 kg

6 x 1 kg

N,N-Diethylethylamine see Triethylamine Page 832

N,N-Diethyl ethanolamine see 2-Diethylaminoethanol pure Page 277

Diethyl ether

Ethyl ether, Ether

 $C_4H_{10}O$ $M = 74.12 \text{ g/mol}$

CAS-No.: 60-29-7

HS-No.: 29091100

EC-No.: 200-467-2

Storage: RT

LGK: 3 A

Disposal: 1

Class / PG: 3/I

UN1155

WGK: 1

Danger

EUH066-EUH019-H302-H224-H336

P210-P240-P403+P235



Boiling point 34°C

Density (d 20°C/4°C) .. 0.71

Melting point -116°C

n 20°C/D 1.3526

Diethyl ether ultrapure

C

non-stabilized

Specification:

Assay (HPLC) min. 99.9 %

Acidity/Alkalinity max. 0.0002 meq/g

Non-volatile matter max. 0.0002 %

Total P max. 0.02 ppm

Total S max. 0.1 ppm

Acetone max. 0.002 %

Ethanol max. 0.002 %

Methanol max. 0.005 %

Water (K.F.) max. 0.01 %

Al max. 0.02 ppm

Ba max. 0.005 ppm

Ca max. 0.05 ppm

Cd max. 0.005 ppm

Cr max. 0.005 ppm

Fe max. 0.05 ppm

Li max. 0.005 ppm

Mg max. 0.02 ppm

Mn max. 0.005 ppm

Na max. 0.2 ppm

Ni max. 0.005 ppm

Pb max. 0.005 ppm

Zn max. 0.01 ppm

Order-No.

A2349,0250

A2349,0500

A2349,1000

A2349,10006

A2349,2500

Quantity

250 ml

500 ml

1 L

6 x 1 L

2.5 L

Diethyl ether Residue analysis grade

C

stabilized with 1 % Ethanol

Specification:

Assay (HPLC) min. 99.5 %

Acidity/Alkalinity max. 0.0005 meq/g

Non-volatile matter max. 0.001 %

Water (K.F.) max. 0.1 %

GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L

GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.

A1758,2500

A1758,25004

Quantity

2.5 L

4 x 2,5 L

Diethyl ether HPLC grade

C

stabilized with 1 % Ethanol

Specification:

Assay (HPLC)	min. 99 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	230 nm max. 0.3
Non-volatile matter	max. 0.001 %	250 nm max. 0.1
Water (K.F.)	max. 0.02 %	260 nm max. 0.05
		280 nm max. 0.025
		300 nm max. 0.005

Order-No.	Quantity
A1759,1000	1 L
A1759,10006	6 x 1 L
A1759,2500	2.5 L
A1759,25004	4 x 2,5 L

Diethyl ether dried, p. A.

C

stabilized with 1 ppm Jonol

Specification:

Assay (HPLC)	min. 99.8 %
Non-volatile matter	max. 2 ppm
Peroxides	max. 0.00005 %
Water (K.F.)	max. 0.01 %

Order-No.	Quantity
A2361,0250	250 ml
A2361,0500	500 ml
A2361,1000	1 L
A2361,10006	6 x 1 L

◆ This product contains molecular sieve as a drying agent!

Diethyl ether p. A.

C

stabilized with 1 ppm BHT

Specification:

Assay (HPLC)	min. 99.5 %	Cu	max. 0.000005 %
Acidity/Alkalinity	max. 0.0005 meq/g	Fe	max. 0.00001 %
Non-volatile matter	max. 0.001 %	K	max. 0.00005 %
Total P	max. 0.00001 %	Mg	max. 0.000005 %
Total S	max. 0.00002 %	Na	max. 0.00005 %
Acetone	max. 0.005 %	Pb	max. 0.000005 %
Aldehydes	max. 0.001 %	Zn	max. 0.000005 %
Ethanol	max. 0.05 %		
Peroxides	max. 0.0001 %		
Water (K.F.)	max. 0.1 %		
Ca	max. 0.00002 %		

Order-No.	Quantity
A0787,0100	100 ml
A0787,0500	500 ml
A0787,1000	1 L
A0787,10006	6 x 1 L
A0787,2500	2.5 L
A0787,25004	4 x 2,5 L
A0787,5000	5 L
A0787,9010	10 L
A0787,9025BK	25 L

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

Phenol extractions in small and large scale.

Comment: The purification of nucleic acids normally includes a phenol extraction step (denaturation of proteins). In case, that there is some residual phenol in the aqueous phase, the following enzymatic treatment will be inhibited. Water-saturated diethyl ether is very well suited to remove such residual phenol by extraction. For preparing water-saturated diethyl ether mix well equal volumes of sterile water and diethyl ether. The upper phase is the ether. For extracting the phenol, add the same volume water- saturated diethyl ether to the aqueous phase (containing DNA), mix and keep for 5 minutes on ice (no centrifugation). When the phases have separated, carefully remove the diethyl ether. If no high molecular weight DNA is isolated, the sample may be frozen in a dry-ice bath for separating the phases. While the aqueous phase will freeze, the diethyl ether stays liquid and can be easily removed.

Diethyl ether pure Ph. Eur.

C

stabilized with 1 ppm BHT

Specification:

Assay (HPLC)	min. 99 %
Acidic reacting subst.	complies
Distillation range	34.0 - 35.0°C
Foreign odor	complies
Identity	complies
Non-volatile matter	max. 0.002 %
Relative density	0.714 - 0.716
Aldehydes	complies
Peroxides	complies
Water (K.F.)	max. 0.2 %

Order-No.	Quantity
A0788,0500	500 ml
A0788,1000	1 L
A0788,10006	6 x 1 L
A0788,2500	2.5 L
A0788,25004	4 x 2,5 L
A0788,5000	5 L
A0788,9010	10 L
A0788,9025BK	25 L

Diethyl ether for synthesis

C

stabilized with 1 ppm Jonol

Specification:

Assay (HPLC)	min. 99 %
Aldehydes	max. 0.05 %
Peroxides	max. 0.0005 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A4244,1000	1 L
A4244,10006	6 x 1 L
A4244,2500	2.5 L
A4244,25004	4 x 2,5 L
A4244,5000	5 L
A4244,9010	10 L
A4244,9025BK	25 L

Diethyl ether Technical grade

C

stabilized with 1 ppm Jonol

Specification:

Assay (HPLC)	min. 98 %
Peroxides	max. 0.005 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A4498,2500	2.5 L
A4498,25004	4 x 2,5 L
A4498,5000	5 L
A4498,9010	10 L
A4498,9025BK	25 L

Diethyl ether D₁₀

C

Boiling point 34.6°C
Density (d 20°C/4°C) .. 0.78
Melting point -116°C

C₄D₁₀O
M = 84.18 g/mol
CAS-No.: 2679-89-2
HS-No.: 28459010
EC-No.: 220-235-4

Storage: RT
LGK: 3 A
Disposal: 3

Class / PG: 3/I
UN1155
WGK: 1
Danger
EUH019-EUH066-H302-H224-H336
P273-P210-P331-P243-P403+P235-
P301+P310



Specification:

Deuteration degree min. 99.5 %

Order-No.	Quantity
DS-20,0001	1 ml
DS-20,0005	5 ml

Diethylpyrocabonate see DEPC *BioChemica* Page 268
Diferuloylmethane see Curcumin HPLC grade Page 248
Digilandin C see Lanatosid C HPLC grade Page 479
Digitin see Digitonin Reagent USP Page 280
Digitoflavone see Luteolin HPLC grade Page 498

Digitonin Reagent USP

B

Digitin
Aggregation No. 60 - 70
Classification: nonionic detergent
Melting range 235 - 240°C

C₅₆H₉₂O₂₉
M = 1229.34 g/mol
CAS-No.: 11024-24-1
HS-No.: 29389010
EC-No.: 234-255-6

Storage: RT

Class / PG: 6.1/III
UN3462
WGK: 3
Danger
H311-H330-H331
P280-P310-P260-P284



Specification:

α20°C/D: 10 %; 75 % AcOH -47° - -49°
Loss on drying max. 6 %
Residue on ignition max. 0.3 %
Solubility (2.5 %, warm EtOH)
..... clear, colorless

Order-No.	Quantity
A1905,0100	100 mg
A1905,0500	500 mg
A1905,0001	1 g
A1905,0005	5 g

Literature: (1) Scallen T.J. & Dietert, S.E. (1969) *J. Cell Biol.* **40**, 802-813

(2) Demoliou-Mason, C.D. & Barnard, E.A. (1984) *FEBS Lett.* **170**, 378-382

(3) Mooney, R.A. (1988) *Methods Enzymol.* **159**, 193-202

(4) Kiefer, H. et al. (1996) *Biochemistry* **35**, 16077-16084

The Quantitative Retention of Cholesterol in Mouse Liver prepared for Electron Microscopy by Fixation in a Digitonin-containing Aldehyde Solution.
Solubilization in high yield of opioid receptors retaining high-affinity delta, mu and kappa binding sites.
Use of Digitonin-permeabilized Adipocytes for cAMP Studies.
Expression of an Olfactory Receptor in *E. coli*: Purification, Reconstitution and Ligand Binding.

Comment: Digitonin is a steroid glycoside from *Digitalis purpurea*. It may permeabilize plasma membranes and may form complexes with cholesterol (1, 3). It belongs to the class of non-ionic detergents and is frequently used to dissolve membrane-bound proteins. At concentrations between 10 - 100 µg/ml, cholesterol-rich plasma membranes are permeabilized only, but not those of organelles (3). Digitonin is suitable to e.g. isolate the opioid receptors from membranes of rat brains, maintaining the capability to bind different agonists/antagonists (2). Digitonin is hardly soluble in either water, chloroform or ether. You may dissolve 1 g/57 ml in absolute ethanol and 1 g/220 ml in 95% ethanol, respectively. Stock solutions of Digitonin (e.g. 10 % w/v or 1 mg/ml) in water or buffer (e.g. pH 7.2 - 7.5) may be prepared by heating (95 - 100°C) or vortexing, until a clear solution is obtained. Digitonin that may precipitate after cooling (+4°C) is removed by filtration (1, 2, 4). DMSO may be used as well (stock solution 20 mg/ml). Stability of stock solutions: solutions of Digitonin may be stored up to one week at +4°C. The capability of Digitonin to permeabilize membranes may differ from batch to batch from all suppliers (3).

Diglycine see Glycylglycine Page 388

Diglycine hydrochloride see Glycylglycine hydrochloride Buffer grade Page 388

Diglycol see Diethylene glycol for synthesis Page 278

Dihydrocytochalasin B *BioChemica*

B

semisynthetic derivative of Cytochalasin B
obtained from *Drechslera dematoides*

C₂₉H₃₉NO₅
M = 481.62 g/mol
CAS-No.: 39156-67-7
HS-No.: 29349990

Storage: -20°C
protected from light

Class / PG: 6.1/II
UN2811
Danger
H300-H330-H310-H351
P284-P280-P310-P260-P302+P350-
P264



Specification:

Assay min. 98 %
Solubility (10 mg/ml MeOH) clear, colorless

Order-No.	Quantity
A7661,0001	1 mg
A7661,0005	5 mg

Literature: (1) Atlas, S.J. & Lin, S. (1978) *J. Cell Biol.* **76**, 360-370

(2) Chang, D. & Lin, S. (1978) *J. Biol. Chem.* **253**, 1415-1419

(3) Martineau, S.N. et al. (1995) *J. Cell Biol.* **131**, 191-205

Dihydrocytochalasin B: Biological Effects and Binding to 3T3 Cells.
High Affinity Binding of ³H-Dihydrocytochalasin B to Peripheral Membrane Proteins Related to the Control of Cell Shape in the Human Red Cell.
Delay of HeLa Cell Cleavage into Interphase Using Dihydrocytochalasin B.

Comment: Dihydrocytochalasin B (dhCB) is a semisynthetic derivative of Cytochalasin B (CB), isolated from *Drechslera dematoides*. It differs by the absence of a single double bond from CB. Out of the several Cytochalasins, dhCB is the one with the highest specificity in terms of inhibition of actin polymerization. Otherwise, the effects in terms of cell division and cell morphology are comparable. The uptake of sugars into cells is not inhibited, if compared with CB (1).

Solubility and Stability: The working concentration ranges from 2 - 10 µM (1-3). Dihydrocytochalasin B is soluble in acetone, DMSO, 100 % ethanol and methanol. Solutions are stable for several years, if stored at -20°C.

1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridine-4-one-3-carboxylic acid see Nalidixic acid *BioChemica* Page 558

Dihydrofolic acid *BioChemica*

B

FAH₂, 7,8-Dihydropteroyl-L-glutamic acid

C₁₉H₂₁N₇O₆
M = 443.40 g/mol
CAS-No.: 4033-27-6
HS-No.: 29362900

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (enzym.) min. 88 %
Solubility (1 %; 0.1 M NaOH) slightly opal, orange
Loss on drying max. 12 %

Order-No.	Quantity
A3794,0005	5 mg
A3794,0025	25 mg

α-Dihydrofucosterol see β-Sitosterol Page 719
7,8-Dihydropteroyl-L-glutamic acid see Dihydrofolic acid *BioChemica* Page 281
Dihydroquercetin see (+)-Taxifolin HPLC grade Page 796
22,23-Dihydrostigmasterol see β-Sitosterol Page 719
1,2-Dihydroxyanthraquinone see Alizarin (C.I. 58000) Page 79
1,8-Dihydroxyanthraquinone-3-carbonic acid see Rhein Page 686
1,4-Dihydroxybenzene see Hydroquinone Page 425
2,2'-Dihydroxy-(2,2'-bi-indan)-1,1',3,3'-tetrone see Hydrindantin dihydrate pure Page 411
2,3-Dihydroxybutane-1,4-dithiol see DTE *BioChemica* Page 309
5,7-Dihydroxy-4',6-dimethoxyflavon see Pectolarigenin HPLC grade Page 600
3α,12α-Dihydroxy-5β-cholanoic acid see Deoxycholic acid *BioChemica* Page 264
3α,7α-Dihydroxy-5β-cholanoic acid see Chenodeoxycholic acid *BioChemica* Page 199
6,7-Dihydroxy-coumarin-6-glucoside see Esculin *BioChemica* Page 332

1,2-Dihydroxyethylene-bisacrylamide *BioChemica*

B

N,N'-Bisacryloyl-1,2-dihydroxy-1,2-ethylenediamine, DHEBA
Cross-linker

C₈H₁₂N₂O₄
M = 200.20 g/mol
CAS-No.: 868-63-3
HS-No.: 29241900
EC-No.: 212-780-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Warning
H319-H332-H302-H312-H335-H315
P305+P351+P338-P280



Melting point 141 - 143°C

Specification:

Assay (TLC) min. 99 %

Order-No.	Quantity
A3795,0005	5 g
A3795,0025	25 g

2,2'-Dihydroxyethyl ether see Diethylene glycol for synthesis Page 278
2,4-Dihydroxy-5-fluoropyrimidine see 5-Fluorouracil *BioChemica* Page 354
4,4'-Dihydroxyfuchson-3,3',3''- tricarboxylic acid triammonium salt see Aurintricarboxylic acid triammonium salt (C.I. 43810) *BioChemica* Page 122
1,7-Dihydroxyginkgolide A see Ginkgolide C HPLC grade Page 374
1,8-Dihydroxy-3-(hydroxymethyl)-anthraquinone see Aloe-Emodin synthetic HPLC grade Page 82
4,6-Dihydroxy-2-mercaptopurimidine see Thiobarbituric acid *BioChemica* Page 812
5,7-Dihydroxy-8-methoxyflavon see Wogonin HPLC grade Page 866
5,7-Dihydroxy-4'-methoxyflavone see Acacetin HPLC grade Page 38
2,4-Dihydroxy-5-methylpyrimidine see Thymine Page 815
3,23-Dihydroxyolean-12-en-28-acid see Hederagenin Page 399
3,4-Dihydroxyphenylethanol see Hydroxytyrosol HPLC grade Page 428
2,6-Dihydroxypurine see Xanthine Page 868
2,4-Dihydroxypyrimidine see Uracil *BioChemica* Page 849
4,6-Dihydroxypyrimidine-2-thiol see Thiobarbituric acid *BioChemica* Page 812
12,16-Dihydroxysenecionan-11,16-dione see Retrorsin HPLC grade Page 685
12,16-Dihydroxysenecionan-11,16-dion-4-oxide see Retrorsin-N-oxide HPLC grade Page 685
3,5-Diiodo-2-hydroxybenzoic acid lithium salt see Lithium 3,5-diiodosalicylate Page 493
3,5-Diiodosalicylic acid lithium salt see Lithium 3,5-diiodosalicylate Page 493
Diisobutylphenoxethoxyethylmethylbenzyl ammonium chloride see Benzethonium chloride Page 133

Diisopropyl ether

C₆H₁₄O
M = 102.18 g/mol
CAS-No.: 108-20-3
HS-No.: 29091990
EC-No.: 203-560-6

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1159
WGK: 1
Danger
EUH066-EUH019-H225-H336
P210-P240-P403+P235



Diisopropyl ether p. A.

C

2,2'-Oxobispropane, *Isopropyl ether*
stabilized with 10 ppm BHT

Specification:

Assay (HPLC) min. 98.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Identity (IR) complies
Residue after evaporation max. 0.005 %
Loss on drying max. 0.1 %

Al	 max. 0.00005 %	Cu	 max. 0.00005 %
Ca	 max. 0.00005 %	Fe	 max. 0.00005 %
Cd	 max. 0.00005 %	Ni	 max. 0.00005 %
Co	 max. 0.00005 %	Pb	 max. 0.00005 %
Cr	 max. 0.00005 %	Zn	 max. 0.00005 %

Order-No.	Quantity
A4322,1000	1 L
A4322,10006	6 x 1 L
A4322,2500	2.5 L
A4322,25004	4 x 2.5 L

Diisopropyl ether pure

C

stabilized with 10 ppm BHT

Specification:

Assay (HPLC)	min. 98.5 %
Heavy metals (as Pb)	max. 0.0005 %
Residue after evaporation	max. 0.005 %
Loss on drying	max. 0.1 %
Peroxide (as H ₂ O ₂)	max. 0.005 %
Cu	max. 0.0005 %
Fe	max. 0.0005 %
Zn	max. 0.0005 %

Order-No.	Quantity
A4951,1000	1 L
A4951,2500	2.5 L
A4951,25004	4 x 2,5 L
A4951,5000	5 L
A4951,9010	10 L
A4951,9025BK	25 L
A4951,9025PE	25 L

Diisopropyl ether Technical grade

C

stabilized with 10 ppm BHT

Specification:

Assay (HPLC)	min. 98 %
Water (K.F.)	max. 0.2 %

Order-No.	Quantity
A4906,1000	1 L
A4906,10006	6 x 1 L
A4906,2500	2.5 L
A4906,5000	5 L
A4906,9010	10 L
A4906,9025BK	25 L
A4906,9025PE	25 L

Dimercaprol in EtOH see 2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol Page 282

2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol

C

Dithioglycerol in EtOH, Dimercaprol in EtOH, BAL in EtOH

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3/II
UN1993
WGK: 3
Danger
H319-H225-H315
P302+P352-P305+P351+P338-P210**Composition:**

2,3-Dimercapto-1-propanol 200 ml/L Ethanol

Order-No.	Quantity
A3195,0001	1 ml
A3195,0010	10 ml
A3195,0050	50 ml

3,3'-(3,3'-Dimethoxy[1,1'-biphenyl]-4,4'-diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride see Tetrazolium blue chloride Page 809

1,2-Dimethoxyethane for synthesis

C

C₄H₁₀O₂
M = 90.12 g/mol
CAS-No.: 110-71-4
HS-No.: 29091990
EC-No.: 203-794-9Storage: RT
LGK: 3 AClass / PG: 3/II
UN2252
WGK: 1
Danger
EUH019-H360FD-H332-H225
P308+P313-P201-P210**Specification:**

Assay (HPLC)	min. 99 %
Appearance	clear, colorless
Density (d 20°C/4°C)	0.867 ± 0.003
n _D 20°C/D	1.380 ± 0.005
Loss on drying	max. 0.2 %

Peroxides max. 0.005 %

Order-No.	Quantity
A4687,1000	1 L
A4687,10006	6 x 1 L
A4687,2500	2.5 L
A4687,25004	4 x 2,5 L

1,2-Dimethoxy-N-methyl(1,3)benzodioxolo(5,6-c)phenanthridium chloride see Chelerythrine chloride BioChemica Page 196

N,N-Dimethylacetamide pure

C

Acetic acid dimethylamide

C₄H₉NO
M = 87.12 g/mol
CAS-No.: 127-19-5
HS-No.: 29241900
EC-No.: 204-826-4Storage: RT
LGK: 6.1 A
Disposal: 1WGK: 1
hygroscopic
Danger
H332-H360D-H312
P308+P313-P201-P302+P352

Boiling point	165°C
Density (d 20°C/4°C)	0.94
Melting point	-20°C
Solubility	water-soluble

Specification:

Assay (HPLC)	min. 99 %
Water (K.F.)	max. 0.3 %

Order-No.	Quantity
A2488,0500	500 ml
A2488,1000	1 L
A2488,10006	6 x 1 L
A2488,2500	2.5 L
A2488,25004	4 x 2,5 L

4-(Dimethylamino)-aniline dihydrochloride see N,N-Dimethyl-p-phenylenediamine dihydrochloride BioChemica Page 286
p-Dimethylaminoazobenzene see Dimethyl yellow (C.I. 11020) Page 288

4-(Dimethylamino)-azobenzene-2'-carboxylic acid see Methyl red (C.I. 13020) Page 542
4-(Dimethylamino)-azobenzene-2'-carboxylic acid sodium salt see Methyl red sodium salt Page 542

4-Dimethylaminobenzaldehyde **Reag. Ph. Eur.**



C

Ehrlich's reagent, *p*-
Formyldimethylaniline

$C_9H_{11}NO$
 $M = 149.19$ g/mol
CAS-No.: 100-10-7
HS-No.: 29223900
EC-No.: 202-819-0

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Boiling point 176 - 177°C (23
hPa)

Melting range 72 - 75°C

Solubility water-soluble

Order-No.	Quantity
A8119,0025	25 g
A8119,0100	100 g

Comment: Reagent for the detection of urobilinogen and other nitrogenous compounds.

2-Dimethylaminoethanol **BioChemica**

B

N,N-Dimethyl-2-hydroxyethylamine,
Deanol, *N,N*-Dimethylethanolamine

$C_4H_{11}NO$
 $M = 89.14$ g/mol
CAS-No.: 108-01-0
HS-No.: 29221985
EC-No.: 203-542-8

Storage: RT

Class / PG: 8(3)/II
UN2051
WGK: 1
Danger
H302-H314-H226-H332-H312
P305+P351+P338-P301+P330+P331-
P262-P280-P302+P352-P210



Specification:

Assay (HPLC) min. 99 %
Heavy metals max. 0.001 %
Identity complies

Water (K.F.) max. 0.1 %

Order-No.	Quantity
A5337,0100	100 ml
A5337,0250	250 ml

17-Dimethylaminoethylamino-17-demethoxy-geldanamycin **BioChemica**

B

17-DMAG
semisynthetic derivative of Geldanamycin

$C_{32}H_{48}N_4O_8$
 $M = 616.75$ g/mol
HS-No.: 29419000

Storage: -20°C
protected from light

Solubility (25 mg/ml in DMSO)
..... clear, purple

Specification:

Assay (TLC) approx. 98 %

Order-No.	Quantity
A7844,0001	1 mg
A7844,0005	5 mg

Comment: 17-Dimethylaminoethylamino-17-demethoxy-geldanamycin (17DMAG) is a semisynthetic derivative of Geldanamycin (GA) and therefore belongs to the family of ansamycin antibiotics. It binds to the heat shock protein Hsp90 and alters its function. 17DMAG is less hepatotoxic than GA and cytotoxic for many cancer cell lines. 17DMAG is soluble in methanol and DMSO.

5-Dimethylaminonaphthalene-1-sulfonyl chloride see Dansyl chloride *BioChemica* Page 259
5-(Dimethylamino)-1-naphthalenesulfonyl fluoride see Dansyl fluoride *BioChemica* Page 259
2-[1-(3-Dimethylaminopropyl)-indole-3-yl-3-(indole-3-yl)]-maleimide see Bisindolylmaleimide *BioChemica* Page 146
Dimethylarsinic acid see Cacodylic acid *BioChemica* Page 175
Dimethylarsinic acid sodium salt see Cacodylic acid sodium salt trihydrate *BioChemica* Page 175
Dimethylbenzene see Xylene - Mixture of isomers Page 871

Dimethyldichlorosilane **BioChemica**

B

Dichlorodimethylsilane, DMDCS

$C_2H_6Cl_2Si$
 $M = 129.06$ g/mol
CAS-No.: 75-78-5
HS-No.: 29310099
EC-No.: 200-901-0

Storage: 2-8°C
LGK: 3 A
Disposal: 24

Class / PG: 3(8)/II
UN1162
WGK: 1
Danger
H335-H319-H225-H315
P302+P352-P305+P351+P338-P210



Boiling point 70°C
Melting point -76°C
n 20°C/D 1.4038

Specification:

Assay (HPLC) min. 99 %

Order-No.	Quantity
A1655,0050	50 ml
A1655,0100	100 ml

Comment: For the silylation of glass columns and glass surfaces; also available as a 5 % solution.
Introduction of the dimethylsilyl groups into chemicals (e.g. reactions with alcohols, diols and dithiols)

Dimethyldichlorosilane - Solution 5 % BioChemica

B

Ready-to-use Silanizing - Solution

HS-No.: 29310099

Storage: 2-8°C

LGK: 3 A

Disposal: 24

Class / PG: 3/II

UN1993

WGK: 1

Danger

H225-H304-H373-H411-H361-H315

P240-P403+P235-P331-P302+P352-

P273-P210-P301+P310

**Composition:**

Dimethyldichlorosilane 50 ml/L

Order-No.**A0818,0100****A0818,0250****A0818,0500****Quantity**

100 ml

250 ml

500 ml

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Page E.1-E.2. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: For the handling of very small quantities of single-stranded DNA or for sequencing techniques, it is advisable to use glassware or plasticware that has been coated with a thin film of silane. Silanizing prevents the attachment of nucleic acids and proteins to the glassware and plasticware. As the organic solvent evaporates, the dimethyldichlorosilane is deposited on the glassware, which should be rinsed with water or ethanol before use.

Caution: The fumes of this solution are toxic and highly flammable. Handle this substance under a chemical hood and avoid contact with skin. Therefore, AppliChem offers a non-toxic alternative: **GelSave** (Order-No. **A2574**).

N,N-Dimethylethanolamine see 2-Dimethylaminoethanol BioChemica Page 283

N,N-Dimethylformamide

Formic acid dimethylamide, DMF

C₃H₇NO

M = 73.10 g/mol

CAS-No.: 68-12-2

HS-No.: 29241900

EC-No.: 200-679-5

Storage: RT

LGK: 6.1 A

Disposal: 1

Class / PG: 3/III

UN2265

WGK: 1

Danger

H360D-H319-H312-H332

P201-P305+P351+P338-P302+P352-

P308+P313



Boiling point 153°C

Density (d 20°C/4°C) . . 0.944

Melting point -60°C

n 20°C/D 1.4305

N,N-Dimethylformamide Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.002 %
Total P max. 0.00005 %
Total S max. 0.0001 %

Total Si max. 0.00005 %
Water (K.F.) max. 0.05 %
Ca max. 0.00001 %
Cu max. 0.00005 %
Fe max. 0.00001 %
K max. 0.00005 %

Mg max. 0.00005 %
Na max. 0.0002 %
Pb max. 0.00005 %
Zn max. 0.00005 %

Order-No.**A3676,0500****A3676,1000****A3676,2500****Quantity**

500 ml

1 L

2.5 L

N,N-Dimethylformamide HPLC grade

C

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.05 %

A (1 cm/water HPLC grade)
275 nm max. 0.2
280 nm max. 0.1
290 nm max. 0.05
300 nm max. 0.01
320 nm max. 0.005

Order-No.**A1581,1000****A1581,10006****A1581,2500****A1581,25004****Quantity**

1 L

6 x 1 L

2.5 L

4 x 2,5 L

N,N-Dimethylformamide GPC grade

C

To be used in gel permeation
chromatography, filtered through 0.2 µm
filter.

Specification:

Assay (HPLC) min. 99.8 %
Color max. 10 APHA
Non-volatile matter max. 0.001 %
Water (K.F.) max. 0.05 %

Order-No.**A2339,0500****A2339,1000****A2339,2500****Quantity**

500 ml

1 L

2.5 L

N,N-Dimethylformamide BioChemica

B

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Heavy metals (as Pb) max. 0.0005 %
Non-volatile matter max. 0.002 %

Water (K.F.) max. 0.1 %

Order-No.**A3725,0500****A3725,1000****A3725,2500****Quantity**

500 ml

1 L

2.5 L

N,N-Dimethylformamide dried, p. A.

C

Specification:

Assay (HPLC) min. 99.8 %
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %

Order-No.**A2359,0500****A2359,1000****A2359,10006****Quantity**

500 ml

1 L

6 x 1 L

◆ This product contains molecular sieve as a drying agent!

N,N-Dimethylformamide p. A.

Specification:

Assay (HPLC)	min. 99.5 %
Acidity/Alkalinity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0002 %
Total P	max. 0.00005 %
Total S	max. 0.0001 %
Total Si	max. 0.000005 %
Water (K.F.)	max. 0.05 %

Ca	max. 0.00001 %	Zn	max. 0.00005 %
Cu	max. 0.00005 %		
Fe	max. 0.00001 %		
K	max. 0.00005 %		
Mg	max. 0.000005 %		
Na	max. 0.00002 %		
Pb	max. 0.00005 %		

Order-No.	Quantity
A1760,0500	500 ml
A1760,1000	1 L
A1760,10006	6 x 1 L
A1760,2500	2.5 L
A1760,25004	4 x 2.5 L
A1760,5000	5 L

C

N,N-Dimethylformamide pure

Specification:

Assay (HPLC)	min. 99 %
Free acid	max. 0.005 %
Non-volatile matter	max. 0.005 %
Water (K.F.)	max. 0.2 %

Order-No.	Quantity
A3566,0500	500 ml
A3566,1000	1 L
A3566,10006	6 x 1 L
A3566,2500	2.5 L
A3566,25004	4 x 2.5 L
A3566,5000	5 L
A3566,9010	10 L

C

N,N-Dimethylformamide for synthesis

Specification:

Assay (HPLC)	min. 98 %
Free acid	max. 0.05 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A4251,1000	1 L
A4251,10006	6 x 1 L
A4251,2500	2.5 L
A4251,25004	4 x 2.5 L
A4251,5000	5 L
A4251,9010	10 L
A4251,9025	25 L

C

N,N-Dimethylformamide D₇

DMF, Formic acid dimethylamide

C₃D₇NO
M = 80.14 g/mol
CAS-No.: 4472-41-7
HS-No.: 28459010
EC-No.: 224-745-8

Storage: RT
LGK: 6.1 A
Disposal: 1

Class / PG: 3/III
UN2265
WGK: 1
Danger
H332-H319-H312-H360D
P302+P352-P201-P308+P313-
P305+P351+P338



Boiling point 153°C
Density (d 20°C/4°C) .. 1.03
Melting point -60°C

Specification:

Deuteration degree min. 99.5 %

Order-No.	Quantity
DS-9,00005	0.5 ml
DS-9,0001	1 ml

N,N-Dimethyl-2-hydroxyethylamine see 2-Dimethylaminoethanol *BioChemica* Page 283

N-(1,1-Dimethyl-2-hydroxyethyl)-3-amino-2-hydroxypropanesulfonic acid see AMPSO Buffer grade Page 108

Dimethyl ketone see Acetone Page 44

Dimethylmethylene blue chloride see Dimethylmethylene blue hydrochloride *BioChemica* Page 285

Dimethylmethylene blue hydrochloride *BioChemica*

B

3,7-Bis-(dimethylamino)-1,9-dimethyl-
diphenothiazin-5-ium hydrochloride,
Dimethylmethylene blue chloride

C₁₈H₂₂N₃S · HCl
M = 347.91 g/mol
CAS-No.: 23481-50-7
HS-No.: 32041300

Storage: 2-8°C
LGK: 10 - 13
Disposal: 4

Warning
H302-H332
P302+P352



Specification:

Assay (TLC) min. 95 %

Order-No.	Quantity
A1279,0250	250 mg
A1279,0001	1 g

Literature: (1) Klompmakers, A. & Hendriks, T. (1986) *Anal. Biochem.* **153**, 80-84

(2) Groves, P.J. *et al.* (1997) *Anal. Biochem.* **245**, 247-248

A spectrophotometric microassay for sulfated glycosaminoglycans using laser densitometer.

Polyvinyl alcohol-stabilizes the binding of sulfated GAGs to Dimethylmethylene blue.

Comment:For the determination of sulfated glycosaminoglycans (GAG) with dimethylmethylene blue chloride (DMB), the decrease in absorption at 633 nm is measured. The detection limit is 0.1 µg sulfated GAGs. The staining solution contains 8 mg DMB in 2.5 ml ethanol, 1 g sodium formate and 1 ml formic acid at 500 ml with water (A₆₃₃ -0.32; ref. 1). Since it is possible to work with very low concentrations of GAG, even after long incubation times, no precipitate is observed, which may happen with other methods (1).

2,9-Dimethyl-1,10-phenanthroline hydrochloride see Neocuproine hydrochloride monohydrate *BioChemica* Page 563

2',2''-Dimethylphenolsulfonphthalein see m-Cresol purple Page 246

N,N-Dimethyl-p-phenylenediamine dihydrochloride *BioChemica*

B

4-(Dimethylamino)-aniline
dihydrochloride, DMPD · 2HCl, N,N-Dimethyl-1,4-phenylenediammoniumdichloride, 4-amino-N,N-dimethylaniline dihydrochloride

C₈H₁₂N₂ · 2HCl
M = 209.12 g/mol
CAS-No.: 536-46-9
HS-No.: 29215190
EC-No.: 208-635-7

Storage: RT
protected from light
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/II
UN2811
WGK: 3
Danger
H331-H301-H311
P280-P304+P340-P302+P352



Melting point 222°C (dec.)

Specification:

Assay (titr.) min. 99 %

Order-No.	Quantity
A4873,0010	10 g
A4873,0025	25 g
A4873,0100	100 g

N,N-Dimethyl-1,4-phenylenediammoniumdichloride see N,N-Dimethyl-p-phenylenediamine dihydrochloride *BioChemica* Page 286

Dimethyl sulfoxide

Methylsulfoxide, DMSO

C₂H₆OS
M = 78.13 g/mol
CAS-No.: 67-68-5
HS-No.: 29309099
EC-No.: 200-664-3

Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1

Boiling point 189°C
Density (d 20°C/4°C) .. 1.100 - 1.104
Melting point 18°C
n 20°C/D 1.478 - 1.479

Dimethyl sulfoxide Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (HPLC) min. 99.5 %
Free acid max. 0.001 %
Non-volatile matter max. 0.001 %
Total P max. 0.00001 %

Total Si max. 0.00002 %
Water (K.F.) max. 0.1 %
Ca max. 0.0001 %
Cu max. 0.00005 %
Fe max. 0.0001 %

K max. 0.00005 %
Mg max. 0.00005 %
Na max. 0.0002 %
Pb max. 0.00002 %
Zn max. 0.00002 %

Order-No.	Quantity
A3006,0100	100 ml
A3006,0500	500 ml
A3006,1000	1 L

Dimethyl sulfoxide HPLC grade

C

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.05 %

A (1 cm/water HPLC grade)
280 nm max. 0.2
300 nm max. 0.1
320 nm max. 0.05
330 nm max. 0.025
360 nm max. 0.01

Order-No.	Quantity
A2355,1000	1 L
A2355,10006	6 x 1 L
A2355,2500	2.5 L
A2355,25004	4 x 2,5 L

Dimethyl sulfoxide GPC grade

C

To be used in gel permeation chromatography, filtered through 0.2 µm filter.

Specification:

Assay (HPLC) min. 99.8 %
Color max. 10 APHA
Non-volatile matter max. 0.001 %
Water (K.F.) max. 0.05 %

Order-No.	Quantity
A2348,1000	1 L
A2348,2500	2.5 L
A2348,25004	4 x 2,5 L

Dimethyl sulfoxide Cell culture grade

B

Specification:

Pyrogen test complies
Assay (HPLC) min. 99.5 %
Free acid max. 0.001 %
Non-volatile matter max. 0.001 %
Total P max. 0.00001 %

Total Si max. 0.00002 %
Water (K.F.) max. 0.1 %
Ca max. 0.0001 %
Cu max. 0.00005 %
Fe max. 0.0001 %

K max. 0.00005 %
Mg max. 0.00005 %
Na max. 0.0002 %
Pb max. 0.00002 %
Zn max. 0.00002 %

Order-No.	Quantity
A3672,0050	50 ml
A3672,0100	100 ml
A3672,0250	250 ml

Dimethyl sulfoxide, sterile filtered (ampules)

B

hygroscopic

Specification:

Assay (HPLC) min. 99.9 %
Appearance clear, colorless
Endotoxins max. 40 E.U./g
Water (K.F.) max. 0.5 %

A (1 cm/water HPLC grade)
275 nm max. 0.30

Order-No.	Quantity
A7248,0005	5 x 5ml
A7248,0010	5 x 10ml

Dimethyl sulfoxide *BioChemica*

B

Specification:

Assay (HPLC)	min. 99.5 %	A (1 cm/water HPLC grade)	280 nm	max. 0.25
Free acid	max. 0.001 %			
Heavy metals (as Pb)	max. 0.001 %			
Insoluble matter	complies			
Non-volatile matter	max. 0.001 %			
Water (K.F.)	max. 0.1 %			

Order-No.	Quantity
A1584,0100	100 ml
A1584,0500	500 ml
A1584,1000	1 L
A1584,2500	2.5 L
A1584,5000	5 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; pages 1.79-1.81, 2.68; Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(2) Seto, D. (1990) *Nucleic Acids Res.* **18**, 5905-5906

(3) Sidhu, M.K. *et al.* (1996) *BioTechniques* **21**, 44-47

(4) Kelly, R.B. & Sinsheimer, R.L. (1967) *J. Mol. Biol.* **29**, 229-236

(5) Spencer, R.L. & Wold, F. (1969) *Anal. Biochem.* **32**, 185-190

An improved method for sequencing double stranded plasmid DNA from minipreps using DMSO and modified template preparation.

Dimethylsulfoxide increases the RNA amplification.

Examination of the replication of bacteriophage MS2.

Simple method for the estimation of the cysteine / cystine content in proteins.

Comment: The bacteriophage MS2 is a 'single-stranded' RNA bacteriophage. The infection requires ssRNA. For the examination of the double-stranded replication intermediate (RI), cells are infected with RI, dissolved in DMSO (4). Cysteine and cystine residue in proteins are analysed by the conversion of the corresponding amino acids to cysteic acid with 0.2 - 0.35 M DMSO and a total hydrolysis of the protein (5).

Dimethyl sulfoxide (DMSO) is used for the preparation of fresh competent bacteria and for the long-term storage of bacteriophage I (final concentration 7 %). Oxidation products of DMSO will inhibit the transformation, therefore it is recommended to aliquot fresh DMSO and store the aliquots at -20°C (1). The addition of DMSO to the annealing reaction of the sequencing reaction and the addition of 10 % DMSO (final concentration) to the labeling reaction and termination, improves the quality of the sequencing of mini-prep DNA (2). Besides, the amplification of RNA by RT-PCR is improved by the addition of DMSO to the reverse transcriptase (RT) reaction and the PCR. The DMSO concentration depends on the RNA species (3).

Freezing and storage of eukaryotic cells: DMSO may be used instead of glycerol for the freezing of eukaryotic cells. It prevents the formation of ice crystals and prevents damage of the cells. DMSO is used at a concentration of 10 %. It is highly toxic for the cells! Therefore, the 'freezing medium' should be cooled on ice. The freezing medium is either the 'normal' culture medium with the addition of 10 % DMSO or 90 % serum plus 10 % DMSO, which increases the viability. Most of the cell types are not directly transferred to the liquid nitrogen. They have to be cooled down slowly (refrigerator, -70°C freezer well packed, liquid nitrogen). Thawing of cells has to be done as quick as possible. It is recommended to wash the cells once with medium before plating or change the medium the day after thawing.

Dimethyl sulfoxide dried p.A.

C

Specification:

Assay (HPLC)	min. 99.5 %	Water (K.F.)	max. 0.01 %
Free acid	max. 0.002 %		
Heavy metals (as Pb)	max. 0.0005 %		
Non-volatile matter	max. 0.005 %		

Order-No.	Quantity
A7456,0500	500 ml
A7456,1000	1 L
A7456,10006	6 x 1 L

◆ This product contains molecular sieve as a drying agent!

Dimethyl sulfoxide p. A.

C

Specification:

Assay (HPLC)	min. 99.5 %	Mg	max. 0.00005 %
Free acid	max. 0.001 %	Na	max. 0.0002 %
Non-volatile matter	max. 0.001 %	Pb	max. 0.00002 %
Total P	max. 0.00001 %	Zn	max. 0.00002 %
Total Si	max. 0.00002 %		
Water (K.F.)	max. 0.1 %		
Ca	max. 0.0001 %		
Cu	max. 0.00005 %		
Fe	max. 0.0001 %		
K	max. 0.00005 %		

Order-No.	Quantity
A3608,0100	100 ml
A3608,0500	500 ml
A3608,1000	1 L
A3608,10006	6 x 1 L
A3608,2500	2.5 L
A3608,25004	4 x 2.5 L
A3608,5000	5 L
A3608,9010	10 L

Dimethyl sulfoxide pure Ph. Eur.

C

Specification:

Absorption (270 - 350 nm)	complies	A (1 cm/water HPLC grade)	275 nm	max. 0.30
Acidic reacting subst.	complies		285 nm	max. 0.20
Appearance	clear, colorless		295 nm	max. 0.20
Congeaing temperature	min. 18.3°C			
Identity	complies			
Refractive index	1.478-1.479			
Related subst.	max. 0.1 %			
Relative density	1.100-1.104			
Water (K.F.)	max. 0.2 %			

Order-No.	Quantity
A3009,0250	250 ml
A3009,0500	500 ml
A3009,1000	1 L
A3009,10006	6 x 1 L
A3009,2500	2.5 L
A3009,25004	4 x 2.5 L
A3009,5000	5 L
A3009,9010	10 L

Dimethyl sulfoxide for synthesis

C

Specification:

Assay (HPLC)	min. 98 %
Non-volatile matter	max. 0.05 %
Water (K.F.)	max. 0.2 %

Order-No.	Quantity
A2765,1000	1 L
A2765,10006	6 x 1 L
A2765,2500	2.5 L
A2765,25004	4 x 2.5 L
A2765,5000	5 L
A2765,9010	10 L
A2765,9025	25 L

Dimethyl sulfoxide D₆

Boiling point 190°C
 Density (d 20°C/4°C) .. 1.19
 Melting point 20.2°C

C₂D₆OS
M = 84.17 g/mol
 CAS-No.: 2206-27-1
 HS-No.: 28459010
 EC-No.: 218-617-0

Storage: RT
 LGK: 10 - 13
 Disposal: 1

WGK: 1

Dimethyl sulfoxide D₆ Grade I

C

Specification:
 Deuteration degree min. 99.8 %

Order-No.	Quantity
DS-11,0005	5 ml
DS-11,0025	25 ml
DS-11,0100	100 ml

Dimethyl sulfoxide D₆ Grade II

C

Specification:
 Deuteration degree min. 99 %

Order-No.	Quantity
DS-10,0005	5 ml
DS-10,0025	25 ml

3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide see Thiazolyl blue tetrazolium bromide *BioChemica* Page 811

Dimethyl yellow (C.I. 11020)

C

p-Dimethylaminoazobenzene, Methyl yellow

C₁₄H₁₅N₃
M = 225.30 g/mol
 CAS-No.: 60-11-7
 HS-No.: 29270000
 EC-No.: 200-455-7

Storage: RT
 LGK: 6.1 A
 Disposal: 3

Class / PG: 6.1/III
 UN2811
 WGK: 3
 Danger
 H351-H301
 P308+P313-P281



Transition interval pH 3.0 - 4.0 (rose - brown/yellow)

Specification:
 λ_{max} (pH 3.0) 508 - 511 nm
 λ_{max} (pH 4.0) 455 - 460 nm
 Identity (UV/VIS) complies
 Loss on drying max. 5 %

Order-No.	Quantity
A3290,0005	5 g
A3290,0010	10 g
A3290,0025	25 g

Dimethyl yellow - Solution

C

ready-to-use indicator solution in 20 % methanol

HS-No.: 38220000

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3(6.1/II)
 UN1992
 WGK: 1
 Danger
 H311-H331-H370-H301-H225
 P302+P352-P210-P280



Composition:
 Dimethyl yellow (A3290) ... 0.1 %

Order-No.	Quantity
A4138,0100	100 ml
A4138,0500	500 ml
A4138,1000	1 L

Dimidium bromide *BioChemica*

B

3,8-Diamino-5-methyl-6-phenylphenanthridinium bromide, Trypadine

C₂₀H₁₈BrN₃
M = 380.30 g/mol
 CAS-No.: 518-67-2
 HS-No.: 29339980
 EC-No.: 208-256-7

Storage: RT
 LGK: 10-13
 Disposal: 3

Class / PG: 6.1/II
 UN2811
 WGK: 3
 Warning
 H319-H335-H315
 P260-P305+P351+P338-P304+P340-P302+P352



Melting point 243 - 248°C

Specification:
 Assay (titr.) min. 95 %
 λ_{max} (MeOH) 523 - 528 nm
 Loss on drying max. 5.0 %
 UV/VIS spectrum complies

Order-No.	Quantity
A6361,0100	100 mg
A6361,0250	250 mg
A6361,0001	1 g

2,2'-Dinitro-5,5'-dithiodibenzoic acid see 5,5'-Dithio-bis(2-nitrobenzoic acid) *BioChemica* Page 291

1,4-Dioxane

Glycol ethylether, Diethylene oxide

Boiling point 101°C
Density (d 20°C/4°C) .. 1.03
Melting point 11°C
n 20°C/D 1.4224

C₄H₈O₂
M = 88.11 g/mol
CAS-No.: 123-91-1
HS-No.: 29329900
EC-No.: 204-661-8

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1165
WGK: 2
Danger
EUH019-EUH066-H225-H335-H319-
H351
P281-P210-P308+P313-
P305+P351+P338



1,4-Dioxane HPLC grade

C

non-stabilized

Specification:

Assay (HPLC) min. 99.5 %
Acidity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.025 %

A (1 cm/water HPLC grade)
250 nm max. 0.2
270 nm max. 0.07
280 nm max. 0.05
290 nm max. 0.02

Order-No.	Quantity
A1586,1000	1 L
A1586,10006	6 x 1 L
A1586,2500	2.5 L
A1586,25004	4 x 2,5 L

1,4-Dioxane dried, p. A.

C

stabilized with 25 ppm BHT

Specification:

Assay (HPLC) min. 99.8 %
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %

Order-No.	Quantity
A2347,0500	500 ml
A2347,1000	1 L
A2347,10006	6 x 1 L
A2347,2500	2.5 L

◆ This product contains molecular sieve as a drying agent!

1,4-Dioxane p. A.

C

stabilized with 25 ppm BHT

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.002 meq/g
Non-volatile matter max. 0.002 %
Total P max. 0.00001 %
Total S max. 0.00002 %
Total Si max. 0.000005 %
Water (K.F.) max. 0.05 %
Ca max. 0.00005 %
Cu max. 0.000002 %
Fe max. 0.00002 %
K max. 0.00001 %
Mg max. 0.000005 %

Na max. 0.00005 %
Pb max. 0.000005 %
Zn max. 0.00002 %

Order-No.	Quantity
A0789,0250	250 ml
A0789,0500	500 ml
A0789,1000	1 L
A0789,10006	6 x 1 L
A0789,2500	2.5 L
A0789,25004	4 x 2,5 L
A0789,5000	5 L
A0789,9010	10 L
A0789,9025BK	25 L
A0789,9025PE	25 L

1,4-Dioxane pure

C

stabilized with 25 ppm BHT

Specification:

Assay (HPLC) min. 99 %
Peroxides max. 0.005 %
Water (K.F.) max. 0.1 %
As max. 0.0005 %
Ca max. 0.02 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A0790,1000	1 L
A0790,10006	6 x 1 L
A0790,2500	2.5 L
A0790,25004	4 x 2,5 L
A0790,5000	5 L
A0790,9010	10 L
A0790,9025BK	25 L
A0790,9025PE	25 L

1,4-Dioxane D₈

C

Boiling point 101°C
Density (d 20°C/4°C) .. 1.13
Melting point 11°C

C₄D₈O₂
M = 96.16 g/mol
CAS-No.: 17647-74-4
HS-No.: 28459010
EC-No.: 241-628-7

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1165
WGK: 2
Danger
EUH019-EUH066-H335-H351-H225-
H319
P305+P351+P338-P308+P313-P281-
P210



Specification:

Deuteration degree min. 99 %

Order-No.	Quantity
DS-12,0001	1 ml
DS-12,0005	5 ml

3,6-Dioxaoctamethylene dimaleimide see BM(PEO)₃ Page 152
5,6-Dioxuracil see Alloxan monohydrate Page 81
Dipotassium hydrogen phosphate see di-Potassium hydrogen phosphate trihydrate p. A. Page 646
Dipotassium phosphate see di-Potassium hydrogen phosphate anhydrous Page 646
n-Dipropylmethane see n-Heptane Page 403

DIPSO Buffer grade

B

N,N-Bis-(2-hydroxyethyl)-3-amino-2-hydroxypropanesulfonic acid

$C_7H_{17}NO_6S$
 $M = 243.28$ g/mol
 CAS-No.: 68399-80-4
 HS-No.: 29221985
 EC-No.: 269-992-2

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Melting point 190°C (dec.)
 Useful pH range pH 7.0 - 8.2
 pK_a (20°C) 7.6

Specification:

Assay (titr.) min. 99 %
 Loss on drying max. 1 %
 Fe max. 0.0005 %
 Pb max. 0.0001 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.04
 280 nm max. 0.03

Order-No.	Quantity
A1066,0025	25 g
A1066,0100	100 g

Literature: (1) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310
 (2) Vasconcelos, M.T.S.D. *et al.* (1998) *Anal. Biochem.* **265**, 193-201

Hydrogen ion buffers for biological research.
 Copper(II) complexation of DIPSO and HEPPSO

Comment: DIPSO interferes with the Lowry protein assay and strongly complexes copper(II) ions.

Direct Blue 14 see Trypan blue (C.I. 23850) Page 842
 Direct Blue 53 see Evan's blue (C.I. 23860) Page 344
 Direct Red 28 see Congo red (C.I. 22120) Page 241
 Disodium glycerol-2-phosphate hydrate see β -Glycerol phosphate disodium salt hydrate *BioChemica* Page 386
 Disodium phosphate see *dl*-Sodium hydrogen phosphate dihydrate Page 735
 Distylin see (+)-Taxifolin HPLC grade Page 796
 Di(N-succinimidyl) 3,3'-dithiopropionate see DTSP *BioChemica* Page 309

Disuccinimidyl glutarate *BioChemica*

B

DSG $C_{13}H_{14}N_2O_8$ Storage: -20°C
 $M = 326.26$ g/mol
 Melting point 142 - 145°C
 CAS-No.: 79642-50-5
 HS-No.: 29251995

Specification:

Assay min. 99 %
 Identity (NMR) complies

Order-No.	Quantity
A7822,0100	100 mg
A7822,0500	500 mg
A7822,0001	1 g

Comment: DSG is an amine-reactive homobifunctional cross linker reagent with a five-carbon spacer.

Disuccinimidyl octanedioate see Disuccinimidyl suberate *BioChemica* Page 290

Disuccinimidyl suberate *BioChemica*

B

Suberic acid bis(*N*-hydroxysuccinimide ester), Disuccinimidyl octanedioate, DSS $C_{16}H_{20}N_2O_8$ Storage: -20°C
 $M = 368.33$ g/mol
 CAS-No.: 68528-80-3
 Melting point 160 - 163°C
 HS-No.: 29280090

Specification:

Assay min. 99 %
 Identity (NMR) complies

Order-No.	Quantity
A6621,0500	500 mg
A6621,0001	1 g

Disuccinimidyl tartrate *BioChemica*

B

DST $C_{12}H_{12}N_2O_{10}$ Storage: -20°C
 $M = 344.23$ g/mol
 Melting point 188 - 192°C
 CAS-No.: 62069-75-4
 HS-No.: 29280090

Specification:

Assay min. 94 %
 Identity (NMR) complies

Order-No.	Quantity
A7913,0100	100 mg
A7913,0250	250 mg

Comment: This homobifunctional amine-reactive cross-linker DST is cleavable by oxidizing reagents.

Disulfite see Sodium disulfite Page 732
 3,3'-Dithio-bis-(2-aminopropionic acid) hydrochloride see L-Cystine dihydrochloride pure Page 256

5,5'-Dithio-bis(2-nitrobenzoic acid) *BioChemica*

B

DTNB, 2,2'-Dinitro-5,5'-dithiodibenzoic acid, Ellman's reagent

$C_{14}H_8N_2O_8S_2$
 $M = 396.36 \text{ g/mol}$
 CAS-No.: 69-78-3
 HS-No.: 29309099
 EC-No.: 200-714-4

Storage: RT
 LGK: 10 - 13
 Disposal: 4

WGK: 1

Melting point 240 - 244°C

Specification:

Assay (titr.) min. 99 %
 E 1 %/1 cm (307 nm; 0.001 %; MeOH)
 330 - 370
 Heavy metals (as Pb) max. 0.001 %

Water (K.F.) max. 0.5 %
 Fe max. 0.001 %

Order-No.	Quantity
A3378,0001	1 g
A3378,0005	5 g
A3378,0025	25 g

Literature: (1) John, R.A. (1993) Photometric assays in **Enzyme Assays: A Practical Approach** p. 81 (Eisenthal, R. & Danson, M.F. eds.) Oxford University Press; Oxford, New York, Tokyo.

Comment: When an enzyme-catalyzed reaction creates a product with a reactive grouping not present in the substrate, it may be possible to include a reagent which will react directly with the product to form a chromophore. The chromogenic reactant should not interfere with the enzymic reaction.

5,5'-Dithiobis-2-nitrobenzoic acid (DTNB, Ellman's reagent) reacts with free thiols in an exchange reaction that produces the yellow 4-nitrothiolate anion. For the assay of acetylcholine esterase (E.C. 3.1.1.7), acetylthiocholine iodide (see product no. A3754) is used as a synthetic substrate, replacing the natural substrate acetylcholine. This enzyme hydrolyses the substrate to yield acetate and thiocholine. The free thiol group of thiocholine reacts with DTNB included in the assay mixture, producing the yellow 4-nitrothiolate. The release of this yellow anion is followed at 412 nm. The assay may be performed at 30°C in 0.1 M sodium phosphate buffer with 10 mM DTNB and 12.5 mM acetylthiocholine iodide (1).

Stability: Solutions of DTNB are not very stable. You may keep them refrigerated for 3-4 days. Freezing improves stability. It is recommended to prepare the solution fresh each time.

Dithiobis(succinimidyl propionate) see DTSP *BioChemica* Page 309

3,3'-Dithiobis(sulfosuccinimidyl propionate) disodium salt see DTSSP Page 310

Dithiocarbamic acid diethyl ester sodium salt see Sodium diethyldithiocarbamate trihydrate *BioChemica* Page 730

3,3'-Dithiodipropionic acid-di-(N-hydroxysuccinimide ester) see DTSP *BioChemica* Page 309

1,4-Dithioerythritol see DTE *BioChemica* Page 309

Dithioglycerol in EtOH see 2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol Page 282

1,4-Dithio-DL-threitol see DTT Page 310

rHu DKK-1



B

recombinant Human Dickkopf-Related Protein-1

$M = 35 - 40 \text{ kDa}$
 HS-No.: 29371900

Storage: -20°C

lyophilized without additives
 from *E. coli*

Specification:

Endotoxin (LAL test) max. 1.0 EU/μg
 Assay (RP-HPLC) min. 97 %
 Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8536,0002	2 μg
A8536,0010	10 μg

Comment: Avoid repeated freeze/thaw cycles.

17-DMAG see 17-Dimethylaminoethylamino-17-demethoxygeldanamycin *BioChemica* Page 283

DMDCS see Dimethyldichlorosilane *BioChemica* Page 283

DMEM (Dulbecco's mod. Eagle - Media)

HS-No.: 38210000

Storage: 2-8°C
 LGK: 10 - 13

hygroscopic
 P262

DMEM (Dulbecco's mod. Eagle - Medium)

B

with 1.0 g/L D(+)-Glucose
 without L-Glutamine
 with Sodium pyruvate
 without Sodium hydrogen carbonate

Order-No.	Quantity
A1924,1000	1 L
A1924,5000	5 L
A1924,9010	10 L
A1924,9050	50 L

DMEM (Dulbecco's mod. Eagle - Medium)

B

with 1.0 g/L D(+)-Glucose
 with L-Glutamine
 with Sodium pyruvate
 without Sodium hydrogen carbonate

Order-No.	Quantity
A1314,1000	1 L
A1314,5000	5 L
A1314,9010	10 L
A1314,9050	50 L

DMEM (Dulbecco's mod. Eagle - Medium)

B

with 1.0 g/L D(+)-Glucose
 without L-Glutamine
 with Sodium pyruvate
 without Phenol red
 without Sodium hydrogen carbonate

Order-No.	Quantity
A0826,1000	1 L
A0826,5000	5 L
A0826,9010	10 L
A0826,9050	50 L

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 1.0 g/L D(+)-Glucose			
with L-Glutamine			
with Sodium pyruvate	Order-No.	Quantity	
without Phenol red	A3134,1000	1 L	
without Sodium hydrogen carbonate	A3134,5000	5 L	
	A3134,9010	10 L	
	A3134,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 1.0 g/L D(+)-Glucose			
without L-Glutamine			
with 25 mM HEPES	Order-No.	Quantity	
with Sodium pyruvate	A1925,1000	1 L	
without Sodium hydrogen carbonate	A1925,5000	5 L	
	A1925,9010	10 L	
	A1925,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 1.0 g/L D(+)-Glucose			
with L-Glutamine			
with 25 mM HEPES	Order-No.	Quantity	
with Sodium pyruvate	A1315,1000	1 L	
without Sodium hydrogen carbonate	A1315,5000	5 L	
	A1315,9010	10 L	
	A1315,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
without L-Glutamine			
without Sodium pyruvate	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1926,1000	1 L	
	A1926,5000	5 L	
	A1926,9010	10 L	
	A1926,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
with L-Glutamine			
without Sodium pyruvate	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1316,1000	1 L	
	A1316,5000	5 L	
	A1316,9010	10 L	
	A1316,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
without L-Glutamine			
with Sodium pyruvate	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1985,1000	1 L	
	A1985,5000	5 L	
	A1985,9010	10 L	
	A1985,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
with L-Glutamine			
with Sodium pyruvate	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1986,1000	1 L	
	A1986,5000	5 L	
	A1986,9010	10 L	
	A1986,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
without L-Glutamine			
with Sodium pyruvate	Order-No.	Quantity	
without Phenol red	A3137,1000	1 L	
without Sodium hydrogen carbonate	A3137,5000	5 L	
	A3137,9010	10 L	
	A3137,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
with L-Glutamine			
with Sodium pyruvate	Order-No.	Quantity	
without Phenol red	A3139,1000	1 L	
without Sodium hydrogen carbonate	A3139,5000	5 L	
	A3139,9010	10 L	
	A3139,9050	50 L	

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
without L-Glutamine			
with 25 mM HEPES			
without Sodium pyruvate			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1950,1000	1 L		
A1950,5000	5 L		
A1950,9010	10 L		
A1950,9050	50 L		

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
with L-Glutamine			
with 25 mM HEPES			
without Sodium pyruvate			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1965,1000	1 L		
A1965,5000	5 L		
A1965,9010	10 L		
A1965,9050	50 L		

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
without L-Glutamine			
with 25 mM HEPES			
with Sodium pyruvate			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1979,1000	1 L		
A1979,5000	5 L		
A1979,9010	10 L		
A1979,9050	50 L		

DMEM (Dulbecco's mod. Eagle - Medium)			B
with 4.5 g/L D(+)-Glucose			
with L-Glutamine			
with 25 mM HEPES			
with Sodium pyruvate			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1951,1000	1 L		
A1951,5000	5 L		
A1951,9010	10 L		
A1951,9050	50 L		

DMEM/F12 (1:1) - Media

HS-No.: 38210000

Storage: 2-8°C

hygroscopic

LGK: 10 - 13

P262

DMEM/F12 (1:1) - Medium			B
without L-Glutamine			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1920,1000	1 L		
A1920,5000	5 L		
A1920,9010	20 L		
A1920,9050	50 L		

DMEM/F12 (1:1) - Medium			B
with L-Glutamine			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1318,1000	1 L		
A1318,5000	5 L		
A1318,9010	10 L		
A1318,9050	50 L		

DMEM/F12 (1:1) - Medium			B
without L-Glutamine			
with 15 mM HEPES			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1922,1000	1 L		
A1922,5000	5 L		
A1922,9010	10 L		
A1922,9050	50 L		

DMEM/F12 (1:1) - Medium			B
with L-Glutamine			
with 15 mM HEPES			
without Sodium hydrogen carbonate			
Order-No.	Quantity		
A1317,1000	1 L		
A1317,5000	5 L		
A1317,9010	10 L		
A1317,9050	50 L		

DMEM/F12 (1:1) - Medium

without L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1923,1000	1 L
A1923,5000	5 L
A1923,9010	10 L
A1923,9050	50 L

B

DMEM/F12 (1:1) - Medium

with L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1921,1000	1 L
A1921,5000	5 L
A1921,9010N	10 L
A1921,9050	50 L

B

DMF see N,N-Dimethylformamide Page 284

DMPD · 2HCl see N,N-Dimethyl-p-phenylenediamine dihydrochloride *BioChemica* Page 286

DMSO see Dimethyl sulfoxide Page 286

DNA Cot-I, human

B

Cot-1 DNA, human

HS-No.: 38220000

Storage: -20°C

- used to suppress crosshybridization to human repetitive elements in hybridization experiments
- human genomic DNA, predominantly consisting of rapidly annealing repetitive elements
- supplied in 10 mM Tris (pH 7.5), 1 mM EDTA

Specification:

Concentration	1 mg/ml	Average fragment size	50 - 300 bp	non-repetitive genomic DNA		Order-No.	Quantity
A ₂₆₀ /A ₂₈₀	approx. 1.78				approx. 2 %	A7639,0500	0.5 mg

Comment: Human DNA Cot-I is prepared exclusively from human placental DNA (male fetus only) by shearing, denaturing, and reannealing under conditions that enrich repetitive elements. Therefore Cot-I fraction of human genomic DNA predominately consists of rapidly annealing repetitive elements. COT I Human DNA can be used for suppressing crosshybridization to human repetitive DNA in filter and microarray hybridizations and in *in situ* hybridization experiments. Repetitive elements present in a probe may result in unspecific hybridization signals. To enable specific hybridization of the probe to the chromosomal target site the probe is denatured together with an excess of unlabeled Cot-I human DNA as a competitor. As a result single-copy gene hybridization is not hindered by repetitive sequences. The sample as well as the original material were tested for the absence of HIV1- and 2-RNA, HCV-RNA, HBV-DNA.

DNA Isolation Kits

Bacterial DNA InfectoPrep Adult

HS-No.: 38220000

Storage: RT
except for 2 components: -20°C
Shipment: wet ice

B

- Kit for the removal of human DNA from whole blood for the enrichment of bacterial cells
- Sample volume: 5 ml blood
- for examination of sepsis of adults from whole blood; identification of germs in other body fluids (incl. cerebrospinal fluid, synovial fluid)
- Use with commercial DNA purification kits for whole blood
- sufficient for 50 and 100 assays, respectively

Order-No.	Quantity
A7720,0050	50 Isol.
A7720,0100	100 Isol.

Comment: In comparison to the **Bacterial DNA InfectoPrep Pediatric** kit, the version **Bacterial DNA InfectoPrep Adult** allows the enrichment of bacteria from human blood of adults. Preparation of samples from other body fluids are possible, e.g. cerebrospinal fluid or synovial fluid. This kit is used in combination with commercial DNA purification kits from whole blood as well. The purified DNA may be used in PCR or qPCR assays.

Bacterial DNA InfectoPrep All Ages

B

HS-No.: 38220000

Storage: RT
except for 3 components: -20°C
Shipment: wet ice

- complete kit for the removal of human DNA and the enrichment of bacterial cells from human whole blood
- for examination of sepsis of newborn children and adults from whole blood and from other body fluids
- includes all reagents, buffer and mini spin column for bacterial DNA preparation
- Sample volume: 1 ml blood from children; 5 ml blood from adults
- sufficient for 50 and 100 assays, respectively

Order-No.	Quantity
A7736,0050	50 Isol.
A7736,0100	100 Isol.

Comment: The **Bacterial DNA InfectoPrep All Ages** kit is a complete kit starting with the removal of human DNA from whole blood of children and adults, the enrichment of bacteria to the DNA isolation from the bacteria, i.e. the DNA purification columns are supplied with the kit. Just like the **InfectoPrep Adult** kit, samples from other body fluids may be prepared as well (e.g. cerebrospinal fluid or synovial fluid). This kit does not require the combination with other commercial DNA isolation kits for whole blood.

Bacterial DNA InfectoPrep Blood Culture

B

HS-No.: 38220000

Storage: RT
except for 3 components: -20°C
Shipment: wet ice

- complete kit for the removal of PCR inhibitors and for the isolation of bacterial DNA from blood cultures
- for examination of blood culture-grown pathogens by PCR/qPCR analysis
- includes all reagents, buffer and mini spin column for bacterial DNA preparation
- Sample volume: 0.2 ml blood culture
- sufficient for 50 and 100 assays, respectively

Order-No.	Quantity
A7758,0050	50 Isol.
A7758,0100	100 Isol.

Comment: The **Bacterial DNA InfectoPrep Blood Culture** kit is used for the isolation of bacterial DNA from blood cultures. Bakterien. At the same time, strong inhibitors of the PCR reaction will be removed from the medium, resulting in an extremely pure bacterial DNA suited for PCR and qPCR reactions.

Bacterial DNA InfectoPrep Pediatric

B

HS-No.: 38220000

Storage: RT
except for 2 components: -20°C
Shipment: wet ice

- Kit for the removal of human DNA from pediatric blood samples for the enrichment of bacterial cells
- Sample volume: 0.2 ml blood
- for examination of sepsis of newborn children from whole blood; germs in clinical aspirates; periodontal and caries samples
- Use in combination with commercial DNA purification kits for whole blood
- sufficient for 50 and 100 assays, respectively

Order-No.	Quantity
A7710,0050	50 Isol.
A7710,0100	100 Isol.

Comment: High concentrations of human DNA in whole blood samples prevent a reliable diagnosis and analysis of bacterial DNA of pathogens. Therefore, it is necessary to remove human DNA and to enrich bacterial cells for the subsequent isolation of pure bacterial DNA. The **Bacterial DNA InfectoPrep Pediatric** kit removes human DNA from whole blood from children and is used in combination with commercial DNA isolation spin kits from whole blood.

Blood AC

B

HS-No.: 38220000

Storage: 2-8°C

- for use with the DNA Isolation Reagent for Genomic DNA (A3418).
- for the isolation of genomic DNA from fresh or frozen blood.

Order-No.	Quantity
A5228,0100	100 ml

Comment: This blood buffer solution 'Blood AC' is intended for the isolation of genomic DNA from frozen or fresh blood. The procedure includes a nuclear isolation step prior to DNA extraction. Two volumes of Blood AC are added to 1 volume of blood. A protocol will be supplied with the product.

RBC Lysis Solution

B

Red blood cell - Lysis solution, Lysis solution for red blood cells

HS-No.: 38220000

Storage: 2-8°C

- for selective lysis of red blood cells
- application in combination with 'Total RNA SI Isolation' Kits.
- for use with the DNA Isolation Reagent for Genomic DNA (A3418,0050)

Order-No.	Quantity
A4617,0100	100 ml

Comment: The Red Blood Cells (RBC) Lysis Solution is intended for use in isolation of Leukocytes from fresh whole blood. RBC Lysis Solution selectively lyses the erythrocytes leaving the leukocytes. The resulting white blood cells can be readily lysed and processed when isolating nucleic acid with the DNA Isolation Reagent for Genomic DNA (A3418,0050) or any other method for nucleic acid isolation from fresh whole blood.

DNA Blood Isolation Spin-Kit

B

HS-No.: 38220000

Storage: RT
except for Proteinase K - Solution:
+4°C

- Kit for the DNA isolation from blood cells with spin minicolumns
- Maximum sample volume 100 µl
- Application of the DNA in PCR, cloning and sequencing
- Binding capacity of the column 10 µg DNA
- sufficient for 50 and 250 assays, respectively
- Isolation of fragments in the range of 20 kb

Order-No.	Quantity
A5260,0050	50 Isol.
A5260,0250	250 Isol.

Comment: The DNA Blood Isolation Spin-Kit is based on the ability of DNA to adsorb to silica surfaces in the presence of high concentrations of chaotropic salts. Blood cells are lysed with the supplied lysis buffer, which contains chaotropic salts and a non-ionic detergent (TL buffer). Cell lysis is additionally supported by the high-activity protease Proteinase K. In the next step, the whole sample is loaded onto a minicolumn with a special silica resin. The DNA binds to the silica resin, while contaminants (fragmented proteins, salts, etc.) pass freely through the column. Residual contaminations are removed by a washing step. Pure DNA is eluted with a low salt buffer or water and can be used in the following experiments without additional purification procedures (e.g. precipitation).

DNA Enzyme-free Isolation Spin-Kit

B

HS-No.: 38220000

Storage: RT

- sufficient for 50 and 250 assays, respectively
- Advantage: 80 - 90 % DNA recovery
- Kit for the DNA isolation after enzymatic reactions with spin minicolumns
- Binding capacity of the column 10 µg DNA
- especially suited for the purification of PCR products.

Order-No.	Quantity
A5266,0050	50 Isol.
A5266,0250	250 Isol.

Comment: The DNA Enzyme-free Isolation Spin-Kit is based on the ability of DNA to adsorb to silica surfaces in the presence of high concentrations of chaotropic salts. Starting the DNA recovery after enzymatic reactions, the Binding Solution AC, which contains chaotropic salts, is added to reaction mixture. In the next step, the whole sample is loaded onto a minicolumn with a special silica resin. The DNA binds to the silica resin, while contaminants (enzymes, salts, etc.) pass through the column freely. Residual contaminations are removed by awashing step. Pure DNA is eluted with a low salt buffer or water and can be used in the subsequent experiments without further purification (e.g. precipitation). This Spin-Kit is suited for the purification of linearized plasmid DNA, too. Please note that the recovery yield of large fragments (8 - 9 kb) is approximately 60 - 65 %.

DNA Isolation Kit

B

HS-No.: 38220000

Storage: 2-8°C

- easy-to-use Kit for 150 - 300 isolations
- Extraction of DNA from agarose gels
- Isolation of plasmid DNA from mini-preps
- Concentration of DNA without ethanol precipitation

Order-No.	Quantity
A3421,0300	300 Isol.

Literature: (1) Vogelstein, B. & Gillespie, D. (1979) *Proc. Natl. Acad. Sci. USA* **76**, 615-619
(2) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page 1.32-34. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Comment: The DNA Isolation Kit consists of three components: a glass powder suspension (1.5 ml), a sodium iodide solution (120 ml 6 M NaI) and a concentrated wash solution (25 ml). The procedure involves the dissolving of the DNA-containing agarose in NaI and the binding of DNA to glass in the presence of the chaotropic salt NaI. The method is rapid and convenient, and DNA with a molecular weight above 300 bp can be recovered with high yield (> 300 bp) and without degradation. It is recommended to apply the kit with DNA fragments larger than 100 bp only.

Isolation of DNA fragments from agarose gels: The DNA band of interest is excised from the agarose gel and is molten in NaI solution. Glass powder suspension is added and incubated for 5 minutes. Centrifuge at maximum speed and wash the glass pellet three times in wash buffer. The DNA is eluted from the glass with water or TE buffer. A detailed application protocol is included.

Isolation of plasmid DNA from overnight cultures: Approximately 1.5 ml of an overnight transformant culture are treated according to the protocol of the alkaline lysis (solution I-III; ref. 2). The DNA-containing supernatant resulting from solution III is transferred to a new reaction tube and 3 volumes of 6 M NaI are added. Mix well. Add 10 µl of glass powder suspension and incubate at room temperature for 5 minutes. Proceed as for the isolation of DNA from agarose gels. A detailed application protocol is included.

DNA Isolation Spin-Kit Agarose

B

for 50 isolations

HS-No.: 38220000

Storage: RT

Kit for the DNA isolation from agarose gels with spin minicolumns

- performance of the electrophoresis in either TAE or TBE buffer
- Isolation of DNA fragments in the range of 100 to 6000 bp
- Binding capacity of the columns 10 µg
- Application of the DNA in cloning and sequencing

Order-No.
A5193,0050

Quantity
50 Isol.

Comment: The DNA Isolation Spin-Kit is based on the ability of DNA to adsorb to silica surfaces in the presence of high concentrations of chaotropic salts. The agarose gel slice containing the DNA of interest is dissolved in Agarose Melting Solution AC containing chaotropic salts. In the next step, the isopropanol is added and the whole sample is loaded onto a minicolumn with a suitable silica resin. The DNA binds to the silica resin, while impurities freely pass through the column. Residual impurities are washed off. Pure DNA is eluted with a low salt buffer or water. The DNA can be used in cloning or sequencing experiments without further purification.

DNA Isolation Spin-Kit Agarose Low Melt AX

B

for 50 isolations

HS-No.: 38220000

Storage: RT

Kit for the DNA isolation from **low melt** agarose gels with spin minicolumns

- performance of the electrophoresis in either TAE or TBE buffer
- Isolation of DNA fragments in the range of 100 to 6000 bp
- Binding capacity of the columns 10 µg
- Application of the DNA in cloning and sequencing

Order-No.
A7704,0050

Quantity
50 Isol.

DNA Swab Isolation Spin-Kit

B

HS-No.: 38220000

Storage: RT
except for Proteinase K - Solution:
+4°C

- Kit for the DNA isolation from swabs with spin minicolumns
- Binding capacity of the column 10 µg DNA
- Advantage: approx. preparation time 30 minutes
- sufficient for 25 and 100 isolations, respectively

Order-No.
A5253,0025
A5253,0100

Quantity
25 Isol.
100 Isol.

Comment: This kit is based on the property of DNA to adsorb to silica surfaces in the presence of high concentrations of chaotropic salts. The lysis of cells from swabs is performed in the lysis solution containing chaotropic salts and nonionic detergents. The lysis process is supported by auxiliary, high affinity protease (Proteinase K). Such reagents assure lysis and complete protein degradation. Subsequently the lysate is loaded onto the spin minicolumn with dedicated silica membrane. The DNA binds to the silica membrane, while contaminants (fragmented proteins, salts, etc.) pass through the column freely. Residual contaminants are moved away by a wash step. Pure DNA is eluted with a low salt buffer or water and can be used in following experiments without further purification procedures (e.g. precipitation).

Plas/mini Isolation Spin-Kit

B

for 50 or 250 isolations

HS-No.: 38220000

Storage: RT

- Kit for the isolation of high copy number plasmid DNA with spin minicolumns
- suited for a culture volume of 1 - 3 ml
- isolated DNA may be used for cloning, sequencing, PCR
- Binding capacity per column 20 µg DNA

Order-No.
A5172,0050
A5172,0250

Quantity
50 Isol.
250 Isol.

Comment: This kit is based on the property of DNA to adsorb to silica surfaces in the presence of high concentrations of chaotropic salts. After modified alkaline lysis, the supernatant containing the plasmid DNA is loaded onto a spin column. Plasmid DNA is adsorbed on the surface of the silica filter, while contaminants pass through without being adsorbed. After washing, pure DNA is eluted in a low salt buffer or water.

Plas/mini Isolation Kit XL

B

for 50 isolations by gravity flow

HS-No.: 38220000

Storage: RT

- Kit for the isolation of large and/or low copy number plasmid DNA with minicolumns
- isolated DNA may be used for cloning, sequencing, PCR
- designed for plasmids larger than 10,000 bp (BAC, YAC, Cosmid, Phagemid)
- suited for a culture volume of 1 - 10 ml
- Binding capacity per column 15 µg DNA

Order-No.
A7061,0050

Quantity
50 Isol.

Plas/midi Isolation Spin-Kit

B

for 10 isolations

HS-No.: 38220000

Storage: RT

- Kit for the isolation of high and medium copy number plasmid DNA with spin Minicolumns
- for culture volumes of 50 - 100 ml
- Binding capacity per column 150 - 200 µg DNA
- Applications: DNA suited for cloning, sequencing and PCR

Order-No.
A5182,0010

Quantity
10 Isol.

Comment: The Plas/midi Isolation Spin-Kit applies unique ion-exchange membranes of unusual high DNA binding capacity. The bacterial lysate is filtered through the special filtration cartridges and then loaded onto columns with the ion-exchange membranes. Plasmid DNA is bound to the membrane at 99 % efficiency while the most of impurities easily pass through. A washing step removes residual contaminants away. Subsequently, the DNA is eluted from the column with a high ionic strength solution. To obtain the highest purity, the eluted DNA is desalted and concentrated by a precipitation. To make the process of precipitation easier and to avoid accidental loss of the pellet, a blue-coloured precipitation enhancer is added. It also significantly shortens centrifugation time. Finally, the plasmid DNA can be dissolved in a desired volume of water or appropriate buffer.

DNA - Isolation reagent for genomic DNA

B

HS-No.: 38220000

Storage: RT

Warning
EUH032-H302-H312-H332
P262


- Phenol-free solution for the rapid isolation of genomic DNA
- from samples of human, animal (incl. mouse tail), plant, yeast, bacterial and viral origin

Order-No.
A3418,0050

Quantity
50 ml

Literature: (1) Chomczynski, P. & Sacchi, N. (1987) *Anal. Biochem.* **162**, 156-159

Single-step method of RNA isolation by "AGPC" extraction.

Comment: The Genomic DNA Isolation Reagent is a non-organic and ready-to-use reagent for the isolation of genomic DNA from human, animal (incl. mouse tail), plant, yeast, bacterial and viral origin. It is an improved version of the Chomczynski method (1), which is based on disruption of cells in a guanidium-detergent lysing solution that hydrolyzes RNA and allows the selective precipitation of DNA from a cell lysate with ethanol. Following an ethanol wash, DNA is solubilized in water or 8 mM NaOH. There is no phenol in the Genomic DNA Isolation Reagent. The protocol is fast and permits isolation of genomic DNA from a large number of samples of small or large volumes. The procedure can be completed in 10 - 30 minutes with DNA recovery of 70 - 100 %. The isolated DNA can be used, without additional purification, for Southern-analysis, dot blot hybridization, molecular cloning, RFLP, PCR and other molecular biology and biotechnology applications. A detailed application protocol is included.

Geno/mini DNA Isolation Spin-Kit

B

for 50 or 250 isolations

HS-No.: 38220000

Storage: RT
except for Proteinase K - Solution:
+4°C

- Kit for the universal genomic DNA purification with spin minicolumns
- Advantage: One universal protocol for different types of samples
- Applications: DNA suited for Southern blotting, PCR and Gene library cloning
- Binding capacity of the column: 20 µg DNA
- Maximum sample volume: Blood (100 µl), cell culture cells (10⁶ cells); bacteria (10⁸ cells), tissue (15 mg)

Order-No.
A5185,0050
A5185,0250

Quantity
50 Isol.
250 Isol.

Comment: This kit is based on the property of DNA to adsorb to a silica surface in the presence of high concentrations of chaotropic salts. Cells or tissue are lysed with a special lysing solution, containing the chaotropic salt Total Lysis buffer AC, together with Proteinase K. In the next step the lysate containing the DNA is loaded onto spin columns. DNA is adsorbed on the surface of silica filter, while contaminants are passing through without adsorption. After washing, pure DNA is eluted in low salt buffer or water.

Geno/mini AX <i>Bacteria</i> DNA Isolation Spin-Kit			B
<i>for 60 isolations</i>	HS-No.: 38220000	Storage: RT except for Lysozyme -20°C	
• Kit for the isolation of genomic DNA from bacteria with spin minicolumns • Applications: DNA suited for e.g. Southern blotting, PCR and Gene library cloning • Binding capacity of the column: 20 µg DNA • Maximum sample volume: 0.2 - 1 ml over-night culture			
		Order-No. A7726,0060	Quantity 60 Isol.

Geno/mini AX <i>Blood</i> DNA Isolation Spin-Kit			B
<i>for 60 isolations</i>	HS-No.: 38220000	Storage: RT except for Porteinase K - Solution: +4°C	
• Kit for the isolation of genomic DNA from resh or frozen blood with spin minicolumns • Applications: DNA suited for Southern blotting, PCR and Gene library cloning • Binding capacity of the column: 20 µg DNA • Maximum sample volume: 10 - 200 µl blood samples • Isolation of fragments in the range of 50 kb			
		Order-No. A7717,0060	Quantity 60 Isol.

Geno/mini AX <i>Food</i> DNA Isolation Spin-Kit			B
<i>for 60 isolations</i>	HS-No.: 38220000	Storage: RT except for Porteinase K - Solution: +4°C	
• Kit for the isolation of genomic DNA from food (animal/plant origin) with spin minicolumns • Applications: DNA suited for Southern blotting, PCR and Gene library cloning • Binding capacity of the column: 20 µg DNA • Maximum sample volume: 100 mg food sample			
		Order-No. A7755,0060	Quantity 60 Isol.

Geno/mini AX <i>Plant</i> DNA Isolation Spin-Kit			B
<i>for 60 isolations</i>	HS-No.: 38220000	Storage: RT except for Porteinase K - Solution: +4°C	
• Kit for the isolation of genomic DNA from plants with spin minicolumns • Applications: DNA suited for Southern blotting, PCR and Gene library cloning • Binding capacity of the column: 20 µg DNA • Maximum sample volume: 100 mg fresh frozen or 20 mg dried plant material			
		Order-No. A7733,0060	Quantity 60 Isol.

Geno/mini AX <i>Stool</i> DNA Isolation Spin-Kit			B
<i>for 60 isolations</i>	HS-No.: 38220000	Storage: RT except for Porteinase K - Solution: +4°C	
• Kit for the isolation of genomic DNA from stool with spin minicolumns • Applications: DNA suited for Southern blotting, PCR and Gene library cloning • Binding capacity of the column: 20 µg DNA • Maximum sample volume: 100 mg of stool sample			
		Order-No. A7840,0060	Quantity 60 Isol.

Geno/mini AX Tissue DNA Isolation Spin-Kit

B

for 60 isolations

HS-No.: 38220000

Storage: RT
except for Porteinase K - Solution:
+4°C

- Kit for the isolation of genomic DNA from **tissue** or **cell cultures** with spin minicolumns
- Applications: DNA suited for Southern blotting, PCR and Gene library cloning
- Binding capacity of the column: 20 µg DNA
- Maximum sample volume: 25 mg of tissue or 10⁶ cells

Order-No.	Quantity
A7800,0060	60 Isol.

Geno/mini AX Yeast DNA Isolation Spin-Kit

B

for 60 isolations

HS-No.: 38220000

Storage: RT
except for Spheroplast Suspension
Buffer SSB and Chitinase -20°C

- Kit for the isolation of genomic DNA from **yeast** with spin minicolumns
- Applications: DNA suited for Southern blotting, PCR and Gene library cloning
- Binding capacity of the column: 20 µg DNA
- Maximum sample volume: 1 - 3 ml of yeast culture

Order-No.	Quantity
A7777,0060	60 Isol.

Geno/midi AX DNA Isolation Spin-Kit

B

for 20 isolations

HS-No.: 38220000

Storage: RT
except for Proteinase K - Solution:
+4°C

- Medium scale kit for universal genomic DNA purification with spin columns
- Binding capacity of the columns 100 µg
- Application of the DNA in cloning, sequencing, PCR and Southern blotting
- Maximum sample volume: Blood (2 ml); cell culture cells (1x10⁷ cells), bacteria (5x10⁹ cells), tissue (100 mg)

Order-No.	Quantity
A5196,0020	20 Isol.

Comment: The Geno/midi AX DNA Isolation Spin-Kit includes unique ion-exchange membranes of unusual high DNA binding capacity. Samples like bacterial or tissue lysates are loaded onto the columns with the ion-exchange membranes. The DNA is bound to the membrane at an efficiency of 99 %, while most of the impurities easily pass through. Washing step(s) remove residual impurities. Subsequently, the DNA is eluted from the column with a high ionic strength solution. To obtain the highest purity, the eluted DNA is desalted and concentrated by precipitation. Finally, the DNA can be dissolved in the desired volume of water or appropriate buffer.

Geno/maxi AX DNA Isolation Spin-Kit

B

for 10 isolations

HS-No.: 38220000

Storage: RT
except for Porteinase K - Solution:
+4°C

- Kit for the universal genomic DNA purification with spin maxicolumns
- Advantage: One universal protocol for different types of samples
- Applications: DNA suited for e.g. Southern blotting, PCR and Gene library cloning
- Binding capacity of the column: 500 µg DNA
- Maximum sample volume: Blood (5 ml), cell culture cells (3x10⁷ cells); bacteria (20 ml o/n culture), tissue (300 mg)

Order-No.	Quantity
A7878,0010	10 Isol.

Geno/miracle DNA Isolation Spin-Kit

B

for 25 or 100 isolations

HS-No.: 38220000

Storage: RT
except for Proteinase K - Solution:
+4°C

- Kit for universal genomic DNA purification from difficult sources
- Applications: PCR, Southern blotting, gene library cloning
- Binding capacity per column 20 µg
- Advantages: high DNA recovery, highest purity

Order-No.	Quantity
A5179,0025	25 Isol.
A5179,0100	100 Isol.

Comment: This kit is based on the unique anion exchange membrane with very high affinity to DNA. Cells or tissue are lysed with a special Lysis Solution AC1.4 and Proteinase K. In the next step the lysate, which contains DNA, is loaded onto a spin column. Negatively charged phosphates on the backbone of DNA interact with the positive charges on the surface of the membrane. Under medium salt conditions, impurities are washed off. Then, the pure DNA is eluted under high salt conditions, desalted and concentrated by an alcohol precipitation. To make the process of precipitation easier and to avoid an accidental loss of the pellet, a blue-coloured precipitation enhancer is added.

Plant AC

B

HS-No.: 38220000

Storage: 2-8°C

- for use with the DNA Isolation Reagent for Genomic DNA (A3418).
- contains Polyvinylpyrrolidone (PVP)
- for the removal of reactive polyphenols and polysaccharides from plant lysates

Order-No.	Quantity
A5208,0010	10 ml

Comment: The Plant AC solution contains a high molecular weight polymer, Polyvinylpyrrolidone (PVP), which binds the reactive polyphenolic and polysaccharide contaminants present in plant tissues lysates. These contaminants interfere with genomic DNA. Plant AC is intended for use with the DNA Isolation Reagent for Genomic DNA (A3418,0050).

Terminator Removal Kit

B

for 50 or 250 reactions

HS-No.: 38220000

Storage: RT

- Nucleotide terminators removal kit for cycle sequencing reactions
- suited for sequencing
- Advantages: no danger of loosing a pellet, complete terminator removal

Order-No.	Quantity
A5176,0050	50 reac.
A5176,0250	250 reac.

Comment: The principle of the Terminator Removal kit is based on the precipitation of the cycle sequencing reaction products on the surface of an especially designed membrane. The addition of Blue-Mix AC to the cycle sequencing reaction mixture enables to easily control the precipitation process. In the next step the bind & wash solution is added and the whole mixture is loaded onto the MiniColumns TRK. During the short centrifugation step, the cycle sequencing products are bound to the minicolumn membrane while the excess of non-incorporated nucleotide terminators and sequencing primers pass through the membrane. The remaining salts and other residual impurities are removed by a washing step. Subsequently, the purified cycle sequencing reaction products are eluted directly with water and in case of capillary DNA sequencers samples are ready-to-denature without any additional steps (e.g. drying, dissolving in an appropriate buffer).

Terminator Removal 96-well Kit

B

Terminator removal

HS-No.: 38220000

Storage: RT

for 192 reactions in the 96-well format

- Nucleotide terminators removal kit for cycle sequencing reactions
- suited for sequencing
- Advantages: no danger of loosing a pellet, complete terminator removal

Order-No.	Quantity
A7830,0192	192 reac.

Virus DNA/RNA Isolation Spin-Kit

B

for 50 or 100 isolations

HS-No.: 38220000

Storage: RT

- Kit for the viral DNA/RNA isolation from blood
- Binding capacity of the column: 10 µg DNA or 50 µg RNA
- Applications: DNA suited for Southern blotting, PCR and Gene library cloning
- Maximum sample volume: 350 µl of blood

Order-No.	Quantity
A7862,0100	100 Isol.

DNA-Dye Methylene blue

B

Methylene blue DNA staining reagent

HS-No.: 38220000

Storage: 2-8°C

- nontoxic solution for the staining of nucleic acids in agarose gels
- may be used several times
- 200-fold concentrated solution
- **sensitivity:** approx. 10 ng of DNA are detectable

Specification:

Concentration 0.2 mg/ml

Order-No.	Quantity
A5595,0010	10 ml

Comment: Protocol for staining with DNA-Dye Methylene blue:

Approx. 50 ml 1X DNA-Dye Methylene blue staining solution are required to stain an agarose gel with the dimensions of approx. 80 x 60 mm (width x length) and a thickness of 3 - 4 mm. The gel should be trimmed down appropriately, with the edge of a ruler for example, to remove areas of the gel that were not used for DNA separation. The staining is performed in an adequately sized dish, in which the gel is floated to a depth of about 5 mm with dye solution. To prepare the DNA-Dye Methylene blue staining solution for use, 250 µl are dissolved in 50 ml water. The gel is left to stain for about 20 minutes and the dish is shaken occasionally. To reveal the bands (different staining intensities) the gel is destained with tap water several times for about 5 - 10 minutes. The blue-stained DNA bands are clearly visible in transmitted light and can be measured with a ruler or documented photographically. Methylene blue does not stain DNA permanently: depending on the thickness of the gel and the storage temperature, the DNA bands (especially smaller fragments) may lose their staining after some time.

Repeated use of the 1X staining solution: The prepared 1X methylene blue staining solution can be kept in a suitable brown-glass bottle at 2-8°C for 4 - 6 months and can be used several times. The staining period should be lengthened by about 20 % for the second use, and by the same again for the third use. After this, the staining capacity of the solution is largely exhausted and a new solution for use should be prepared.

Sensitivity: The bands in a 1 kb ladder (loading amount 1 µg; mass of the single bands vary from 10 to 200 ng) can be stained without problems. Small fragments (150 bp) can also be stained. The decisive factors in sensitivity are the thickness of the gel, the gel:staining solution ratio, and the destaining time. By varying the staining conditions, you can easily determine the best conditions for your system.

DNA-ExitusPlus™

Solution for the removal of DNA and RNA contaminations, Decontamination solution for the removal of DNA and RNA contaminations

HS-No.: 38220000

Storage: RT

DNA-ExitusPlus™

B

Nucleic acid decontamination reagent

◆ improved version of DNA-Exitus

- removes DNA and RNA contaminations from surfaces
- for cleaning of PCR work stations and equipment
- for cleaning of electrophoresis equipment, pipettes, reaction tubes etc.
- delivered as spray bottles or as refill bottles (RF)

◆ special, new features

- non-enzymatic degradation of DNA and RNA by catalytic and cooperative effects of the components
- All components of DNA-ExitusPlus™ are readily biologically degradable and not harmful or toxic for humans.
- Doesn't contain aggressive mineralic acids or alkaline substances
- No toxic fumes. Contains low concentration of alcohol.

Order-No.	Quantity
A7089,0100	100 ml
A7089,0250	250 ml
A7089,0500	500 ml
A7089,1000	1 L
A7089,10006	6 x 1 L
A7089,1000RF	1 L
A7089,10006RF	6 x 1 L
A7089,2500RF	2.5 L
A7089,25004RF	4 x 2.5 L

◆ Attention: New formulation!

Literature: (1) Esser, K.-H. et al. (2006) *Nature Methods* **3**(2), 151

DNA decontamination: DNA-ExitusPlus in comparison with conventional reagents.

Comment: DNA amplification is one of the most commonly used techniques in the modern research laboratory. The presence of contaminating DNA in and around PCR workstations can lead to unwanted artifacts during amplification. Principally, there are two ways to make DNA not amplifiable:

1. by degradation of the DNA (e. g. by the addition of DNases or chemical destruction), or
2. by modification of bases - leaving the DNA strand intact, but blocked for reading by polymerases.

Using a DNA strand break assay (designed by multiBIND biotec GmbH, Germany), it has been shown that not all DNA decontamination solutions on the market totally degrade DNA! DNA-ExitusPlus™ is an improvement over those products and causes both strand breakages as well as degradation. When used properly at the work area, it totally eliminates the amplification of non-target DNA. DNA-ExitusPlus™ is a non-alkaline, non-corrosive and non-carcinogenic cleansing solution which is effective on all surfaces.

A severe disadvantage of conventional decontamination reagents is revealed in a new test for the corrosive potential of their components. For this purpose, different metal plates were incubated for 20 minutes with identical aliquots of the reagents. The selected metals are representative for equipment and materials found in laboratories. The result of this corrosion test show that all known commercial products contain aggressive chemical substances with corrosive, harmful or even toxic effects. These conventional reagents are known to contain azides, mineralic acids like phosphoric acid or hydrochloric acid, aggressive peroxides or strong alkaline substances like sodium hydroxide. Even after an incubation of only 20 minutes, irreversible damages of the metal surfaces are observed in many cases. The newly developed solution DNA-ExitusPlus™ exhibits its unique characteristics especially in this corrosion test. For all metal surfaces tested, no damage or corrosion is observed after treatment. DNA-ExitusPlus™ was also tested under identical conditions on many different plastic surfaces without any indications of damage.

DNA-ExitusPlus™ is a registered trademark of AppliChem GmbH.

DNA-ExitusPlus™ IF

B

◆ improved version of DNA-Exitus

- removes DNA and RNA contaminations from surfaces
- for cleaning of PCR work stations and equipment
- for cleaning of electrophoresis equipment, pipetts, reaction tubes etc.
- delivered as spray bottles or as refill bottles (RF)

◆ special, new features

- **indicator-free** version of DNA-ExitusPlus™
- All components of DNA-ExitusPlus™ IF are readily biologically degradable and not harmful or toxic for humans.
- Doesn't contain aggressive mineralic acids or alkaline substances
- No toxic fumes. Contains low concentration of alcohol.

Order-No.	Quantity
A7409,0100	100 ml
A7409,0250	250 ml
A7409,0500	500 ml
A7409,1000	1 L
A7409,10006	6 x 1 L

◆ Attention: New formulation!

Comment: In a biotechnological research laboratory, stains on equipment, working surfaces or the floor are considered a blemish, as it indicates sloppy working conditions or simply that something was spilled. It can become really dangerous, if something is spilled that you cannot see - not even after the spilled reagent has dried up.

Ethidium bromide does not become visible until the room or the object is illuminated with ultraviolet light. But what about acids and bases? Have you ever put an undamaged garment into your washing machine only to find it full of holes upon taking it out? The acid or base splashes had not been visible before! Sodium azide is a toxic component of many buffers to prevent the growth of bacteria and fungi. Strangely enough, it is sometimes also contained in certain nucleic acid decontamination products - despite the fact that it does not have any degrading effect on nucleic acids. And you are spraying this product on your surfaces as well! The spraying of many precarious reagents in particular lead to the so-called "stacking effect", meaning that over time, residues of the reagents that were not removed accumulate on surfaces, as well as inside equipment. Once a critical concentration is reached, surfaces, boards and computers start being attacked or even destroyed, without the user being able to make the connection to the products used! Many reagents for nucleic acid decontamination exercise their "effect", among others, by inhibiting PCR reactions - something they can only do, if they are not removed in their entirety.

In contrast to this, our products work differently: DNA-ExitusPlus™ really disintegrates nucleic acids into their individual components without acting corrosively on surfaces or equipment. In order to be able to see, where DNA-ExitusPlus™ was used, we have added a color indicator to our nucleic acid and RNase decontamination products DNA-ExitusPlus™ and RNase-ExitusPlus™. It leaves a reddish-violet film on the treated surface that is easily removed with water. Thus, you can see exactly, where the product was used.

Not every user was happy with this. Therefore, we offer DNA-ExitusPlus™ in an indicator-free (IF) version as well.

DNA-ExitusPlus™ is a registered trademark of AppliChem GmbH.

DNA Phage Lambda

B

HS-No.: 35079090

Storage: -20°C

Specification:

Concentration 0.2 - 0.5 mg/ml

Order-No.	Quantity
A5187,0005	0.05 mg
A5187,0025	0.25 mg
A5187,1000	1 mg

Literature: (1) Sanger, F. *et al.* (1982) *J. Mol. Biol.* **162**, 729

Comment: Phage Lambda *ci857 Sam7* DNA is isolated from an infected *E. coli* strain W3350. Restriction enzyme-digested lambda DNA (48,502 bp) generates molecular weight size markers routinely used in gel analysis of nucleic acids. The complete nucleotide sequence has been determined (1). The DNA will be supplied in the storage buffer (10 mM Tris · HCl (pH 8.0), 10 mM NaCl, 1 mM EDTA).

DNA Phage Lambda *dam*⁻, *dcm*⁻

B

HS-No.: 35079090

Storage: -20°C

Specification:

Concentration 0.2 - 0.5 mg/ml

Order-No.	Quantity
A5226,0005	0.05 mg
A5226,0025	0.25 mg
A5226,1000	1 mg

Comment: Phage Lambda *ci857 Sam7* DNA is isolated from an infected *E. coli* strain deficient in adenine and cytosine methylases (*dam*⁻, *dcm*⁻). Restriction endonucleases that are sensitive to *dam* and/or *dcm* methylation give complete digests with this DNA. The DNA will be supplied in the storage buffer (10 mM Tris · HCl (pH 7.8), 10 mM NaCl, 1 mM EDTA).

DNA Phage T7

B

HS-No.: 35079090

Storage: -20°C

Specification:

Concentration 0.2 - 0.5 mg/ml

Order-No.	Quantity
A5197,0005	0.05 mg
A5197,0025	0.25 mg

Literature: (1) Dunn, J.J. & Studier, F.W. (1983) *J. Mol. Biol.* **166**, 477-535

Complete nucleotide sequence of bacteriophage T7 DNA and the locations of T7 genetic elements.

Comment: Bacteriophage T7 DNA is isolated from an infected *E. coli* strain. The DNA is linear and 39937 bp long. Some restriction enzymes have no recognition sequences on lambda DNA, therefore these enzymes have to be analyzed on another DNA substrate. T7 DNA is the most popular "alternative" to Lambda DNA as a substrate for restriction endonucleases. The complete nucleotide sequence has been determined (1). The DNA will be supplied in storage buffer (10 mM Tris · HCl (pH 8.0), 10 mM NaCl, 1 mM EDTA).

DNA Polymerase I, Klenow-Fragment from *E. coli*

B

expressed in *E. coli*

HS-No.: 35079090

Storage: -20°C

Shipment: wet ice

◆ supplied with 10X reaction buffer

◆ Application

- DNA sequencing by the Sanger dideoxy method.
- Fill-in of 5'-overhangs to form blunt ends.
- Removal of 3'-overhangs to form blunt ends.
- Second strand cDNA synthesis.
- Second strand synthesis in mutagenesis protocols.

Specification:

Endo-/Exonucleases not detectable
Concentration 5000 - 50000 Units/
ml

Order-No.	Quantity
A5217,0200	200 U
A5217,1000	1000 U

Comment: DNA Polymerase I, Large (Klenow) Fragment is a proteolytic product of *E. coli* DNA Polymerase I which retains polymerization and 3' → 5' exonuclease activity, but has lost 5' → 3' exonuclease activity. Klenow retains the polymerization fidelity of the holoenzyme without degrading 5' termini. This product has been purified from an *E. coli* strain harbouring the plasmid that directs the synthesis of the Klenow fragment. It is supplied with the **Reaction Buffer (10X)** 100 mM Tris · HCl (pH 7.5), 50 mM MgCl₂, 50 mM dithiothreitol. The Klenow Fragment is also active in any restriction enzyme reaction buffer and T4 DNA Ligase reaction buffer when supplemented with dNTPs. The storage buffer contains 100 mM potassium phosphate (pH 6.5), 1 mM DTT and 50 % glycerol.

Stability: The enzyme is stable at 2-8°C for several days (up to 1 week) without loss of activity.

Unit definition: One unit is defined as the amount of enzyme required to convert 10 nmoles of dNTPs to an acid-insoluble form in 30 minutes at 37°C.

DNA-PrecipitAid

B

Precipitation reagent for DNA, RNA and proteins, linear polyacrylamide

HS-No.: 38220000

Storage: 2-8°C

- Appears inert in all experiments.
- enables to completely recover DNA fragments > 20 base pairs.
- Neutral carrier for precipitating picogram amounts of nucleic acids.

Specification:

Concentration 5 mg/ml

Order-No.	Quantity
A6587,0001	1 ml

Literature: (1) Gaillard, C. & Strauss, F. (1990) *Nucleic Acids Res.* **18**, 378
(2) Bartram, A.K. *et al.* (2009) *BioTechniques* **47**, 1019-1022

Ethanol precipitation of DNA with linear polyacrylamide as carrier.
Nucleic acid contamination of glycogen used in nucleic acid precipitation and assessment of linear polyacrylamide as an alternative co-precipitant.

Comment: Gaillard & Strauss (1990) published a simple method to precipitate DNA by ethanol with linear polyacrylamide as carrier. It is a neutral carrier for precipitating picogram amounts of nucleic acids. DNA-PrecipitAid enables to completely recover DNA fragments larger than 20 base pairs. It permits the separation of short DNA fragments and nucleotides, e.g. after labeling reactions, since they do not coprecipitate.

DNA-PrecipitAid can also be used to precipitate RNA with ethanol or proteins with acetone.

DNA-PrecipitAid appears inert in all experiments, unlike tRNA, which is phosphorylated by polynucleotide kinase, or glycogen, which interferes with DNA-protein interactions. DNA-PrecipitAid is a synthetic product (non-animal origin). It hasn't been in contact with biological materials and is therefore the coprecipitant of choice for PCR/RT-PCR, since no contamination by nucleic acids is detectable (see e.g. Bartram *et al.*).

DNA pUC19 Plasmid

B

HS-No.: 35079090

Storage: -20°C

Specification:

Concentration 0.2 mg/ml

Order-No.	Quantity
A5196,0005	0.05 mg
A5196,0025	0.25 mg

Literature: (1) Yanisch-Perron, C. *et al.* (1985) *Gene* **33**, 103-119
(2) **ACCESSION** L09137 X02514, **MEDLINE** 85180545, **PUBMED** 2985470

Comment: pUC19 is a commonly used *E. coli* plasmid cloning vector. The molecule is a double-stranded circle with 2686 base pairs in length. pUC19 carries a multiple cloning site polylinker that contains unique sites for 13 different restriction endonucleases (6-cutters). It will be supplied in the storage buffer 10 mM Tris · HCl (pH 7.8), 10 mM NaCl, 1 mM EDTA.

DNase I

B

Deoxyribonuclease I, [E.C. 3.1.21.1]
salt-free, freeze-dried powder,
chromatographically prepared
from bovine pancreas

$M = \sim 31000$ g/mol
CAS-No.: 9003-98-9
HS-No.: 35079090
EC-No.: 232-667-0

Storage: -20°C
LGK: 10 - 13

Specification:

Activity (Kunitz) min. 3000 U/mg

Order-No.	Quantity
A3778,0010	10 mg
A3778,0050	50 mg
A3778,0100	100 mg
A3778,0500	500 mg

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. pp. A4.40-42. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001. *Current Protocols in Molecular Biology*. John Wiley & Sons, N.Y.
(3) McDonald, M.R. (1955) *Methods Enzymol.* **2**, 437-447
(4) Campbell, V.W. & Jackson, D.A. (1980) *J. Biol. Chem.* **255**, 3726-3735
(5) Meinkoth, J. & Wahl, G.M. (1987) *Methods Enzymol.* **152**, 91-94
(6) Cobianchi, F. & Wilson, S.H. (1987) *Methods Enzymol.* **152**, 94-110

Deoxyribonucleases
The effect of bivalent cations on the mechanism of DNase I.
Nick-Translation.
Enzymes for modifying and labeling of DNA and RNA.

Comment: Deoxyribonuclease I (DNase I) from beef pancreas is an endonuclease (glycoprotein), which preferentially cleaves the phosphodiester bond in the DNA behind pyrimidine nucleotides. This results in a polynucleotide with a 5'-phosphate and a free OH-group in position 3'. DNase I cleaves single-stranded and double-stranded DNA as well as chromatin. The specificity of the enzyme reaction (single-strand-'Nicks' versus double-strand breaks) is determined by the ions available. In the presence of Mg^{2+} single-strand nicks are generated and in the presence of Mn^{2+} double-strand breaks. The pH-optimum of DNase I is 7.8 and it is activated by divalent cations. Maximum activation requires the presence of Mg^{2+} and additional Ca^{2+} . Calcium ions (5 mM) protect DNase I from proteolytic digest. Inhibition is achieved by citrate, if activation is done by magnesium, but not if manganese has been the activator. Besides it is inhibited by chelators such as EDTA and SDS or β -mercaptoethanol.

The enzyme is used in molecular biology techniques like digestion of DNA, in the RNA purification (ref. 2 Suppl. 1 pp. 4.1.4) or generating "random nicks" for "nick translation" (ref. 2 Suppl. 9 pp. 3.5.4-6) or 'footprint'-assays (ref. 2 Suppl. 7 chapter 12.4) or investigations on chromatin (ref. 2 Suppl. 48 chapter 21.4.1).

Unit definition: One unit is defined as that amount of enzyme which causes an increase of absorbance at 260 nm of 0.001 per minute at 25°C based on the method of Kunitz. DNase I is readily soluble in e. g. 0.15 M sodium chloride or in reaction buffer (e. g. 50 mM Tris · Cl, pH 7.5; 10 mM $MgCl_2$ (single-strand 'nicks') and 10 mM $MnCl_2$ (double-strand breaks), respectively; 50 μ g/ml BSA; ref. 2 Suppl. 8 page 3.12.5). For storage dissolve DNase I in 50 % glycerol (w/v); 20 mM Tris · Cl, pH 7.5; 1 mM $MgCl_2$. For stability reasons the concentrations should be at least 1 mg/ml (The maximum solubility is 10 %). This solution is stable for more than one year (ref. 2 Suppl. 8 page 3.12.5). The lyophilized form is stable for 2 - 5 years if kept at +4°C. If a solution is protease-free, DNase I will not lose significant activity at pH 5 - 7 and 62°C for 5 hours. The enzyme may be heat-inactivated (10 minutes at 99°C).

RNase-free DNase I: Dissolve DNase I at 1 mg/ml in 0.1 M iodoacetic acid plus 0.15 M sodium acetate at a final pH of 5.3. The solution is then heated 40 minutes at 55°C and cooled. Finally, 1 M $CaCl_2$ is added to the solution to 5 mM. Store frozen in small aliquots (according to ref. 2 page 3.12.6 Supplement 8).

DNA Size Standard for Gel Electrophoresis see Electrophoresis Size Marker/Standard DNA Page 319

Reverse Transcription First Strand cDNA Synthesis Kit for RT-PCR see First Strand cDNA Synthesis-Kit for RT-PCR Page 351

DNSCI see Dansyl chloride *BioChemica* Page 259

DNSF see Dansyl fluoride *BioChemica* Page 259

dNTP with aminolinker see Deoxyribonucleotides with aminolinkers Page 267

1-Dodecanesulfonic acid sodium salt IPC grade

C

Sodium laurylsulfonate

$C_{12}H_{25}NaO_3S$
 $M = 272.38$ g/mol
CAS-No.: 2386-53-0
HS-No.: 29041000
EC-No.: 219-200-6

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr.) min. 99 %
Alkylbromide max. 0.01 %
Solubility (1 %; H_2O) clear, colorless

A (1 cm/0.005 M in water HPLC grade)
210 nm max. 0.1
230 nm max. 0.05
260 nm max. 0.02

Order-No.	Quantity
A1019,0005	5 g
A1019,0010	10 g
A1019,0025	25 g

Dodecanoic acid see Lauric acid pure Page 479

N-Dodecanoyl-N-methylglycine sodium salt see N-Lauroylsarcosine sodium salt Page 480

N-Dodecanoyl-N-methylglycine sodium salt - Solution see N-Lauroylsarcosinate - Solutions Page 480

N-Dodecyl-dimethyl-3-ammonio-1-propane-sulfonate see Sulfobetaine SB 12 Page 778

n-Dodecyl- β -D-glucopyranoside *BioChemica*

B

CMC (H_2O) 0.19 mM
Classification: nonionic detergent

$C_{18}H_{36}O_6$
 $M = 348.48$ g/mol
CAS-No.: 59122-55-3
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, EtOH -24.7°
Melting point 135 - 145°C
Solubility (0.1 %; H_2O , EtOH) clear, colorless
..... max. 0.01 %
n-Dodecanol max. 0.01 %

A (1 cm/0.1 %, Water HPLC grade)
260 nm max. 0.03

Order-No.	Quantity
A5890,0001	1 g
A5890,0005	5 g

n-Dodecyl- α -maltoside BioChemica



B

Lauryl- α -maltoside

$C_{24}H_{46}O_{11}$
 $M = 510.63$ g/mol
CAS-No.: 116183-64-3
HS-No.: 29389090

Storage: 2-8°C

WGK: 3
hygroscopic

CMC (H₂O) approx. 0.15 mM
Melting range 115 - 125°C
(smectic A)

Specification:

Assay min. 99.5 %
 α 20°C/D; 1 %, H₂O +137° - +143°
Appearance white powder
Solubility (20 %; H₂O) clear, colorless
pH (1 %; H₂O) 5.5 - 6.5

n-Dodecanol (HPLC) max. 0.1 %
n-Dodecyl- β -maltoside (HPLC)
..... max. 0.1 %

A (1 cm/1 % in water HPLC grade)
260 nm max. 0.05
280 nm max. 0.05

Order-No.	Quantity
A8999,0100	100 mg
A8999,0250	250 mg
A8999,0001	1 g

n-Dodecyl- β -D-maltoside

Aggregation No. (N_a) . 98

CMC (25°C) 0.15 - 0.19 mM

Classification: nonionic detergent

$C_{24}H_{46}O_{11}$
 $M = 510.63$ g/mol
CAS-No.: 69227-93-6
HS-No.: 29389090

Storage: 2-8°C

n-Dodecyl- β -D-maltoside Crystallography grade

B

Specification:

Assay min. 99.5 %
 α 20°C/D; 1 %, H₂O +46° - +50°
Solubility (10 %; H₂O; 21°C) clear, colorless
Thermal transition 246°C (isotropic)

α -Isomere (HPLC) max. 0.01 %
n-Dodecanol (HPLC) max. 0.001 %

A (1 cm/1 %, water HPLC grade)
260 nm max. 0.04

Order-No.	Quantity
A6817,0001	1 g
A6817,0005	5 g
A6817,0010	10 g

n-Dodecyl- β -D-maltoside BioChemica

B

Lauryl- β -D-maltoside

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, H₂O +46° - +50°
Solubility (10 %; H₂O) clear, colorless

Order-No.	Quantity
A0819,0250	250 mg
A0819,0500	500 mg
A0819,0001	1 g
A0819,0005	5 g

Literature: (1) Rosevear, P. et al. (1980) *Biochemistry* **19**, 4108-4115

(2) VanAken, T. et al. (1986) *Methods Enzymol.* **125**, 27-35

Alkyl glycoside detergents: A simpler synthesis and their effects on kinetic and physical properties of Cytochrome c Oxidase.

Alkyl glycoside detergents: Synthesis and applications to the study of membrane proteins.

Comment: Dodecyl- β -D-maltoside has been developed for the isolation of the mitochondrial cytochrome c oxidase (working concentration 10 - 20 mM). It belongs to the non-ionic alkyl glucosides. Isolation with dodecyl- β -D-maltoside resulted in a higher activity as compared to isolation with octylglucoside.

Dodecylpoly-(ethyleneglycoether)₂₃ see Brij® 35 BioChemica Page 157

Dodecylsulfate sodium salt see SDS Page 705

n-Dodecyl-1-thio- β -D-maltoside BioChemica

B

Classification: nonionic detergent

$C_{24}H_{46}O_{10}S$
 $M = 526.69$ g/mol
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, H₂O +39° - +41°
pH (1 %; H₂O) 6.0 - 7.0

A (1 cm/1 % in water HPLC grade)
260 nm max. 0.30

Order-No.	Quantity
A6821,0250	250 mg
A6821,0001	1 g
A6821,0005	5 g

Dodecyltrimethylammonium bromide BioChemica

B

Lauryltrimethylammonium bromide,
Alkyltrimethylammonium bromide, DTAB

$C_{15}H_{34}BrN$
 $M = 308.35$ g/mol
CAS-No.: 1119-94-4
HS-No.: 29239000
EC-No.: 214-290-3

Storage: RT
LGK: 10 - 13

WGK: 3
Warning
H319-H335-H301-H410-H315
P302+P352-P273-P302+P351+P338



CMC 10 mM
Classification: cationic detergent
Melting point 264 - 266°C

Specification:

Assay (titr.) min. 99 %
Solubility (5 %; H₂O) clear, colorless

Order-No.	Quantity
A4147,0010	10 g
A4147,0050	50 g
A4147,0250	250 g

Literature: (1) Bathaie, S.Z. et al. (1999) *Nucleic Acids Res.* **27**, 1001-1005

Energetic and binding properties of DNA upon interaction with DTAB.

DON see Deoxynivalenol BioChemica Page 266

Donor: hydrogen peroxide oxidoreductase see Peroxidase from horseradish Page 607

Dowex® - Anion Exchangers, strongly basic

Cl⁻-Form

HS-No.: 39140000

Storage: RT

Activ groups: quaternary ammonium groups

Matrix: Styrene - DVB - Copolymerisate

Dowex® 1 x 2 - Anion exchanger, strongly basic (50 - 100 mesh)			C
Particle size	 50 - 100 mesh		
		Order-No.	Quantity
		A0791,0100	100 g
		A0791,0500	500 g

® trademark of Dow Chemicals

Dowex® 1 x 2 - Anion exchanger, strongly basic (100 - 200 mesh)			C
Particle size	 100 - 200 mesh		
		Order-No.	Quantity
		A0792,0100	100 g
		A0792,0500	500 g

® trademark of Dow Chemicals

Dowex® 1 x 2 - Anion exchanger, strongly basic (200 - 400 mesh)			C
Particle size	 200 - 400 mesh		
		Order-No.	Quantity
		A0793,0100	100 g
		A0793,0500	500 g

® trademark of Dow Chemicals

Dowex® 1 x 8 - Anion exchanger, strongly basic (20 - 50 mesh)			C
Particle size	 20 - 50 mesh		
		Order-No.	Quantity
		A0794,0100	100 g
		A0794,0500	500 g

® trademark of Dow Chemicals

Dowex® 1 x 8 - Anion exchanger, strongly basic (50 - 100 mesh)			C
Particle size	 50 - 100 mesh		
		Order-No.	Quantity
		A0795,0100	100 g
		A0795,0500	500 g

® trademark of Dow Chemicals

Dowex® 1 x 8 - Anion exchanger, strongly basic (100 - 200 mesh)			C
Particle size	 100 - 200 mesh		
		Order-No.	Quantity
		A0796,0100	100 g
		A0796,0500	500 g

® trademark of Dow Chemicals

Dowex® 1 x 8 - Anion exchanger, strongly basic (200 - 400 mesh)			C
Particle size	 200 - 400 mesh		
		Order-No.	Quantity
		A0797,0100	100 g
		A0797,0500	500 g

® trademark of Dow Chemicals

Dowex® - Cation Exchangers, strongly acidic

Matrix: Polystyrene - DVB

HS-No.: 39140000

Storage: RT

Active group : Sulfonic acids

H⁺-Form

Dowex® 50 W x 2 - Cation exchanger, strongly acidic (50 - 100 mesh)			C
Particle size	 50 - 100 mesh		
		Order-No.	Quantity
		A0800,0100	100 g
		A0800,0250	250 g

® trademark of Dow Chemicals

Dowex® 50 W x 2 - Cation exchanger, strongly acidic (100 - 200 mesh)			C
Particle size	 100 - 200 mesh		
		Order-No.	Quantity
		A0801,0100	100 g
		A0801,0250	250 g

® trademark of Dow Chemicals

Dowex® 50 W x 2 - Cation exchanger, strongly acidic (200 - 400 mesh)

C

Particle size 200 - 400 mesh

Order-No.	Quantity
A0802,0100	100 g
A0802,0250	250 g

* trademark of Dow Chemicals

Dowex® 50 W x 4 - Cation exchanger, strongly acidic (200 - 400 mesh)

C

Particle size 200 - 400 mesh

Order-No.	Quantity
A0769,0100	100 g
A0769,0250	250 g

* trademark of Dow Chemicals

Dowex® 50 W x 8 - Cation exchanger, strongly acidic (50 - 100 mesh)

C

Particle size 50 - 100 mesh

Order-No.	Quantity
A0928,0100	100 g
A0928,0250	250 g

* trademark of Dow Chemicals

Dowex® 50 W x 8 - Cation exchanger, strongly acidic (100 - 200 mesh)

C

Particle size 100 - 200 mesh

Order-No.	Quantity
A0803,0100	100 g
A0803,0250	250 g

* trademark of Dow Chemicals

Dowex® 50 W x 8 - Cation exchanger, strongly acidic (200 - 400 mesh)

C

Particle size 200 - 400 mesh

Order-No.	Quantity
A0804,0100	100 g
A0804,0250	250 g

* trademark of Dow Chemicals

Doxorubicin hydrochloride *BioChemica*

B

Adriamycin hydrochloride,
Hydroxydaunorubicin

$C_{27}H_{30}ClNO_{11}$
M = 580.00 g/mol
CAS-No.: 25316-40-9
HS-No.: 29419000
EC-No.: 246-18-3

Storage: RT
LGK: 6.1 B

Danger
H340-H350
P309+P311-P201-P302+P352-P260



Specification:

Assay min. 98 %
Solubility (1 %; H₂O) clear, red-orange

Order-No.	Quantity
A4361,0001	1 mg
A4361,0010	10 mg
A4361,0025	25 mg

Doxycycline hydrochloride hemiethanolate hemihydrate see Doxycyclin hyclate *BioChemica* Page 308

Doxycycline hyclate *BioChemica*

B

Doxycycline hydrochloride
hemiethanolate hemihydrate

$C_{22}H_{25}ClN_2O_8 \cdot \frac{1}{2}H_2O \cdot \frac{1}{2}C_2H_6O$ Storage: 2-8°C
M = 512.94 g/mol
CAS-No.: 24390-14-5
HS-No.: 29413000
protected from light

Warning
H335-H315-H319-H302
P261-P305+P351+P338



Specification:

Assay (TLC) min. 98 %
Solubility (1 %; H₂O) clear, yellow-green
Ethanol max. 7 %
Loss on drying max. 5 %

Order-No.	Quantity
A2951,0005	5 g
A2951,0010	10 g
A2951,0025	25 g

DRCM Differential Supplement see Supplements for Microbiological Media Page 786

Drigalski Lactose Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Bile salts 1.5 g/L
Bromothymol blue 0.15 g/L
Crystal violet 0.002 g/L
Lactose 13.0 g/L

Peptones 17.4 g/L
Sodium chloride 2.0 g/L
Sucrose 17.0 g/L

Specification:

pH before autoclaving
..... approx. 7.3 (20°C)

Order-No.	Quantity
A5731,0500	500 g
A5731,5000	5 kg

Literature: (1) Ewing (1986) *Edwards and Ewing's identifications of the enterobac-teriaceae*. 4th ed.

Comment: This lactose containing selective medium is used for the detection and enumeration of coliforms.

Direction: Suspend 66 g in 1 L of distilled water and boil to dissolve the medium completely. Cool to 50°C and pour into Petri-dishes. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. The prepared medium should be used freshly or stored refrigerated for a few days.

DSG see Disuccinimidyl glutarate *BioChemica* Page 290

DSP see DTSP *BioChemica* Page 309

DSS see Disuccinimidyl suberate *BioChemica* Page 290

DST see Disuccinimidyl tartrate *BioChemica* Page 290

DTAB see Dodecyltrimethylammonium bromide *BioChemica* Page 306

DTE BioChemica

B

Cleveland's Reagent, 2,3-Dihydroxybutane-1,4-dithiol, 1,4-Dithioerythritol

 $C_4H_{10}O_2S_2$
 $M = 154.25 \text{ g/mol}$
CAS-No.: 6892-68-8
HS-No.: 29309099
EC-No.: 229-998-8

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Melting point 83 - 85°C

Specification:

Assay (iodometr.) min. 99 %
Solubility (5 %; H_2O) clear, colorless
pH (0.1 M; H_2O ; 20°C) 4.0 - 6.0

Order-No.	Quantity
A1102,0005	5 g
A1102,0025	25 g

Literature: (1) Cleland, W.W. (1964) *Biochemistry* **3**, 480-482
(2) Lane, L.C. (1978) *Anal. Biochem.* **86**, 655-664
(3) Jocelyn, P.C. (1987) *Methods Enzymol.* **143**, 246-256

Dithioerythritol, a new protective reagent for SH groups.
A simple method for stabilizing protein-sulfhydryl groups during SDS-gel electrophoresis.
Chemical reduction of disulfides.

Comment: Dithioerythritol (DTE) is an isomer of dithiothreitol (DTT). In general, DTE and DTT are exchangeable. DTE has pK values of 9.0 and 9.9 and DTT of 8.3 and 9.5, respectively. Both reagents function in the ionized state only. Therefore the reducing activity is highest in the pH range of 7.0 - 9.5. At lower pH values DTT is more active than DTE. The reducing activity is stopped by acidifying the pH (e. g. acetic acid at pH 3; ref. 3).

Proteins may oxidize during gel electrophoresis. This results in diffuse bands (decreased resolution) and a non-reproducible mobility (wrong estimation of molecular size). Reduction of the protein by DTE (0.25 M stock solution in water; 5 mM final concentration) and alkylation by iodoacetamide (0.25 M stock solution; 1 : 20 diluted in the final concentration) solves the problem (2).

DTNB see 5,5'-Dithio-bis(2-nitrobenzoic acid) *BioChemica* Page 291

DTPA see Diethylenetriaminopentaacetic acid p. A. Page 278

DTSP BioChemica

B

Lomant's reagent, DSP, Di((N-succinimidyl) 3,3'-dithiopropionate, 3,3'-Dithiodipropionic acid-di-(N-hydroxysuccinimide ester), Dithiobis(succinimidyl propionate)

 $C_{14}H_{16}N_2O_8S_2$
 $M = 404.42 \text{ g/mol}$
CAS-No.: 57757-57-0
HS-No.: 29309099

Storage: -20°C

Warning
H319-H315-H335
P261-P305+P351+P338

Melting point 117 - 119°C
Solubility (5 %; $CHCl_3$) clear

Specification:

Assay min. 98 %
Identity (NMR) complies

Order-No.	Quantity
A7938,0100	100 mg
A7938,0500	500 mg
A7938,0001	1 g

Literature: (1) Lomant, A.J. & Fairbanks, G. (1976) *J. Mol. Biol.* **104**, 243-261
(2) Waliczek, J. et al. (1989) *Biochemistry* **28**, 4099-4105
(3) Hobar, D. et al. (2001) *Phys. Chem. Chem. Phys.* **3**, 3437-3441
(4) Zalk, R. et al. (2005) *Biochem. J.* **386**, 73-83

Chemical probes of extended biological structures: Synthesis and properties of the cleavable protein cross-linking reagent [^{35}S]dithiobis(succinimidyl propionate). Comparative Cross-Linking Study on the 50S Ribosomal Subunit from *E. coli*. Immobilization of horseradish peroxidase on nanometre-scale domains of binary self-assembled monolayers formed from dithiobis-N-succinimidyl propionate and 1-tetradecanethiol on Au(111). Oligomeric states of the voltage-dependent anion channel and cytochrome c release from mitochondria.

Comment: Cross-linkers such as Dithiobis(succinimidyl propionate) (DTSP) are useful tools in the study of protein structures and interactions. This product is a so-called homobifunctional cross-linker with two identical reactive groups (N-hydroxysuccinimidyl). The succinimide group reacts with amines in aqueous and organic phases, leading to quantitative acylation. Der optimal pH value is in the neutral pH range. The cross-linker contains a cleavable disulfide linkage. For examples of use please refer to ref. 1-4. DTSP is soluble in DMF, acetone and chloroform.

DTSSP

B

3,3'-Dithiobis(sulfosuccinimidyl
propionate) disodium salt

C₁₄H₁₄N₂Na₂O₁₄S₄
M = 608.51 g/mol
HS-No.: 29309099

Storage: -20°C

hygroscopic
Warning
H319
P305+P351+P338



Solubility Water, DMF

Specification:

Assay min. 88 %
Identity (NMR) complies

Order-No.	Quantity
A7981,0025	25 mg
A7981,0050	50 mg
A7981,0100	100 mg

Comment: DTSSP is a water-soluble, amine-reactive homobifunctional cross-linker. It quickly reacts with primary amines in the pH range of 7 - 9. DTSSP is membrane-impermeable and the disulfide bond in the spacer arm is cleavable by e.g. TCEP (Tris(2-carboxyethyl)phosphine hydrochloride) and DTT (1,4-Dithiothreitol).

DTT



1,4-Dithio-DL-threitol, Cleland's
Reagent

C₄H₁₀O₂S₂
M = 154.25 g/mol
CAS-No.: 3483-12-3
HS-No.: 29309099
EC-No.: 222-468-7

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 3*
Warning
H315-H319-H302
P305+P351+P338-P302+P350

Melting point 42 - 44°C
Solubility (20°C) 1500 g/L (H₂O)

DTT Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (iodometr.) min. 99.5 %
pH (0.1 M; H₂O) 4.0 - 6.0 (20°C)
DTT (oxidized) max. 0.5 %

Water (K.F.) max. 0.5 %

A (1 cm/0.02 M in H₂O)
283 nm max. 0.05

Order-No.	Quantity
A2948,0005	5 g
A2948,0010	10 g
A2948,0025	25 g

DTT BioChemica

B

Specification:

Assay (iodometr.) min. 99.5 %
pH (0.1 M; H₂O; 20°C) 4.0 - 6.0
DTT (oxidized) max. 0.5 %
Water (K.F.) max. 0.5 %

A (1 cm/0.02 M in H₂O)
283 nm max. 0.05

Order-No.	Quantity
A1101,0005	5 g
A1101,0010	10 g
A1101,0025	25 g
A1101,0100	100 g

Literature: (1) Cleland, W.W. (1964) *Biochemistry* **3**, 480-482
(2) Zahler, W.L. & Cleland, W.W. (1968) *J. Biol. Chem.* **243**, 716-719
(3) Jocelyn, P.C. (1987) *Methods Enzymol.* **143**, 246-256
(4) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193
(5) Hart, R.A. et al. (1994) *Bio/Technology* **12**, 1113-1117

Dithiothreitol, a new protective reagent for SH groups.
A specific and sensitive assay for disulfides.
Chemical reduction of disulfides.
Preparation of plant extracts.
'Large scale *in situ* isolation' of periplasmic IGF-I from *E. coli*.

Comment: Dithiothreitol (DTT) is, like β-mercaptoethanol, a reducing reagent for proteins and protects the cysteine residues against oxidation. It may substitute for β-mercaptoethanol in almost all experiments at three to four fold lower concentrations. DTT is less toxic, its odor is less intensive and it doesn't form mixed disulfides like β-mercaptoethanol. DTT is water-soluble and stock solutions are prepared at 1 M. Store the solution aliquoted at -20°C and protect from heat during the experiment. Do not choose a to low concentration for the experiment, because it is readily oxidized by air. The working concentration ranges from 0.1 to 1 mM, but the preparation of plant extracts (5 mM; ref. 4) or for the 'large scale *in situ* isolation' of proteins after fermentation (10 mM; ref. 5) require higher concentrations. For the complete reduction of disulfides, the concentration might be significantly higher (3).
A more stable and odorless alternative to DTT is Tris(2-carboxy)ethylphosphine (A2233).

DTT - Solution (1 M) Molecular biology grade

B

HS-No.: 38220000

Storage: 2-8°C
under argon

Composition:

DTT 154.25 g/L

Specification:

DNases/RNases/Proteases
..... not detectable
pH (20°C; H₂O) 3.0 - 5.0

Order-No.	Quantity
A3668,0050	50 ml
A3668,0100	100 ml
A3668,0500	500 ml

dTTP-Na₃ see 2'-Deoxythymidine 5'-triphosphoric acid trisodium salt *BioChemica* Page 268

dTTP - Solution see 2'-Deoxythymidine 5'-triphosphoric acid - Solution (100 mM) *BioChemica* Page 268

Dulcitol see Dulcitol *BioChemica* Page 310

Dulcitol BioChemica

B

Galactitol, Dulcitol

C₆H₁₄O₆
M = 182.17 g/mol
CAS-No.: 608-66-2
HS-No.: 29054900
EC-No.: 210-165-2

Storage: RT
LGK: 10 - 13

WGK: 1

Melting point 185 - 188°C

Specification:

Assay min. 99 %
Heavy metals max. 0.001 %
Sulfated ash max. 0.15 %
Water (K.F.) max. 1 %

Order-No.	Quantity
A4379,0050	50 g
A4379,0100	100 g
A4379,0250	250 g

Dye Terminator Removal by Gel Filtration see DextraSEC 96W Page 271

E-64

B

trans-Epoxysuccinyl-L-leucylamido-(4-guanidino)butane, *N*-(*trans*-Epoxysuccinyl)-L-leucine-4-guanidinobutylamide

$C_{15}H_{27}N_5O_5$
 $M = 357.40 \text{ g/mol}$
CAS-No.: 66701-25-5
HS-No.: 29251995

Storage: -20°C

Specification:

Assay (TLC) min. 99 %
 $\alpha 20^\circ\text{C/D}$; 1 %, 0.1 M HCl ... +23° - +26°
Solubility (2 %; H_2O) clear, colorless

Order-No.	Quantity
A2157,0005	5 mg
A2157,0010	10 mg
A2157,0025	25 mg

- Literature:** (1) Barrett, A.J. *et al.* (1981) *Acta biol. med. germ.* **40**, 1513-1517
(2) Barrett, A.J. *et al.* (1982) *Biochem. J.* **201**, 189-198
(3) Sarin, A. *et al.* (1993) *J. Exp. Med.* **178**, 1693-1700
(4) Sarin, A. *et al.* (1994) *J. Immunol.* **153**, 862-872
(5) Hom, L.G. & Volkman, L.E. (1998) *BioTechniques* **25**, 18-20

E-64 and related epoxides as inhibitors of cysteine proteinases.
E-64 and its analogues as inhibitors of cysteine proteinases including cathepsins B, H and L.
Protease inhibitors selectively block T cell receptor-triggered programmed cell death in a murine T cell hybridoma and activated peripheral T cells.
Inhibition of activation-induced programmed cell death and restoration of defective immune response of HIV⁺ donors by cysteine protease inhibitors.
Preventing proteolytic artifacts in the baculovirus expression system.

Comment: E-64 is an irreversible inhibitor of different cysteine proteases (papain, bromelain, ficin, cathepsin B, H and L, tumor-cathepsin, calpain, V-CATH from *Autographa californica* M nucleopolyhedro virus (AcMNPV) and *Streptococcus*-protease). All enzymes are completely inhibited by a concentration of 10 - 30 μM within 30 minutes (1-5). E-64 and other protease inhibitors (e. g. diisopropylfluorophosphate and PMSF) are able to inhibit the programmed cell death, that is induced by activation of the T cell receptor in different cell lines of the immune system, not by blocking the signal transduction. The effect of dexamethason, which induces apoptosis as an antagonist of the T cell receptor, is enhanced (3, 4). If proteins are expressed in the baculo virus system with a functional *v-cath* gene, very often a proteolytic activity can be observed. This reduces the quality of the expressed protein significantly. The addition of E-64 to all reaction steps avoids the degradation almost completely (5).
Stability: E-64 is stable against reducing agents. Stock solutions have concentrations between 1 mM and 10 mM in DMSO or 50 % ethanol and are stable for several days, if stored at +4°C (2). Aliquots may be stored at -20°C for approx. one month.

EAFS - Solution

C

HS-No.: 38220000

Storage: RT

Warning
H302-H332-H335-H226-H312-H351-
H317-H315-H319
P280-P271-P305+P351+P338



Composition:

Acetic acid 100 % 50 mL/L
Ethanol 99 % 400 mL/L
Formaldehyde 37 % 100 mL/L
NaCl - Solution 0.9 % 450 mL/L

Order-No.	Quantity
A3204,1000	1 L
A3204,2500	2.5 L

Earle's balanced salts (EBSS)

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Earle's balanced salts (EBSS)

B

with 1.0 g/L D(+)-Glucose
with Phenol red
without Sodium hydrogen carbonate

Order-No.	Quantity
A1712,5000	5 L
A1712,9010	10 L
A1712,9050	50 L

Earle's balanced salts (EBSS)

B

with 1.0 g/L D(+)-Glucose
without Phenol red
without Sodium hydrogen carbonate

Order-No.	Quantity
A2039,5000	5 L
A2039,9010	10 L
A2039,9050	50 L

Earle's balanced salts (EBSS)

B

with 1.0 g/L D(+)-Glucose
without Calcium and Magnesium
without Sodium hydrogen carbonate

Order-No.	Quantity
A3026,5000	5 L
A3026,9010	10 L
A3026,9050	50 L

Earle's balanced salts (EBSS)

B

with 1.0 g/L D(+)-Glucose
without Calcium and Magnesium
without Phenol red
without Sodium hydrogen carbonate

Order-No.	Quantity
A3127,5000	5 L
A3127,9010	10 L
A3127,9050	50 L

Ebselen

B

2-Phenyl-1,2-benzisoselenazol-3(2H)-on

C₁₃H₉NOSe
M = 274.18 g/mol
 CAS-No.: 60940-34-3
 HS-No.: 29349990

Storage: 2-8°C

Class / PG: 6.1/III
 UN3283
 Danger
 H331-H373-H301-H410
 P273-P311-P501-P261-P301+P310



Specification:

Assay (TLC) min. 99 %
 Identity complies
 Melting point 178 - 181°C

Order-No.	Quantity
A4744,0025	25 mg
A4744,0100	100 mg

Literature: (1) Takasago, T. *et al.* (1997) *British J. Pharmacol.* **122**, 1251-1256

(2) Herin, G.A. *et al.* (2001) *J. Neurochem.* **78**, 1307-1314

(3) Zhao, R. *et al.* (2002) *Proc. Natl. Acad. Sci. U.S.A.* **99**, 8579-8584

Neuroprotective efficacy of ebselen, an anti-oxidant with anti-inflammatory actions, in a rodent model of permanent middle cerebral artery occlusion.

The neuroprotective agent ebselen modifies NMDA receptor function via the redox modulatory site.

Ebselen: A substrate for human thioredoxin reductase strongly stimulates its hydroperoxide reductase activity and a superfast thioredoxin oxidant.

Comment: Ebselen is a Selenium-based anti-inflammatory, antioxidant compound, shown to be a neuroprotective agent and an inhibitor of free radical induced apoptosis. It inhibits protein kinase C, NADPH, 5-lipoxygenase, cyclooxygenase (COX) and NADPH oxidase and the oxidative modifications of low density lipoproteins (LDL). Ebselen is soluble in DMSO.

[E.C. 1.1.1.-] see D-Mandelate dehydrogenase, bacterial Technical grade Page 513
 [E.C. 1.1.1.17] see Myeloperoxidase, human Page 555
 [E.C. 1.1.1.27] see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1) Page 475
 [E.C. 1.1.3.11.12] see Lipoxidase from soybean Page 491
 [E.C. 1.1.3.4] see Glucose Oxidase from *Aspergillus niger* Page 378
 [E.C. 1.4.1.9] see L-Leucine dehydrogenase, bacterial Technical grade Page 487
 [E.C. 2.7.7.7] see Taq DNA Polymerase DNA-free Page 793
 [E.C. 3.1.1.3] see Lipase from porcine pancreas Page 490
 [E.C. 3.1.21.1] see DNase I Page 305
 [E.C. 3.1.3.1] see Phosphatase, alkaline from calf intestine (CIP) Page 623
 [E.C. 3.2.1.17] see Lysozyme Page 500
 [E.C. 3.2.1.35] see Hyaluronidase Page 410
 [E.C. 3.4.21.1] see α -Chymotrypsin Page 211
 [E.C. 3.4.21.14] see Proteinase K, recombinant Page 673
 [E.C. 3.4.21.4] see Trypsin from bovine pancreas Page 842
 [E.C. 3.4.22.32] see Bromelain from pineapple *BioChemica* Page 158
 [E.C. 3.4.23.1] see Pepsin Page 603
 [E.C. 4.1.2.10] see Hydroxynitrile Lyase, plant Technical grade Page 427

Echinacosid HPLC grade

B

from *Echinacea pallida*

C₃₅H₄₆O₂₀
M = 786.70 g/mol
 CAS-No.: 82854-37-3
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A6751,0010	10 mg
A6751,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Ectoïne

B

THP B, (S)-2-Methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid

C₆H₁₀N₂O₂
M = 142.16 g/mol
 CAS-No.: 96702-03-3
 HS-No.: 29335995

Storage: RT

WGK: 1
 Warning
 H315-H335-H319
 P305+P351+P338-P280



Specification:

Assay min. 95 %
 α 20°C/D 139° - 145°
 Endotoxins max. 3000 EU/g
 Heavy metals (as Pb) max. 0.001 %

Sulfated ash max. 0.2 %
 pH (2 %; H₂O) 6.0 - 8.0
 Hydroxyectoïne (HPLC) max. 5 %
 Water (K.F.) max. 0.5 %

Chloride max. 0.05 %

Order-No.	Quantity
A5814,0001	1 g
A5814,0010	10 g
A5814,0025	25 g

EDAC see EDC hydrochloride *BioChemica* Page 313

EDC hydrochloride *BioChemica*

B

EDAC, *N*-Ethyl-*N'*-(3-dimethylaminopropyl)-carbodiimide hydrochloride

$C_8H_{17}N_3 \cdot HCl$
 $M = 191.70 \text{ g/mol}$
 CAS-No.: 25952-53-8
 HS-No.: 29252900
 EC-No.: 247-361-2

Storage: -20°C
 Shipment: RT
 LGK: 10 - 13

Danger
 H315-H335-H318
 P261-P305+P351+P338-P280



Melting range 112 - 115°C

Specification:

Assay (titr.) min. 99%

Order-No.	Quantity
A1438,0001	1 g
A1438,0005	5 g
A1438,0025	25 g

Literature: (1) Previero, A. *et al.* (1973) *FEBS Lett.* **33**, 135-138

(2) Thomas, J.O. *et al.* (1978) *J. Mol. Biol.* **123**, 149-161

(3) Staros, J.V. *et al.* (1986) *Anal. Biochem.* **156**, 220-222

(4) Verburg, J.G. *et al.* (1992) *J. Biol. Chem.* **267**, 3886-3893

(5) Chazot, P.L. *et al.* (1993) *Biochem. Pharmacol.* **45**, 605-610

Solid phase sequential analysis: specific linking of acidic peptides by their carboxyl ends to insoluble resins.

Altered arrangement of the DNA in injection-defective Lambda bacteriophage.

N-Hydroxysulfosuccinimide promotes the carbodiimide mediated coupling in aqueous solutions.

Selective modification of tyrosine residues in the active center of chitinase from *Zea mays*.

Examination of the magnesium ion binding site of the *N*-methyl-D-aspartate receptor.

Comment: Water-soluble carbodiimides are reagents for coupling and conjugation experiments, e. g. the binding of a peptide immunogen to a carrier protein. Thereby, carbodiimides catalyse the formation of an amide bond between carboxylic acid and amine under formation of an intermediate *O*-acylurea. If this reaction is performed in aqueous solutions, the addition of *N*-hydroxysulfosuccinimide may improve the yield, because the hydrolyses of the intermediate is reduced (3). EDC is applied in concentrations of 10 - 100 mM.

Edetic acid see EDTA Page 313

EDTA

Ca-binding (pH 11) ... ~340 mg $CaCO_3$ /g
 Melting point 220°C (dec.)
 Solubility (20°C) 0.5 g/L (H_2O)

$C_{10}H_{16}N_2O_8$
 $M = 292.25 \text{ g/mol}$
 CAS-No.: 60-00-4
 HS-No.: 29224985
 EC-No.: 200-449-4

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 2
 Warning
 H319
 P305+P351+P338



EDTA Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable

Assay (titr.) min. 99 %

Appearance white to off-white powder

pH (1 %; H_2O ; 20°C) ... approx. 2.5
 Water (K.F.) max. 0.25 %
 Fe max. 0.001 %
 Pb max. 0.001 %

Order-No.	Quantity
A5097,0250	250 g
A5097,0500	500 g
A5097,1000	1 kg

EDTA *BioChemica*

B

Edetic acid, Ethylenedinitrilotetraacetic acid, Ethylenediaminetetraacetic acid

Specification:

Assay (titr.) min. 99 %

Heavy metals (as Pb) max. 0.001 %

Insol. matter (0.1 M; 1 M NaOH) complies

pH (1 %; H_2O ; 25°C) approx. 2.5

Loss on drying max. 0.25 %
 Fe max. 0.001 %

A (1cm/1 M in H_2O)
 260 nm max. 1.5
 280 nm max. 0.3

Order-No.	Quantity
A1103,0250	250 g
A1103,0500	500 g
A1103,1000	1 kg

Comment: EDTA is a chelator of calcium, magnesium and zinc ions and therefore may inhibit metallo proteases. It complexes the zinc ion of the active center of the metallo proteases, but in addition it also may influence other biological processes depending on metal ions. The effective concentration is approx. 1 mM. Stock solutions are prepared in water (0.5 M EDTA, pH 8.0 or 8.5). The free acid of EDTA will not dissolve unless the trisodium salt is formed. Therefore, to dissolve the free acid EDTA the molar ratio EDTA : NaOH has to become 3 : 1.

EDTA p. A.

C

Specification:

Assay (titr.) min. 99 %

pH (1 %; H_2O ; 25°C) approx. 2.5

Loss on drying max. 0.25 %

Fe max. 0.001 %

Pb max. 0.001 %

Order-No.	Quantity
A3562,0250	250 g
A3562,0500	500 g
A3562,1000	1 kg
A3562,10006	6 x 1 kg
A3562,5000	5 kg

EDTA calcium magnesium salt pure

B

Ethylenediaminetetraacetic acid calcium magnesium salt

$C_{10}H_{12}N_2O_8CaMg$
 $M = 388.64 \text{ g/mol}$
 HS-No.: 29224985

Storage: RT
 LGK: 10 - 13
 Disposal: 3

P260-P262

Specification:

Assay (titr., anhydr. subst.) min. 95 %

Solubility (1 %; H_2O) clear, colorless

Water (K.F.) max. 15 %

Order-No.	Quantity
A1895,0025	25 g
A1895,0100	100 g
A1895,0500	500 g

EDTA dipotassium salt dihydrate *BioChemica*

B

Ethylenedinitrilotetraacetic acid
dipotassium salt dihydrate,
Ethylenediaminetetraacetic acid
dipotassium salt dihydrate

$C_{10}H_{14}K_2N_2O_8 \cdot 2H_2O$
 $M = 404.47 \text{ g/mol}$
CAS-No.: 25102-12-9
HS-No.: 29224985
EC-No.: 217-895-0

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

Assay (titr.) min. 98 %
Heavy metals (as Pb) max. 0.005 %
Insoluble matter max. 0.01 %
pH (5 %; H_2O) 4.0 - 6.0 (25°C)

Chloride max. 0.005 %
Sulfate max. 0.005 %
Ca max. 0.001 %
Fe max. 0.001 %

Na max. 0.1 %
Pb max. 0.001 %

Order-No.

Quantity

A4220,0100 100 g
A4220,0500 500 g
A4220,1000 1 kg

EDTA disodium salt dihydrate

Ethylenedinitrilotetraacetic acid
disodium salt dihydrate,
Ethylenediaminetetraacetic acid
disodium salt dihydrate

$C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
 $M = 372.24 \text{ g/mol}$
CAS-No.: 6381-92-6
HS-No.: 29224985
EC-No.: 205-358-3

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 2

Ca-binding (pH 11) ... approx. 265 mg
 $CaCO_3/g$
Solubility (20°C) 100 g/L (H_2O)

EDTA disodium salt dihydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Loss on drying 9.0 - 10.0 %
pH (5 %; H_2O ; 20°C) 4 - 5
Chloride max. 0.005 %
Sulfate max. 0.01 %

As max. 0.0005 %
Cu max. 0.001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.

Quantity

A2937,0100 100 g
A2937,0250 250 g
A2937,0500 500 g
A2937,1000 1 kg
A2937,10006 6 x 1 kg

EDTA disodium salt dihydrate *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (1 %; H_2O ; 25°C) 4.0 - 5.0
Loss on drying max. 10 %
Chloride max. 0.005 %

Sulfate max. 0.01 %

A(1cm/0.1 M in H_2O)
260 nm max. 0.2
280 nm max. 0.05

Order-No.

Quantity

A1104,0250 250 g
A1104,0500 500 g
A1104,1000 1 kg
A1104,10006 6 x 1 kg
A1104,5000 5 kg

Comment: To prepare a 0.5 M solution add 186.1 g EDTA disodium salt dihydrate to 800 ml of water. Stir vigorously on a magnetic stirrer. Adjust the pH to 8.0 with NaOH. Dispense into aliquots and sterilize by autoclaving. The disodium salt of EDTA will not go into solution until the pH of the solution is adjusted to approximately 8.0 by the addition of NaOH.
EDTA is a component of many important buffers, like the electrophoresis buffer TAE (A1416 and A1691) and TBE (A1417 and A0972) or TE (A0973), the buffer of choice for dissolving nucleic acids.

EDTA disodium salt dihydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
pH (1 %; H_2O) 4.0 - 5.0 (25°C)
Loss on drying max. 10 %
Chloride max. 0.005 %
Sulfate max. 0.01 %
As max. 0.0005 %
Cu max. 0.001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.

Quantity

A3553,0250 250 g
A3553,0500 500 g
A3553,1000 1 kg
A3553,10006 6 x 1 kg
A3553,5000 5 kg
A3553,9010 10 kg
A3553,9025 25 kg

EDTA disodium salt dihydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 101.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %
Identity complies
Loss on drying 8.7 - 11.4 %
pH (5 %; H_2O) 4.0 - 5.5 (25°C)
Nitrioltriacetic acid max. 0.1 %
Ca complies
Fe max. 0.008 %

Order-No.

Quantity

A3234,0250 250 g
A3234,0500 500 g
A3234,1000 1 kg
A3234,10006 6 x 1 kg
A3234,5000 5 kg
A3234,9010 10 kg
A3234,9025 25 kg

EDTA disodium salt - Solution (31.5 g/L)

B

HS-No.: 29224985

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Composition:

EDTA · Na₂ · 2H₂O 31.5 g/L

Specification:

pH (20°C) 4 - 5

Order-No.	Quantity
A6107,1000	1 L
A6107,5000CT	5 L
A6107,5000PE	5 L

EDTA disodium salt - Standard volumetric solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

EDTA disodium salt - Standard volumetric Solution (0.2 M)

C

0.2 mol/L (0.2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2540,0500	500 ml
A2540,1000	1 L
A2540,5000CT	5 L
A2540,5000PE	5 L

EDTA disodium salt - Standard volumetric solution (0.1 M) contains 0.1 mol NaOH

C

0.1 mol/L (0.1 N Solution)

for complexometrical purposes

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3333,1000	1 L
A3333,10006	6 x 1 L
A3333,5000CT	5 L
A3333,5000PE	5 L

EDTA disodium salt - Standard volumetric Solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1505,0500	500 ml
A1505,1000	1 L
A1505,10006	6 x 1 L
A1505,5000CT	5 L
A1505,5000PE	5 L
A1505,9010CT	10 L
A1505,9010PE	10 L

EDTA disodium salt - Standard volumetric Solution (0.05 M)

C

0.05 mol/L (0.05 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2808,0500	500 ml
A2808,1000	1 L
A2808,10006	6 x 1 L
A2808,5000CT	5 L
A2808,5000PE	5 L

EDTA disodium salt - Standard volumetric solution (0.02 M) for metal titration

C

0.02 mol/L (0.02 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3321,0500	500 ml
A3321,1000	1 L
A3321,10006	6 x 1 L
A3321,5000CT	5 L
A3321,5000PE	5 L

EDTA disodium salt - Standard volumetric Solution (0.01783 M)

C

0.01783 mol/L (0.01783 N Solution)

1ml complies 1°dH

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2769,1000	1 L
A2769,10006	6 x 1 L
A2769,5000CT	5 L
A2769,5000PE	5 L
A2769,9010CT	10 L
A2769,9010PE	10 L

EDTA disodium salt - Standard volumetric Solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2098,0500	500 ml
A2098,1000	1 L
A2098,10006	6 x 1 L
A2098,5000CT	5 L
A2098,5000PE	5 L

EDTA disodium salt - Standard volumetric solution (0.005 M) for metal titration

C

0.005 mol/L (0.005 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3313,0500	500 ml
A3313,1000	1 L
A3313,5000CT	5 L
A3313,5000PE	5 L

EDTA - KOH - Solution

C

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 3

Class / PG: 8/II
UN3266
WGK: 1
Danger
H314
P280-P313-P305+P351+P338

Composition:

EDTA disodium salt (A3553) 10 g/L
KOH (A1575) 25 g/L

Order-No.	Quantity
A3306,1000	1 L
A3306,5000CT	5 L
A3306,5000PE	5 L

EDTA - NaOH - Solution

C

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 3

Class / PG: 8/II
UN3266
WGK: 1
Danger
H314
P305+P351+P338-P313-P280

Composition:

EDTA · Na₂ (A3553) 160 g/L
NaOH (A1551) 160 g/L

Order-No.	Quantity
A3350,1000	1 L
A3350,5000CT	5 L
A3350,5000PE	5 L

EDTA - Solution pH 8.0 (0.5 M)

filtered, autoclaved, sterile

HS-No.: 38220000
EC-No.: 205-358-3

Storage: RT
LGK: 10 - 13

WGK: 1

EDTA - Solution pH 8.0 (0.5 M) Molecular biology grade

B

Composition:

EDTA · Na₂ · 2H₂O 186.12 g/L
NaOH (10 M) approx. 50 ml/L

Specification:

DNases/RNases/Proteases not detectable
pH (20°C) 8.0 ± 0.1

Order-No.	Quantity
A4892,0100	100 ml
A4892,0500	500 ml
A4892,1000	1 L

EDTA - Solution pH 8.0 (0.5 M)

B

Composition:

EDTA · Na₂ · 2H₂O 186.1 g/L
NaOH (10 M) approx. 50 ml/L

Specification:

pH (20°C) 8.0 ± 0.1

Order-No.	Quantity
A3145,0500	500 ml
A3145,1000	1 L

EDTA - Solution pH 8.0 (0.25 M)

B

Composition:	Specification:
EDTA · Na ₂ · 2H ₂ O 93.06 g/L	HS-No.: 38220000 EC-No.: 205-358-3
	Storage: RT LGK: 10 - 13
	WGK: 1
	pH (20°C; adjusted with NaOH) 8.0 ± 0.1

Order-No.	Quantity
A4706,0500	500 ml
A4706,1000	1 L

EDTA tetrasodium salt dihydrate

<i>Ethylenediaminetetraacetic acid</i> <i>tetrasodium salt dihydrate</i> , <i>Ethylenedinitriлотetraacetic acid</i> <i>tetrasodium salt dihydrate</i>	C ₁₀ H ₁₂ N ₂ Na ₄ O ₈ · 2H ₂ O M = 416.21 g/mol CAS-No.: 10378-23-1 HS-No.: 29224985 EC-No.: 200-573-9

Storage: RT LGK: 10 - 13 Disposal: 3

WGK: 2 Warning H319-H335-H315 P261-P305+P351+P338



Ca-binding (pH 11) ~225 mg CaCO ₃ / g
Melting point 400°C (dec.)
Solubility (20°C) 1000 g/L (H ₂ O)

EDTA tetrasodium salt dihydrate BioChemica

B

Specification:	A (1cm/0.1 M in H ₂ O)
Assay (titr.) min. 99 %	260 nm max. 1.5
Heavy metals (as Pb) max. 0.001 %	280 nm max. 0.2
pH (1 %; H ₂ O; 25°C) approx. 11.0	
Loss on drying 7 - 10 %	

Order-No.	Quantity
A1105,0500	500 g
A1105,1000	1 kg
A1105,5000	5 kg

EDTA tetrasodium salt dihydrate p. A.

C

Specification:
Assay (titr.) min. 99 %
pH (1 %; H ₂ O) approx. 11.0 (25°C)
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A3613,0500	500 g
A3613,1000	1 kg
A3613,10006	6 x 1 kg
A3613,5000	5 kg

EDTA tripotassium salt dihydrate pure

C

<i>Ethylenedinitriлотetraacetic acid</i> <i>tripotassium salt dihydrate</i> , <i>Ethylenediaminetetraacetic acid</i> <i>tripotassium salt dihydrate</i>	C ₁₀ H ₁₃ K ₃ N ₂ O ₈ · 2H ₂ O M = 442.56 g/mol CAS-No.: 65501-24-8 HS-No.: 29224985 EC-No.: 241-543-5

Storage: RT LGK: 10 - 13 Disposal: 3

WGK: 2 Warning H319 P305+P351+P338



Specification:	Ca max. 0.0005 %
Assay (titr.) min. 99 %	Fe max. 0.0005 %
H ₂ O-insoluble matter max. 0.01 %	Na max. 0.3 %
Heavy metals (as Pb) max. 0.0005 %	
pH (5 %; H ₂ O; 25°C) 7.5 - 9.0	

Order-No.	Quantity
A5603,0100	100 g
A5603,0500	500 g
A5603,1000	1 kg

rHu EGF



B

<i>recombinant Human Epidermal Growth</i> <i>Factor</i> lyophilized without additives from <i>E. coli</i>	M = 6.22 kDa HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8327,0100	100 µg
A8327,0500	500 µg
A8327,1000	1 mg

Comment: A neurotrophic factor that promotes the survival of various neuronal cell types and may play an important role in the injury response in the nervous system. Recombinant Human Epidermal Growth Factor produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 53 amino acids and having a molecular mass of 6.22 kDa.

rM EGF



B

recombinant Mouse Epidermal Growth Factor
lyophilized without additives
from *E. coli*

M = 6 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8225,0100	100 µg
A8225,0500	500 µg
A8225,1000	1 mg

Comment: Recombinant Mouse Epidermal Growth Factor has an effect on the differentiation of specific cells *in vivo* and is a potent mitogenic factor for a variety of cultured cells of both ectodermal and mesodermal origin. EGF stimulates the growth of various epidermal and epithelial tissues *in vivo* and *in vitro* and of some fibroblasts in cell culture. Recombinant Mouse Epidermal Growth Factor produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 53 amino acids including 3 intramolecular disulfide-bonds and having a molecular mass of 6 kDa.

Strle Egg Yolk Polymyxin (PREP) Emulsion see Supplements for Microbiological Media Page 786

EGS

B

Ethylene glycol bis(succinimidyl succinate)

$C_{18}H_{20}N_2O_{12}$
M = 456.36 g/mol
CAS-No.: 70539-42-3
HS-No.: 29280090

Storage: -20°C

Melting point 128 - 132°C

Specification:

Assay min. 98 %
Identity (NMR) complies

Order-No.	Quantity
A7846,0100	100 mg
A7846,0500	500 mg
A7846,0001	1 g

Comment: EGS is a homobifunctional, amine-reactive cross-linker. The spacer arm is cleavable using hydroxylamine at pH 8.5.

EGTA Molecular biology grade

B

Ethylenedioxy-bis-(ethylenenitrilo)-tetraacetic acid, Ethylene glycol-bis-(β-aminoethyl ether)-N,N,N',N'-tetraacetic acid

$C_{14}H_{24}N_2O_{10}$
M = 380.35 g/mol
CAS-No.: 67-42-5
HS-No.: 29225000
EC-No.: 200-651-2

Storage: RT
LGK: 10 - 13

Melting point 240°C (dec.)

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Residue on ignition max. 0.1 %

Loss on drying max. 1.0 %
Fe max. 0.001 %

Order-No.	Quantity
A0878,0005	5 g
A0878,0025	25 g
A0878,0100	100 g

Literature: (1) Berman, M.C. (1982) *J. Biol. Chem.* **257**, 1953-1957

(2) Fuller, R.S. *et al.* (1989) *Proc. Natl. Acad. Sci. USA* **86**, 1434-1438

(3) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

(4) Liu, D. & Wu, R. (1999) *BioTechniques* **26**, 258-261

Stimulation of calcium transport of sarcoplasmic reticulum vesicles by the calcium complex of ethylene glycol bis-(β-aminoethyl ether)-N,N'-tetraacetic acid.
Yeast prohormone processing enzyme (KEX2 gene product) is a Ca²⁺-dependent serine protease.
Preparation of extracts from plants.
Inhibition of DNase activity in plant nuclei with L-lysine and EGTA.

Comment: EGTA is a calcium specific chelator and can be used in the presence of Mg²⁺, since its affinity is 1000 times lower for Mg²⁺. EGTA inhibits metallo proteases at a concentration of 1 to 10 mM and is part of many inhibitor cocktails (3). The DNase from plant nuclei is efficiently inhibited by a combination of 160 mM L-lysine and 4 mM EGTA, enabling to isolate DNA fragments with sizes of mega bases (4).
Solutions of EGTA are prepared with 1 g EGTA in 10 ml of 1 M NaOH and filled up to 100 with ddH₂O (corresponds to a 26,29 mM solution).

rHu EG-VEGF



B

recombinant Human Endocrine Gland-Vascular Endothelial Growth Factor
lyophilized without additives
from *E. coli*

M = 9.6 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8315,0005	5 µg
A8315,0020	20 µg
A8315,0100	100 µg

Comment: Recombinant Human Endocrine Gland-Derived Vascular Endothelial Growth Factor (rHu EG-VEGF) is selectively expressed in steroidogenic glands and promotes the growth of endocrine gland endothelium. The identification of tissue-selective angiogenic factors raises the possibility that other secreted molecules in this class exist. Consistent with such an expression pattern, the human EG-VEGF gene promoter has a potential binding site for steroidogenic factor-1, a pivotal element for steroidogenic-specific transcription. In the human ovary, the expression of EG-VEGF is temporally and spatially complementary to the expression of VEGF-A, both in the follicular and in the luteal phase, suggesting complementary and coordinated roles of these molecules in ovarian angiogenesis. Also, EG-VEGF expression correlates with vascularity in the polycystic ovary syndrome, a leading cause of infertility. rHu EG-VEGF produced in *E. coli* is a single, non-glycosylated, polypeptide chain that contains 86 amino acids and has a molecular mass of 9.6 kDa.

Ehrlich's reagent see 4-Dimethylaminobenzaldehyde Reag. Ph. Eur. Page 283

Ehrlich's Reagent

C

HS-No.: 38220000

Storage: RT

Class / PG: 8/III
UN1789
Warning
H319-H335-H315
P302+P352-P305+P351+P338



Composition:

4-Dimethylaminobenzaldehyde
..... 20 g/l
Hydrochloric acid 37 % approx. 530 g/L

Order-No.	Quantity
A1094,0100	100 ml
A1094,0250	250 ml
A1094,1000	1 L
A1094,10006	6 x 1 L

Elactocin see Leptomycin B BioChemica Page 486

Elastase, neutrophil Grade 2, human

B

[EC 3.4.21.37]

supplied liquid in 50 mM sodium
acetate, pH 5.5, 600 mM NaCl
from human neutrophil

CAS-No.: 9004-06-2

HS-No.: 35079090

Storage: 2-8°C

Specification:

Activity (37°C) min. 10 U/ml
Protein approx. 1 mg/ml

Spec. Activity min. 10 U/mg
Protein

Order-No.	Quantity
A6959,0100	100 µg
A6959,0001	1 mg

Comment: Unit Definition: One unit will hydrolyze one micromole of Methoxy succinyl-alanine-alanine-proline-valine-p-nitroanilide per minute at 37°C and pH 7.5.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Elastase Inhibitor I



B

Boc-AAA-NHO-Bz, PPE - Inhibitor, Boc-
Ala-Ala-Ala-NHO-Bz

$C_{21}H_{30}N_4O_7$
 $M = 450.5$ g/mol
HS-No.: 38220000

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8730,0001	1 mg
A8730,0005	5 mg

Electrophoresis Size Marker/Standard DNA

HS-No.: 29349990

Storage: -20°C

AppliChem offers DNA size marker in two different grades. There are *ready-to-use* solutions and lyophilised markers. The quality of the lyophilised size markers differs considerably from products offered by most other manufacturers thanks to the elaborate manufacturing method, which also fulfils the highest quality requirements! The digested DNA is not simply precipitated and resuspended, but also phenol-extracted, desalted and lyophilised. This guarantees the extremely long shelf-life of approximately 5 years without any loss of quality. The lyophilised product is stable for many weeks even at ambient temperatures. A separate loading buffer is supplied with all lyophilised markers. Not only the price should therefore be compared.

DNA Ladder 100 bp (lyophilised)

B

DNA size standard for medium-sized
fragments and PCR products

- Number of bands: 11
- supplied with loading buffer (1X)
- Fragment sizes in bp: 1000; 900; 800; 700; 600; 500 (x2); 400; 300; 200; 150; 100
- recommended loadings: 0.4 - 0.8 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A3470,0050	50 µg

Comment: The fragments of this size marker occur in equimolar proportions, i.e. also all possible marking positions on the terminal *EcoR* I generated recessed ends. The band mass increases with fragment length. The DNA is deproteinized and lyophilized. This marker is particularly suitable for comparison with medium-sized DNA fragments and PCR products. The 500 base pair band mass has been doubled for easier orientation on 1.5 - 2.0 % agarose gels. The size and mass of plasmid insertions or PCR products can be determined precisely in the range up to 1000 base pairs at intervals of 100 base pairs. An additional band with 150 base pairs has been included for the determination of smaller PCR products. The best results are achieved after a migration distance of approx. 60 - 80 mm on a 1.5 % agarose gel. Each lane of a normal sized agarose gel (approx. 80 ml) should be loaded with approx. 0.4 - 0.8 µg of marker. Loading buffer is supplied separately.

Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilized form is stable even for weeks at ambient temperature!

DNA Ladder 100 bp

B

- Number of bands: 10
- Fragment sizes in bp: 1000, 900, 800, 700, 600, 500 (x2), 400, 300, 200, 100

Specification:

Concentration 0.2 mg/ml

Order-No.	Quantity
A5191,0005	50 µg
A5191,0025	250 µg

Comment: This DNA Ladder is ideal for determining the size of double-stranded DNA ranging from 100 to 1,000 base pairs. The ladder consists of ten fragments that range in size from 100 to 1,000 bp in 100 bp increments. The 500 bp fragment is present at increased intensity to allow easy identification. All fragments are blunt-ended. The marker will be supplied in storage buffer (10 mM Tris · HCl (pH 7.8), 10 mM NaCl, 1 mM EDTA) in a concentration of 0.2 mg/ml. The recommended amount of size marker to load on the gel is 0.4 - 0.6 µg (2 - 3 µl) per lane.

DNA Ladder 100 bp equalized (lyophilised)

B

DNA size standard for medium-sized fragments and PCR products

- Number of bands: 11
- supplied with loading buffer (1X)
- Fragment sizes in bp: 1000; 900; 800; 700; 600; 500 (x3); 400; 300; 200; 150; 100
- recommended loadings: 0.3 - 0.5 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A3302,0020	20 µg

Comment: With this marker, the band mass of the larger fragments have been reduced and have been reinforced for the smaller fragments (as compared to marker A3470) by up to a factor of 4.5. The result is an even appearance in intensity of the individual bands. The mol number of the fragments decreases from the larger to the smaller fragments, as do the possible marking positions on the terminal *EcoRI* generated recessed ends. The 500 bp band, with an increase in mass of a factor of 3, enables rapid orientation on 1.5 - 2.0 % agarose gels. Thanks to the even distribution, a shorter migration distance is needed for the larger fragments, in order to achieve a clear distinction between the bands. The best results are achieved after a migration distance of approx. 60 - 80 mm on 2.2 - 2.5 % agarose gels. Each lane of a normal sized agarose gel (approx. 80 ml) should be loaded with approx. 0.3 - 0.5 µg of marker. The equalized 100 bp ladder is therefore very economical in use. Loading buffer is supplied separately.

DNA Ladder 100 bp plus

B

- Number of bands: 11
- Fragment sizes in bp: 1500, 1000 (x2), 900, 800, 700, 600, 500 (x2), 400, 300, 200, 100

Specification:

Concentration 0.2 mg/ml

Order-No.	Quantity
A5216,0005	50 µg
A5216,0025	250 µg

Comment: This 100 bp DNA Ladder is ideal for determining the size of double-stranded DNA from 100 to 1,500 base pairs. The ladder consists of ten fragments ranging in size from 100 - 1000 bp in 100 bp increments plus one additional 1500 bp fragment. The 500 bp and 1000 bp fragment are present at increased intensity to allow easier identification. All fragments are blunt-ended. The fragment sizes (in base pairs) are 1500, 1000x2, 900, 800, 700, 600, 500 x2, 400, 300, 200, 100. The DNA ladder is supplied at 0.2 mg/ml in 10 mM Tris · HCl (pH 8.0), 1.0 mM EDTA. The recommended amount of size marker to load on the gel is 0.4 - 0.6 µg (2 - 3 µl) per lane.

DNA Ladder Mix 100 - 5000 (lyophilised)

B

DNA size standard for medium-sized fragments and plasmids

- Number of bands: 17
- supplied with loading buffer (1X)
- Fragment sizes in bp: 5000; 4000; 3000; 2500; 2000; 1500; 1000; 900; 800; 700; 600; 500 (x2); 400; 300; 200; 150; 100
- recommended loadings: 0.5 - 0.8 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A3660,0050	50 µg

Comment: The 100 bp ladder (A3470) has been extended with fragments in the range of 1500 - 5000 bp. The larger fragments represent 40 % of the mass, allowing a simple orientation above 1500 bp in an 1.2 - 1.5 % agarose gel. Besides small and large plasmid insertions or PCR-products, plasmid vectors can be determined in terms of their mass and size. Optimal results will be achieved after a distance of 70 - 90 mm in agarose gels and a loading mass of 0.5 - 0.8 µg per lane in normal-sized gels (EtBr-staining). Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Ladder 250 bp (lyophilised)

B

DNA size standard for plasmids and their insertions

- Number of bands: 16
- supplied with loading buffer (1X)
- Fragment sizes in bp: 8000; 6000; 5000; 4000; 3000; 2750; 2500 (x3); 2250; 2000; 1750; 1500 (x3); 1250; 1000; 750; 500; 250
- recommended loadings: 0.4 - 0.8 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A3982,0050	50 µg

Comment: This 250 bp DNA Ladder includes two intensified bands at 2500 and 1500 base pairs. All fragments have terminal *Eco*RI restriction sites. The DNA has been deproteinized and lyophilized. This guarantees a better stability. The 250 bp ladder allows an easy identification of plasmid inserts in the range of 250 to 3000 bp and the identification of vector bands in the range above 3000 bp. The bands between 250 and 1000 bp have been intensified with respect to their mass and the fragments above 3000 bp have been reduced. This procedure results in an optimal resolution after a gel run (1.5 % agarose) of 60 to 80 mm only and a low loading mass of approximately 0.6 µg per lane. Prevent repeated freezing and thawing (>20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Ladder 250 bp plus (lyophilised)



B

DNA size standard for genomic DNA, plasmids and their insertions

- Number of bands: 15
- supplied with loading buffer (1X)
- Fragment sizes in bp: 12000; 10000; 8000; 6000; 5000; 4000; 3000; 2000; 1750; 1500; 1250; 1000; 750; 500; 250
- recommended loadings: 0.8 - 1.0 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A8640,0050	50 µg

Comment: The DNA Ladder 250 bp plus is intended for use in the sizing of DNA fragments during cloning and of genomic DNA. By combining two groups of fragments differing in the fragment size range, smaller fragments (250 - 2000 bp) as well as plasmid vectors and fragment of genomic DNA (3000 - 12000 bp) may be sized on the same gel. The mass of the larger fragments is reduced to achieve a better separation on short distances of 70 - 90 mm only. The terminal *Eco* RI restriction sites allow for an efficient labeling of the fragments. Best results are achieved by loading 0.8 - 1.0 µg/lane on a 1.2 % agarose gel (standard minigel size). The DNA is supplied deproteinized and lyophilized.

DNA Ladder 1 kb (lyophilised)

B

DNA Size Standard for Gel Electrophoresis, Size Standard for Gel Electrophoresis **DNA**
Universal DNA size marker for gel electrophoresis of medium-sized DNA fragments

- Number of bands: 11
- supplied with loading buffer (1X)
- Fragment sizes in bp: 10000; 8000; 6000; 5000; 4000; 3000; 2500; 2000; 1500; 1000; 500
- recommended loadings: 0.4 - 0.8 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A2667,0050	50 µg
A2667,0200	200 µg

Comment: The size of medium-sized plasmids and fragments can be determined with 11 DNA bands between 10,000 and 500 base pairs. Unlike the equimolar distribution of the bands in other DNA markers and the long migration distance necessary with these for the separation of large fragments, the mass of the larger bands of the 1 kbp ladder has been reduced. This permits relatively short separation distances for a 1 kbp DNA ladder (approx. 70 mm on 1.2 % agarose gel) and means that it is very economical in use (0.4 - 0.8 µg per lane) on normal sized gels. Loading buffer is supplied separately. The fragments have terminal *Eco*R I generated recessed ends. The DNA is deproteinized and lyophilized. Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Ladder 1 kb

B

- Number of bands: 15
- Fragment sizes in kb: 10.0, 8.0, 6.0, 5.0, 4.0, 3.0 (x2), 2.5, 2.0, 1.5, 1.0 (x2), 0.75, 0.5, 0.25

Specification:
Concentration 0.2 mg/ml

Order-No.	Quantity
A5207,0005	50 µg
A5207,0025	250 µg

Comment: This 1kb DNA Ladder is a convenient marker for determining the size of double-stranded DNA from 250 to 10,000 base pairs. The ladder consists of 15 fragments ranging in size from 250 to 10,000 base pairs. The 1,000 bp and 3,000 bp fragments have an increased intensity relative to the other bands on ethidium bromide-stained agarose gels and serve as reference indicators. All fragments are blunt-ended. The exact fragment sizes (in kb) are 10.0, 8.0, 6.0, 5.0, 4.0, 3.0 x 2, 2.5, 2.0, 1.5, 1.0 x 2, 0.75, 0.5, 0.25. The standard will be supplied in the storage buffer containing 10 mM Tris · HCl (pH 7.8), 10 mM NaCl, 1 mM EDTA at a concentration of 0.2 mg/ml).

DNA Ladder 1 kb concatamer (lyophilised)

B

DNA size standard as alternative for irregular
λ fragments

- Number of bands: approx. 25
- supplied with loading buffer (1X)
- Fragment sizes in steps of 1000 bp: 1000 - 25000
- recommended loadings: approx.1 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No. A6430,0050	Quantity 50 µg

Comment: A partial ligation of 1000 bp *Hind* III fragments results in a DNA ladder ranging from 1000 to approx. 22,000 bp in 0.8 to 1% gels using standard agarose (Prod.-No. A2114; separation range up to approx. 25 kbp). The upper limit of the fragment ligation results in the main mass of the ligation products in the separation range optimal for standard agaroses (agar). For a better orientation, the 3,000 bp and 10,000 bp bands are brighter. Optimal results will be achieved after a distance of approximately 80 - 100 mm in agarose gels and a loading volume of approximately 1 µg per lane in normal-sized gels. This 1000 bp concatamer ladder may be applied either in reduced loading volumes (for a separation range e.g. < 10,000 bp) or in increased volumes (> 15,000 bp). Even under optimized ligation conditions, an intramolecular religation may occur, especially with smaller fragments. Therefore, at high gel loading volumes, ligation products (closed circles) have been observed between the 1000 and 3000 bp bands. For a better orientation, the 3000 bp band is brighter.

DNA Marker quick-run (lyophilised)

B

DNA size marker for short gel runs (15 - 25
mm)

- Number of bands: 5
- supplied with loading buffer (1X)
- Fragment sizes in bp: 2500; 2000; 1500; 1000; 500
- recommended loadings: 0.25 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No. A7215,0050	Quantity 50 µg

Comment: This marker is ideal for use with mini gels, since its bands are separated very well even after very short gel runs as short as 15 - 25 mm in an e. g. 1.5 to 1.8 % agarose gel. The single bands have been equalized in terms of their mass. The 1500 bp fragment has an increased mass for better orientation. Optimum results are achieved in a 1.5 - 1.8 % agarose gel with as little as 0.25 µg of the marker per lane (normal-sized mini gel). Please note that the DNA fragments have to be saturated with ethidium bromide in the running buffer during the separation.
This marker is made of plasmids with specific mutagenesis sites. The *Eco* RI-digested DNA has been deproteinized with phenol/chloroform, desalted, precipitated and lyophilised. **Resuspend** the DNA in the sterile-filtered gel loading buffer (supplied with the marker) by incubation for 10 minutes at room temperature with occasional shaking. Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Marker quick-run extended (lyophilised)

B

DNA size marker for short gel runs (35 mm)

- Number of bands: 9
- supplied with loading buffer (1X)
- Fragment sizes in bp: 6000; 4000; 2500; 2000; 1500; 1000; 500; 200; 100
- recommended loadings: 0.3 - 0.5 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No. A7222,0050	Quantity 50 µg

Comment: This marker is ideal for use with mini or midi gels, since its bands are separated very well even after very short gel runs as short as 35 mm in an e. g. 1.2 % agarose gel. The single bands have been equalized in terms of their mass. The 1500 bp fragment has an increased mass for better orientation. Optimum results are achieved with as little as 0.3 - 0.5 µg of the marker per lane (normal-sized mini / midi gel).
This marker is made of plasmids with specific mutagenesis sites. The *Eco* RI-digested DNA has been deproteinized with phenol/chloroform, desalted, precipitated and lyophilised. **Resuspend** the DNA in the sterile-filtered gel loading buffer (supplied with the marker) by incubation for 10 minutes at room temperature with occasional shaking. Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Marker pBR322 - *Hae* III (lyophilised)

B

DNA size standard for high-percentage
agarose gels and polyacrylamide gels

- Number of bands: 22
- supplied with loading buffer (1X)
- Fragment sizes in bp: 587, 540, 502, 458, 434, 267, 234, 213, 192, 184, 124, 123, 104, 89, 80, 64, 57, 51, 21, 18, 11, 8
- recommended loadings: 0.5 - 1.0 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No. A4406,0050	Quantity 50 µg

Comment: Plasmid pBR322 was digested with *Hae* III, deproteinised and lyophilised. This marker is particularly suited to comparisons with small PCR fragments and DNA from restriction samples on polyacrylamide gels or high-percentage agarose gels (>g of marker or 0.5 µg for PAGE, respectively. Loading buffer is supplied separately. Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature! **Please note!** Extremely small fragments can only be visualized on high-percentage PAA gels.

DNA Marker pBR322 - *Hae* III

B

- Number of bands: 22
- Fragment sizes in bp: 587, 540, 502, 458, 434, 267, 234, 213, 192, 184, 124, 123, 104, 89, 80, 64, 57, 51, 21, 18, 11, 8

Specification:

Concentration 0.2 mg/ml

Order-No.	Quantity
A5229,0005	50 µg
A5229,0025	250 µg

Comment: The digest of the pBR322 plasmid with *Hae*III yields 22 fragments with the sizes (bp): 587, 540, 502, 458, 434, 267, 234, 213, 192, 184, 124, 123, 104, 89, 80, 64, 57, 51, 21, 18, 11, 8. The marker will be supplied in the storage buffer 10 mM Tris · HCl (pH 7.8), 10 mM NaCl, 1 mM EDTA.

DNA Marker pBR328 Mix (lyophilised)

B

DNA size standard for medium-sized fragments and PCR products

- Number of bands: 12
- supplied with loading buffer (1X)
- Fragment sizes in bp: 2176; 1766; 1230; 1033; 653; 517; 453; 394; 298; 234; 220; 154
- recommended loadings: 0.8 - 1.0 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A6927,0050	50 µg

Comment: Plasmid pBR328 was digested with *Hinf* I and *Bgl* I, respectively, deproteinised and lyophilised. The fragments have been mixed in an equimolar ratio. This marker is particularly suitable for comparison with PCR fragments (e.g. food diagnostics) and DNA from restriction samples on agarose gels with sizes between 150 and 2000 base pairs. The concise distribution of fragments of the marker make this product ideal for long and short gel runs with running distances of 70 - 80 mm (1.5 % agarose gel). Load 1 µg of the marker per lane of a normal sized agarose gel (approx. 80 ml Loading buffer is supplied separately).

DNA Marker Phage Lambda - *Sty* I

B

- Number of bands: 11
- Fragment sizes in bp: 19329*; 7743; 6223; 4254*; 3472; 2690; 1882, 1489; 925; 421; 74

Specification:

Concentration 0.2 - 0.5 mg/ml

Order-No.	Quantity
A5194,0005	50 µg
A5194,0025	250 µg

Comment: Lambda DNA (cl857 *Sam* 7/*Sty* I Markers are prepared by digesting Lambda DNA with *Sty* I, followed by inactivation of the enzyme. The DNA fragments are then ethanol-precipitated and resuspended in a concentration of 0.2 - 0.5 mg/ml in the storage buffer (10 mM Tris · HCl (pH 8.0), 1 mM EDTA). The marker consists of 11 bands (19329*; 7743; 6223; 4254*; 3472; 2690; 1882, 1489; 925; 421; 74 in bp). **Attention!** The cohesive ends of fragments 1 and 4 (marked with an asterisk) may form an extra band at 23583 bp. The fragments may be separated by heating to 65°C for 3 minutes before loading the sample on the gel.

DNA Marker Phage Lambda - *Bst*E II (lyophilised)

B

DNA size standard for the determination of larger DNA fragments (digestion of genomic DNA)

- Number of bands: 14
- supplied with loading buffer (1X)
- Fragment sizes in bp: 8454*; 7242; 6369; 5687*; 4822; 4324; 3675; 2323; 1929; 1371; 1264; 702; 224; 117
- recommended loadings: 0.5 - 0.8 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A4412,0100	100 µg

Comment: **Please note:** The cohesive ends of fragments 1 and 4 (*) may form an additional band (14,140 bp). Before loading onto the gel, the fragments can be separated by heating to 65°C for 5 minutes with subsequent incubation on ice. Natural phage λ DNA was digested with *Bst*E II, deproteinised and lyophilised. This marker is suitable for comparison with fragment sizes between 700 and 8400 base pairs. The best results are achieved after a migration distance of approx. 80 - 90 mm on 1.0 - 1.2 % agarose gels. Each lane of a normal sized gel (approx. 80 ml; EtBr staining) should be loaded with approx. 1 µg of marker. Loading buffer is supplied separately. Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Marker Phage Lambda - *Bst*E II

B

- Number of bands: 14
- Fragment sizes in bp: 8454*, 7242, 6369, 5686*, 4822, 4324, 3675, 2323, 1929, 1371, 1264, 702, 224, 117

Specification:

Concentration 0.2 - 0.5 mg/ml

Order-No.	Quantity
A5220,0005	50 µg
A5220,0025	250 µg

Comment: Phage Lambda (cl857 *Sam* 7) DNA/*Bst*E II is prepared by digesting Lambda DNA with *Bst*EII, followed by an inactivation of the enzyme. The DNA fragments are then ethanol-precipitated and resuspended in the storage buffer (10 mM Tris · HCl (pH 8.0), 1 mM EDTA). The fragments sizes (in bp) are 8454*, 7242, 6369, 5686*, 4822, 4324, 3675, 2323, 1929, 1371, 1264, 702, 224, 117. **Attention!** The cohesive ends of fragments 1 and 4 (marked with a *) may cause formation of an extra band at 14140 bp. The fragments may be separated by heating to 65°C for 3 minutes before loading the sample on the gel.

DNA Marker Phage Lambda - *Hind* III (lyophilised)

B

DNA size standard for the determination of larger DNA fragments (digestion of genomic DNA)

- Number of bands: 8
- supplied with loading buffer (1X)
- Fragment sizes in bp: 23,130(*); 9,416; 6,557; 4,361(*); 2,322; 2,027; 564; 125
- recommended loadings: 0.5 - 0.8 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A5589,0100	100 µg

Comment:**Please note!** The cohesive ends of fragments 1 and 4 (*) may form an additional band (27,491 bp). Before loading onto the gel, the fragments can be separated by heating to 65°C for 5 minutes with subsequent incubation on ice.
Natural Lambda DNA was digested with *Hind* III, deproteinised and lyophilised. This marker is suitable for comparison with large to medium-sized fragments between 23,000 and 600 base pairs. The best results are achieved after a migration distance of approx. 80 - 90 mm on 1.0 - 1.2 % agarose gels. Each lane of a normal sized gel (approx. 80 ml) should be loaded with approx. 0.5 - 0.8 µg of marker. Loading buffer is supplied separately.
Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Marker Phage Lambda - *Hind* III

B

- Number of bands: 8
- Fragment sizes in bp: 23130*; 9416; 6557; 4361*; 2322; 2027; 564, 125

Specification:
Concentration 0.2 - 0.5 mg/ml

Order-No.	Quantity
A5223,0005	50 µg
A5223,0025	250 µg

Comment: Lambda DNA (cl857 *Sam* 7yl) *Hind* III Markers are prepared by digesting Lambda DNA with *Hind* III, followed by heat-inactivation of the enzyme. The DNA fragments are then ethanol-precipitated and resuspended in a concentration of 0.2 - 0.5 mg/ml in the storage buffer (10 mM Tris · HCl (pH 8.0), 1 mM EDTA). The marker consists of 8 bands (23130*; 9416; 6557; 4361*; 2322; 2027; 564, 125; numbers in bp). **Attention!** The cohesive ends of fragments 1 and 4 (marked with an asterisk) may form an extra band with 27491 bp. The fragments may be separated by heating to 65°C for 3 minutes before loading the sample on the gel.

DNA Marker pUC19 - *Msp* I (lyophilised)

B

DNA size standard for high-percentage agarose gels and polyacrylamide gels

- Number of bands: 12
- supplied with loading buffer (1X)
- Fragment sizes in bp: 501; 489; 404; 331; 242; 190; 147; 111; 110; 67; 34; 26
- recommended loadings: 0.5 - 1.0 µg/lane
- **extremely stable:** storage for at least 4 years at -20°C possible

Order-No.	Quantity
A3996,0050	50 µg

Comment:**Please note!** Extremely small fragments can only be visualized using high-percentage and high-quality agarose gels (>2.2 %) with large mass of fragments.
Plasmid pUC19 was digested with *Msp* I, deproteinised and lyophilised. This marker is particularly suitable for comparison with small PCR fragments and DNA from restriction samples on polyacrylamide gels or high-percentage agarose gels. The bands at 501/489 bp and 111/110 bp have approx. double mass and provide rapid orientation after a short migration distance on 2.0 - 2.2 % agarose gels. The best results are achieved after a migration distance of approx. 50 - 70 mm on agarose gels or 100 mm on 6 - 8 % polyacrylamide gels. Each lane of a normal sized agarose gel (approx. 80 ml) should be loaded with approx. 0.5 - 1.0 µg of marker. Loading buffer is supplied separately.
Prevent repeated freezing and thawing (> 20x). We recommend to prepare small aliquots. The lyophilised form is stable even for weeks at ambient temperature!

DNA Marker pUC19 - *Msp* I

B

- Number of bands: 12
- Fragment sizes in bp: 501, 489, 404, 331, 242, 190, 147, 111, 110, 67, 34 x2, 26

Specification:
Concentration 0.2 mg/ml

Order-No.	Quantity
A5235,0005	50 µg
A5235,0025	250 µg

Comment: The digest of the pUC19 plasmid with *Msp* I yields 12 fragments (501, 489, 404, 331, 242, 190, 147, 111, 110, 67, 34 x2, 26 in bp). The marker will be supplied in the storage buffer 10 mM Tris · HCl (pH 7.8); 10 mM NaCl, 1 mM EDTA.

Electrophoresis Size Marker/Standard Protein

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice

Protein Marker I (14 - 116)

B

- Number of bands: 7
- The bands of 3 µl marker may be easily visualized with Coomassie in an polyacrylamide gel.
- Fragment sizes in kDa: 116.0; 97.4; 66.2; 37.6; 28.5; 18.4; 14.0.

Order-No.	Quantity
A5238,0500	500 µl

Protein Marker II (6.5 - 200) prestained

B

- Number of bands: 8
- The bands of 5 µl marker can be easily viewed in PAGE.
- Fragment sizes in kDa: 200.0; 116.0; 68.0; 43.0; 30.0; 20.0; 14.4; 6.5

Specification:

Loading 5 µl/lane

Order-No.	Quantity
A5418,0250	250 µl

Protein Marker III (6.5 - 200)

B

- Number of bands: 8
- The bands of 2.5 µl marker are easily visualized with Coomassie staining in PAGE.
- Fragment sizes in kDa: 200.0; 116.0; 68.0; 43.0; 29.0; 20.0; 14.4; 6.5

Specification:

Loading 1 - 5 µl/lane

Order-No.	Quantity
A4402,0001	1 ml

Comment: This is a *ready-to-use* marker containing acylated proteins. The product may contain residual iodoacetamide.

Protein Marker IV (10 - 150)

B

*Protein Marker/Standard for Gel
Electrophoresis, Size Standard for Gel
Electrophoresis Proteins*

- Number of bands: 8
- The bands of 2.5 µl marker may be easily visualized with Coomassie in an polyacrylamide gel.
- Fragment sizes in kDa: 150; 100; 80; 60; 40; 30; 20; 10

Order-No.	Quantity
A3993,0500	500 µl

Comment: This is a *ready-to-use* marker containing recombinant proteins. The product may contain residual iodoacetamide.

Protein Marker V (10 - 175) prestained



B

Magenta Marker

- Number of bands: 11
- Three reference proteins coupled with a blue dye for easy identification.
- Fragment size range in kDa: 10 - 175

Order-No.	Quantity
A8359,0250	250 µl

Protein Marker VI (10 - 245) prestained



B

*Blue-Green-Red Protein Marker, Protein
Ladder, Transfection reagent for
mammalian cells with siRNA or miRNA*

- Number of bands: 11
- Three-color protein standard with 12 pre-stained. Proteins are covalently coupled with a blue chromophore except for two reference bands (one green and one red band at 25 kDa and 75 kDa respectively).
- Fragment size range in kDa: 10 - 245

Order-No.	Quantity
A8889,0500	500 µl

Elenol acid glucoside HPLC grade

B

Oleoside-11-methylester
from *Olea europaea*

$C_{17}H_{24}O_{11}$
 $M = 404.38$ g/mol
CAS-No.: 60539-23-3
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.

A5272,0020

A5272,0050

Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Eleutheroside B HPLC grade

B

Syringin, Syringosid
from *Syringa vulgaris*

$C_{17}H_{24}O_9$
 $M = 372.36$ g/mol
CAS-No.: 118-34-3
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.

A6752,0010

A6752,0020

Quantity

10 mg

20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Eleutheroside E HPLC grade

B

Syringaresinol-4',4''-O-bis- β -D-
glucoside
from *Eleutherococcus*

$C_{34}H_{46}O_{18}$
 $M = 742.71$ g/mol
CAS-No.: 39432-56-9
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 96 %

Order-No.

A5301,0005

A5301,0010

Quantity

5 mg

10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Ellman's reagent see 5,5'-Dithio-bis(2-nitrobenzoic acid) *BioChemica* Page 291

rHu EMAP-2 bioconfident grade



B

recombinant Human Endothelial-
Monocyte Activating Polypeptide-2
Sterile filtered through a 0.2 μ m filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 21.0$ kDa
HS-No.: 29371900

Storage: -20°C

Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin max. 0.05 EU/ μ g

Pyrogen test complies

Assay (SDS-PAGE) min. 98 %

Order-No.

A8555,0010

A8555,0050

A8555,0100

A8555,1000

Quantity

10 μ g

50 μ g

100 μ g

1 mg

Comment: Recombinant human EMAP-2 contains 173 amino acids and a 16 amino acid histidine-based tag for a total length of 189 amino acid and has a predicted molecular mass of 21.0 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 29 and 31 kDa in SDS-PAGE.

Emodin HPLC grade

B

Archin, Frangula-Emodin, Rheum-
Emodin, 6-Methyl-1,3,8-
trihydroxyanthraquinone
from *Rhamnus frangula*

$C_{15}H_{10}O_5$
 $M = 270.23$ g/mol
CAS-No.: 518-82-1
HS-No.: 29146990
EC-No.: 208-258-8

Storage: 2-8°C

LGK: 10 - 13

Warning

H319-H335-H315

P333+P313-P261-P305+P351+P338-

P280-P264



Specification:

Assay min. 99 %

Order-No.

A2056,0020DOC

A2056,0020

A2056,0050

Quantity

20 mg

20 mg

50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^{1} H-NMR, ^{13} C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Emodin-l-rhamnoside see Frangulin A HPLC grade Page 363

Empetrin see Delphinidin-3-galactoside chloride HPLC grade Page 261

Endo Agar Base

C

HS-No.: 38220000		Storage: RT protected from light LGK: 10 - 13	
Composition: Agar 15.0 g/L Buffers 2.5 g/L Lactose 10.0 g/L Peptones 12.0 g/L Sodium sulfite 2.5 g/L		Specification: pH before autoclaving . . approx. 7.4 (20°C)	
		Order-No. A3955,0500 A3955,5000	Quantity 500 g 5 kg
◆ Attention: Please note that a supplement (A6786) exists for this agar. Please order separately.			

Literature: (1) Endo, S. (1904) *Zentralbl. Bakt. I Orig.* **35**, 109-110
(2) American Public Health Association. (1980) Standard Methods for the Examination of Water and Wastewater. 15th ed., APHA Inc., Washington, D.C.

Comment: This differential and slightly selective medium is suitable for the detection of coliform and other enteric bacteria.
Directions: Suspend 42 g in 1 L of distilled water. Add 5 ml of Endo Basic Fuchsin Solution (A6786). Boil the suspension until the medium is dissolved completely. Mix well before pouring. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C protected from light.

Endo Basic Fuchsin Solution see Supplements for Microbiological Media Page 786
recombinant Human Endocrine Gland-Vascular Endothelial Growth Factor see rHu EG-VEGF Page 318
recombinant Human Endothelial-Monocyte Activating Polypeptide-2 see rHu EMAP-2 bioconfident grade Page 326
Endo-polishing and blunt-end cloning kit see PCR Blunt Cloning Kit Page 595

Englerin A

B

from <i>Phyllanthus engleri</i>	C ₂₆ H ₃₅ O ₁₆ M = 443.56 g/mol HS-No.: 29331900	Storage: 2-8°C	Warning H302 P260-P308+P313	
Specification: Assay min. 95 %				
		Order-No. A8907,0010		Quantity 10 mg

Enhanced ChemiLuminescence Detection Kit see Cheluminate-HRP PicoDetect Page 197
Enhanced ChemiLuminescence Detection Kit FemtoDetect Plus see Cheluminate-HRP FemtoDetect Plus Page 198
Enhanced ChemiLuminescence Detection Kit PicoDetect Extended see Cheluminate-HRP PicoDetect Extended Page 198

Enolase, Neuron-specific human

B

NSE, Thermolabile Antigen A, 2- Phospho-D-glycerate hydrolase, Neuron-specific Enolase [EC 4.2.1.11] supplied as frozen liquid in 10 mM NaH ₂ PO ₄ buffer, pH 7.4, 150 mM NaCl, 5 mM MgSO ₄ from human brain		HS-No.: 35079090		Storage: -20°C Avoid repeated changes in the solu- tion temperature! Shipment: dry ice	
Specification: Assay min. 96 % NSE (Immunoassay CIS bio RIA) typ. min. 1 mg/ml		Protein (OD 280 nm) . . . min. 0.71 mg/ml		Order-No. A6970,0010 A6970,0100	Quantity 10 µg 100 µg

ENU see N-Nitroso-N-ethylurea Page 575

Eosin B (C.I. 45400)

C

Eosin Bluish, 4',5',7'-Dibromo-2',7'-dinitrofluorescein disodium salt

$C_{20}H_6Br_2N_2Na_2O_9$
 $M = 624.08 \text{ g/mol}$
 CAS-No.: 548-24-3
 HS-No.: 32041200
 EC-No.: 208-943-1

Storage: RT
 LGK: 10 - 13

Transition interval pH 1.4 - 2.4
 (colorless - rose
 fluorescence)

Specification:

Assay (photometr.) min. 90 %
 λ_{max} 514 - 518 nm
 Loss on drying max. 10 %

Order-No.	Quantity
A0821,0010	10 g
A0821,0025	25 g
A0821,0100	100 g

Literature: (1) Waheed, A.A. & Gupta, P.D. (1996) *Anal. Biochem.* **233**, 249-252

Protein determination with Eosin B.

Comment: Eosin B is a readily water-soluble, red dye with a green fluorescence (λ_{max} , 514 nm), which is commonly used in histology and microbiology. The dye binds in the acidic pH range (pH 2.5 - 3.5) to proteins. This complex absorbs light at 536 - 544 nm. The shift of λ_{max} is proportional to the protein concentration. The dye-protein complex forms immediately and is stable for 2 hours. The linearity is comparable to those of the Lowry and Bradford assay.

The staining solution (0.01 % Eosin B in water) is stable for two weeks. Salts, neutral detergents and reducing reagents do not interfere (1).

Eosin B - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 32041200
 EC-No.: 208-943-1

Storage: RT
 LGK: 10 - 13

Composition:

Eosin B (A0821) 0.1 %

Order-No.	Quantity
A2353,0100	100 ml
A2353,0500	500 ml
A2353,1000	1 L

Eosin Blue see Phloxine B (C.I. 45410) Microscopy grade Page 622

Eosin Bluish see Eosin B (C.I. 45400) Page 328

Eosin - Methylene Blue see Jenner's stain Page 467

Eosin-Methylene blue according to Leishman see Leishman's Stain Page 485

Eosin-Methylene blue according to Wright see Wright's Eosin-Methylene blue Page 867

Eosin-Methylene blue - Solution acc. to May-Grünwald see May-Grünwald - Solution Microscopy grade Page 519

Eosin Methylene Blue Agar

C

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

Composition:

Agar 13.0 g/L
 Buffers 2.0 g/L
 Eosin Y 0.4 g/L
 Lactose 10.0 g/L
 Methylene blue 0.065 g/L

Peptones 10.5 g/L

Specification:

pH before autoclaving
 approx. 7.0 (20°C)

Order-No.	Quantity
A5738,0500	500 g
A5738,5000	5 kg

Literature: (1) Levine (1918) *J. Infect. Dis.* **23**, 43.

Comment: This selective medium is suitable for the isolation and differentiation of gram-negative enteric bacteria.

Directions: Suspend 36 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C protected from light.

Eosin Y (C.I. 45380)

C

2',4',5',7'-Tetrabromofluorescein
 disodium salt, Eosin Yellowish

$C_{20}H_6Br_4Na_2O_5$
 $M = 691.88 \text{ g/mol}$
 CAS-No.: 17372-87-1
 HS-No.: 32041200
 EC-No.: 241-409-6

Storage: RT
 LGK: 10 - 13

WGK: 1
 Warning
 H319
 P260-P305+P351+P338



Transition interval pH 0.0 - 3.0
 (yellow - green
 fluorescence)

Specification:

Assay (photometr.) min. 90 %
 λ_{max} 514 - 520 nm
 Loss on drying max. 10 %

Order-No.	Quantity
A0822,0025	25 g
A0822,0100	100 g

Literature: (1) Selsted, M.E. & Becker III, H.W. (1986) *Anal. Biochem.* **155**, 270-274

Eosin Y: A Reversible Stain for Detecting Electrophoretically Resolved Protein.

Comment: The rapid staining of proteins in low-pH, urea-containing polyacrylamide gels with eosin Y reveal similar staining intensities to those seen with Coomassie® R-250. High recoveries of total protein as well as enzymatic activity were achieved (1).

Protocol: Stain the gel for 30 seconds in 0.25 % eosin Y in 0.1 N NaOH. Rinse the gel for 10 seconds with distilled water. The eosin-stained proteins appeared as red-orange bands on a pale orange background. Background staining could be reduced by extending the destaining period to 30 minutes. Much longer destaining in water resulted in a loss of band intensity. Staining intensity could be stabilized indefinitely by storing the gel in 5 % acetic acid after 15 - 30 minutes of destaining in water (1).

Eosin Y - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 32041200

EC-No.: 241-409-6

Storage: RT

LGK: 10 - 13

Composition:

Eosin Y (A0822) 0.1 %

Order-No.
A2370,0100
A2370,0500
Quantity

100 ml

500 ml

Eosin Yellowish see Eosin Y (C.I. 45380) Page 328

(-)-Epicatechin HPLC grade

B

(-)-Epicatechol
from *Acacia catechu*
 $C_{15}H_{14}O_6$
 $M = 290.27$ g/mol

CAS-No.: 490-46-0

HS-No.: 29329900

Storage: 2-8°C

LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.
A3894,0020
A3894,0050
Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

(-)-Epicatechin gallate HPLC grade

B

from *Camellia sinensis*
 $C_{22}H_{18}O_{10}$
 $M = 442.38$ g/mol

CAS-No.: 1257-08-5

HS-No.: 29329900

Storage: 2-8°C

LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.
A2012,0010
A2012,0010DOC
A2012,0050
A2012,0050DOC
Quantity

10 mg

10 mg

50 mg

50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

(-)-Epicatechol see (-)-Epicatechin HPLC grade Page 329

recombinant Human Epidermal Growth Factor see rHu EGF Page 317

recombinant Mouse Epidermal Growth Factor see rM EGF Page 318

(-)-Epigallocatechin HPLC grade

B

from *Camellia sinensis*
 $C_{15}H_{14}O_7$
 $M = 306.27$ g/mol

CAS-No.: 970-74-1

HS-No.: 29329900

Storage: 2-8°C

LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.
A2010,0010
A2010,0010DOC
A2010,0050
A2010,0050DOC
Quantity

10 mg

10 mg

50 mg

50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

(-)-Epigallocatechin gallate

from *Camellia sinensis*

$C_{22}H_{18}O_{11}$
 $M = 458.37$ g/mol
 CAS-No.: 989-51-5
 HS-No.: 29329900

Storage: 2-8°C
 LGK: 10 - 13

(-)-Epigallocatechin gallate HPLC grade

Specification:

Assay min. 99 %

Order-No.	Quantity
A2011,0020	20 mg
A2011,0020DOC	20 mg
A2011,0050	50 mg
A2011,0050DOC	50 mg

B

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

(-)-Epigallocatechin gallate pure

Specification:

Assay min. 96 %

Order-No.	Quantity
A6912,0100	100 mg

B

Comment: Documents included: HPLC-DAD with UV spectrum.

2,3-Epoxy-4-oxo-7,10-dodecadienoylamide see Cerulenin *BioChemica* Page 192
 N-(trans-Epoxy succinyl)-L-leucine-4-guanidinobutylamide see E-64 Page 311
 trans-Epoxy succinyl-L-leucylamido-(4-guanidino)butane see E-64 Page 311
 EPPS see HEPPS Buffer grade Page 402
 Ergocalciferol see Vitamin D₂ Page 856

Eriochrome black T (C.I. 14645)

Chrome black, Chromogene black

$C_{20}H_{12}N_3NaO_7S$
 $M = 461.38$ g/mol
 CAS-No.: 1787-61-7
 HS-No.: 32041900
 EC-No.: 217-250-3

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Class / PG: 9/III
 UN3077
 WGK: 2
 Warning
 H319-H411
 P273-P305+P351+P338



Specification:

λ_{max} (pH 10) 615 - 625 nm
 E 1 %/1 cm, λ_{max} min. 280
 Identity complies
 Loss on drying max. 10 %

Order-No.	Quantity
A1346,0010	10 g
A1346,0025	25 g
A1346,0100	100 g

Literature: (1) Jung, D.-W. *et al.* (1998) *Anal. Biochem.* **263**, 118-120

Detection of Proteins in Polyacrylamide Gels Using Eriochrome Black T and Rhodamine B.

Comment: The mixed-dye staining method of proteins in polyacrylamide gels with Eriochrome black T in combination with Rhodamine B can detect as little as 10 ng of BSA within one hour (1) and is more sensitive than Coomassie®-staining. The optimum dye concentration of Eriochrome Black T was determined to be 0.01 %. Protein bands were scanned at 560 nm by densitometer. Rhodamine B was employed at the same concentration (0.01 %). Staining solution was prepared by mixing stock solutions of Eriochrome Black T (0.02 % (w/v)) and Rhodamine B (0.02 % (w/v)) in 40 % methanol/7 % acetic acid in a ratio of 1 : 1 (v/v) just prior to use. Besides sensitivity, another advantage of the mixed-dye staining method over Coomassie® is the stability of the staining pattern after drying (60°C, 30 min; ref. 1).

Eriochrome Cyanine R see Aurintricarboxylic acid triammonium salt (C.I. 43810) *BioChemica* Page 122

Erioglaucine (C.I.42090)



C

Brilliant blue FCF, Alphazurine FG, Acid blue 9 disodium salt

$C_{37}H_{34}N_2Na_2O_9S_3$
 $M = 792.85$ g/mol
 CAS-No.: 3844-45-9
 HS-No.: 32041200
 EC-No.: 223-339-8

Storage: RT
 LGK: 10 - 13

WGK: 3

Thermal dec. 283°C

Specification:

λ_{max} 1 406 - 410 nm
 λ_{max} 2 627 - 631 nm
 TLC complies

Order-No.	Quantity
A5564,0005	5 g
A5564,0025	25 g

Erythromycin base *BioChemica*

B

Melting point 133 - 135°C

$C_{37}H_{67}NO_{13}$
 $M = 733.95$ g/mol
 CAS-No.: 114-07-8
 HS-No.: 29415000
 EC-No.: 204-040-1

Storage: RT
 LGK: 10 - 13

Specification:

Assay min. 95 %
 α 20°C/D; 2 %, EtOH -71° - -78°
 pH (0.1 %; H_2O) 8.0 - 10.5
 Loss on drying max. 5 %

Order-No.	Quantity
A2275,0005	5 g
A2275,0010	10 g
A2275,0025	25 g

Comment: Erythromycin is a macrocyclic lactone antibiotic (macrolid antibiotic). It consists of a cyclic lactone system and different sugar residues. It is of low solubility in water (2.1 mg/ml at pH 8 - 10.5 saturated solution) and highly soluble in alcohols, acetone, chloroform and ethylene glycol. Optimal activity is achieved in the pH range 8.0 - 8.5. Like tetracycline, erythromycin binds to ribosomes and inhibits the protein biosynthesis, optimal in proliferating organism. It is active against gram positive organism and mycoplasma in a bacteriostatic manner.

Stability: The colorless to yellowish, crystalline substance is slightly hygroscopic, but stable if stored dry. An aqueous, sterile solution is stable at -20°C to +4°C for up to two months, at 37°C just 4 days. The pH of the solution should be adjusted to 8.5. At pH 7.0 to 7.5, the antibiotic is unstable and can't be stored longer than 24 hours, as well as at pH 6.0 (very labile).

D(-)-Erythrose *BioChemica*

B

$C_4H_8O_4$
 $M = 120.10$ g/mol
 CAS-No.: 583-50-6
 HS-No.: 29400000
 EC-No.: 209-505-2

Storage: 2-8°C

Specification:

Assay min. 85 %
 α 20°C/D; c = 2; H_2O ; 24 h -29° - -35°
 IR spectrum complies

Sulfated ash max. 0.1 %

Order-No.	Quantity
A5042,0500	500 mg
A5042,0001	1 g

Erythrosin B (C.I. 45430)

C

Iodeosin, Erythrosin Bluish, Acid Red 51

$C_{20}H_{14}Na_2O_5$
 $M = 879.92$ g/mol
 CAS-No.: 16423-68-0
 HS-No.: 32041200
 EC-No.: 240-474-8

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1
 Warning
 H302
 P330-P264-P301+P312



Transition interval pH 0.0 - 3.6
 (orange - red)

Specification:

λ_{max} 524 - 528 nm
 E 1 %/1 cm, λ_{max} ; 1 % Na_2CO_3
 800 - 1400

Loss on drying max. 10 %

Order-No.	Quantity
A0558,0010	10 g
A0558,0025	25 g

Erythrosin B - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 32041200
 EC-No.: 240-474-8

Storage: RT

Composition:

Erythrosin B (A0558) 0.1 %

Order-No.	Quantity
A2363,0100	100 ml
A2363,0500	500 ml

Erythrosin Bluish see Erythrosin B (C.I. 45430) Page 331

Esbach reagent



C

Reagent for the determination of proteins

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

WGK: 2
 P280-P501

Composition:

Citric acid 20 g/L
 Pikric acid 10 g/L

Order-No.	Quantity
A8067,0100	100 ml
A8067,0500	500 ml

Escin *BioChemica*

B

Aescin

$C_{54}H_{84}O_{23}$
 $M = 1101.23$ g/mol
 CAS-No.: 6805-41-0
 HS-No.: 29389090
 EC-No.: 229-880-6

Storage: RT

WGK: 2
 Warning
 H332-H302
 P260-P305+P351+P338



Specification:

Assay (dried; titr.) min. 96 %
 α 20°C/D; 5 %, MeOH -23° - -29°
 Water (K.F.) max. 6 %

Order-No.	Quantity
A7749,0001	1 g
A7749,0005	5 g
A7749,0010	10 g

Esculin BioChemica

B

6,7-Dihydroxy-coumarin-6-glucoside,
Esculin sequihydrate

C₁₅H₁₆O₉ · 1.5H₂O
M = 367.31 g/mol
CAS-No.: 66778-17-4
HS-No.: 29389090
EC-No.: 208-517-5

Storage: RT
LGK: 10 - 13

WGK: 3
P260-P262

Melting point ~215°C (dec.)

Specification:

Assay (photometr.) min. 98 %
α20°C/D; 1,5%, Dioxane : H₂O 1:1
..... -84° - -87°
Heavy metals (as Pb) max. 0.002 %

Water (K.F.) 6.5 - 8.5 %

Order-No.	Quantity
A1537,0010	10 g
A1537,0050	50 g
A1537,0100	100 g

Esculin sequihydrate see Esculin BioChemica Page 332

Ethanediol see Glyoxal - Solution 40 % Molecular biology grade Page 388

1,2-Ethanediamine see Ethylenediamine p. A. Page 341

1,2-Ethanediol see Ethylene glycol Page 341

1,2-Ethanedisulfonic acid disodium salt IPC grade

C

di-Sodium-1,2-ethanedisulfonate

C₂H₄Na₂O₆S₂
M = 234.15 g/mol
CAS-No.: 5325-43-9
HS-No.: 29041000
EC-No.: 226-198-0

Storage: RT
LGK: 10 - 13
Disposal: 28

Melting point > 300°C

Specification:

Assay (titr.) min. 99 %
Alkylbromide max. 0.01 %
Solubility (5 %; H₂O) clear, colorless

A (1 cm/0.005 M inH₂O)
210 nm max. 0.10
220 nm max. 0.05
250 nm max. 0.02
280 nm max. 0.02

Order-No.	Quantity
A1021,0005	5 g
A1021,0025	25 g

Ethanethioamide see Thioacetamide p. A. Page 812

Ethanol 80 % - 100 %

Boiling point 78.3°C (abs.)
Density (d 20°C/4°C) .. 0.789 (abs.)
Melting point -114.5°C (abs.)
n 20°C/D 1.3611 (abs.)

C₂H₆O
M = 46.07 g/mol
CAS-No.: 64-17-5
EC-No.: 200-578-6

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1170
WGK: 1
Danger
H225
P210



Ethanol HPLC grade

C

HS-No.: 22071000

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0002 meq/g
Non-volatile matter max. 0.001 %
Water (K.F.) max. 0.2 %

A (1 cm/water HPLC grade)
220 nm max. 0.30
250 nm max. 0.05
290 nm max. 0.015

Order-No.	Quantity
A1612,1000	1 L
A1612,10006	6 x 1 L
A1612,2500	2.5 L
A1612,25004	4 x 2,5 L

Ethanol absolute Molecular biology grade

B

HS-No.: 22071000

Specification:

DNases/RNases/Proteases not detectable
Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0002 meq/g
Non-volatile matter max. 0.001 %
Water (K.F.) max. 0.2 %

Order-No.	Quantity
A3678,0250	250 ml
A3678,0500	500 ml
A3678,1000	1 L
A3678,10006	6 x 1 L
A3678,2500	2.5 L
A3678,25004	4 x 2,5 L

Ethanol absolute BioChemica

B

HS-No.: 22071000

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Heavy metals (as Pb) max. 0.0002 %
Non-volatile matter max. 0.001 %
Acetone max. 0.001 %
Aldehydes max. 0.001 %
Methanol max. 0.05 %
Water (K.F.) max. 0.2 %

Order-No.	Quantity
A3693,0500GL	500 ml
A3693,0500PE	500 ml
A3693,1000GL	1 L
A3693,1000PE	1 L
A3693,10006PE	6 x 1 L
A3693,2500PE	2.5 L
A3693,25004PE	4 x 2,5 L

Ethanol absolute p. A.

C

HS-No.: 22071000

Specification:		Order-No.	Quantity
Assay (HPLC)	min. 99.8 %	A1613,0100	100 ml
Acidity/Alkalinity	max. 0.0005 meq/g	A1613,0500GL	500 ml
Non-volatile matter	max. 0.001 %	A1613,0500PE	500 ml
Total P	max. 0.0001 %	A1613,1000GL	1 L
Total S	max. 0.0001 %	A1613,1000GL	6 x 1 L
Total Si	max. 0.0002 %	A1613,1000PE	1 L
Acetone	max. 0.001 %	A1613,1000PE	6 x 1 L
Aldehydes	max. 0.001 %	A1613,2500GL	2.5 L
Methanol	max. 0.05 %	A1613,2500GL	4 x 2,5 L
Water (K.F.)	max. 0.2 %	A1613,2500PE	2.5 L
Cr	max. 0.00001 %	A1613,2500PE	4 x 2,5 L
Fe	max. 0.00001 %	A1613,5000PE	5 L
Mn	max. 0.00001 %	A1613,9010PE	10 L
Ni	max. 0.00001 %	A1613,9025BK	25 L
Pb	max. 0.00001 %	A1613,9025PE	25 L
Zn	max. 0.00001 %		

Ethanol absolute pure Ph. Eur., USP

C

HS-No.: 22071000

Specification:		Order-No.	Quantity
Assay (m/m)	min. 99.2 %	A4230,0250GL	250 ml
Assay (v/v)	min. 99.5 %	A4230,0250PE	250 ml
Acidity/alk. react. subst.	complies	A4230,0500GL	500 ml
Appearance	complies	A4230,0500PE	500 ml
Density (d 15.56°C/15.56°C)	max. 0.7962	A4230,1000GL	1 L
Density (d 20°C/20°C)	0.790 - 0.793	A4230,1000GL	6 x 1 L
Identity (IR)	complies	A4230,1000PE	1 L
Non-volatile matter	max. 25 mg/L	A4230,1000PE	6 x 1 L
Sum of further impurities	max. 0.03 %	A4230,2500GL	2.5 L
Volatile impurities	complies	A4230,2500GL	4 x 2,5 L
Acetaldehyde and Acetal	max. 0.001 % (v/v)	A4230,2500PE	2.5 L
Benzene	max. 0.0002 % (v/v)	A4230,2500PE	4 x 2,5 L
Methanol	max. 0.02 % (v/v)	A4230,5000	5 L
		A4230,9010	10 L
		A4230,9025BK	25 L
		A4230,9025PE	25 L

Ethanol 99 % denaturated with 1 % MEK p. A.

C

HS-No.: 22072000

Specification:		Order-No.	Quantity
Assay (HPLC)	min. 99 %	A4930,1000	1 L
Acidity/Alkalinity	max. 0.0005 meq/g	A4930,10006	6 x 1 L
Non-volatile matter	max. 0.001 %	A4930,2500	2.5 L
Total P	max. 0.0001 %	A4930,25004	4 x 2,5 L
Total S	max. 0.0001 %	A4930,5000	5 L
Total Si	max. 0.0002 %		
Water (K.F.)	max. 0.2 %		
Methanol	max. 0.05 %		
Cr	max. 0.00001 %		
Fe	max. 0.00001 %		
Mn	max. 0.00001 %		
Ni	max. 0.00001 %		
Pb	max. 0.00001 %		
Zn	max. 0.00001 %		

Ethanol 99 % denaturated with 1 % MEK pure

C

HS-No.: 22072000

Specification:		Order-No.	Quantity
Assay (HPLC)	approx. 99 %	A5007,2500	2.5 L
Heavy metals (as Pb)	max. 0.001 %	A5007,25004	4 x 2,5 L
Water (K.F.)	max. 0.3 %	A5007,5000	5 L
		A5007,9010	10 L
		A5007,9025BK	25 L
		A5007,9025PE	25 L

Ethanol 99 % denaturated with 1 % MEK Technical grade

C

HS-No.: 22072000

Specification:		Order-No.	Quantity
Assay (HPLC)	approx. 99 %	A2795,2500	2.5 L
Water (K.F.)	max. 0.3 %	A2795,25004	4 x 2,5 L
		A2795,5000	5 L
		A2795,9010	10 L
		A2795,9025BK	25 L
		A2795,9025PE	25 L

Ethanol 99 % denaturated with 2 % Toluene pure

C

HS-No.: 22072000

Specification:

Assay (HPLC) approx. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Water (K.F.) max. 0.3 %

Order-No.	Quantity
A5002,1000	1 L
A5002,10006	6 x 1 L
A5002,2500	2.5 L
A5002,25004	4 x 2,5 L
A5002,5000	5 L
A5002,9010	10 L
A5002,9025BK	25 L
A5002,9025PE	25 L

Ethanol 99 % technical grade denaturated with 2 % Toluene

C

HS-No.: 22072000

Specification:

Assay (HPLC) approx. 99 %
 Water (K.F.) max. 0.3 %

Order-No.	Quantity
A4885,2500	2.5 L
A4885,25004	4 x 2,5 L
A4885,5000	5 L
A4885,9010	10 L
A4885,9025BK	25 L
A4885,9025PE	25 L

Ethanol 96 % BioChemica

B

HS-No.: 22071000

Specification:

Assay (v/v) min. 96 %
 Aldehydes max. 0.001 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Methanol max. 0.05 %
 Heavy metals (as Pb) max. 0.0002 %
 Non-volatile matter max. 0.001 %
 Acetone max. 0.001 %

Order-No.	Quantity
A3740,0250	250 ml
A3740,0500	500 ml
A3740,1000	1 L
A3740,2500	2.5 L

Ethanol 96 % p. A.

C

HS-No.: 22071000

Specification:

Assay min. 96 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.001 %
 Total P max. 0.0001 %
 Total S max. 0.0001 %
 Total Si max. 0.0002 %
 Acetone max. 0.001 %
 Aldehydes max. 0.001 %
 Methanol max. 0.05 %
 Cr max. 0.00001 %
 Fe max. 0.00001 %
 Mn max. 0.00001 %
 Ni max. 0.00001 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A1868,0500	500 ml
A1868,1000	1 L
A1868,10006	6 x 1 L
A1868,2500	2.5 L
A1868,25004	4 x 2,5 L

Ethanol 96 % pure Ph. Eur., BP

C

HS-No.: 22071000

Specification:

Assay (m/m) 92.6 - 95.2 %
 Assay (v/v) 95.1 - 96.9 %
 Acidic/alk. react. subst. complies
 Appearance complies
 Density (d 20°C/20°C) 0.805 - 0.812
 Identity (IR) complies
 Non-volatile matter max. 25 mg/L
 Volatile org. impurities complies
 Absorption
 240 nm max. 0.40
 250 - 260 nm max. 0.30
 270 - 340 nm max. 0.10

Order-No.	Quantity
A1615,0100GL	100 ml
A1615,0250GL	250 ml
A1615,0500GL	500 ml
A1615,1000GL	1 L
A1615,10006GL	6 x 1 L
A1615,2500GL	2.5 L
A1615,25004GL	4 x 2,5 L
A1615,5000PE	5 L
A1615,9010PE	10 L
A1615,9025BK	25 L
A1615,9025PE	25 L

Ethanol 96 % denaturated with 1 % MEK Technical grade

C

HS-No.: 22072000

Specification:

Assay (HPLC) min. 96 %

Order-No.	Quantity
A2551,2500	2.5 L
A2551,25004	4 x 2,5 L
A2551,5000	5 L
A2551,9010	10 L
A2551,9025BK	25 L
A2551,9025PE	25 L

Ethanol 94 % denatured with Ketones Technical grade

C

HS-No.: 22072000

Specification:

Assay (HPLC) min. 94 %

Order-No. Quantity

A2357,2500	2.5 L
A2357,25004	4 x 2,5 L
A2357,5000	5 L
A2357,9010	10 L
A2357,9025BK	25 L
A2357,9025PE	25 L

Ethanol 80 % technical grade denatured with MEK

C

HS-No.: 22072000

Specification:

Assay (HPLC) min. 80 %

Order-No. Quantity

A5023,2500	2.5 L
A5023,25004	4 x 2,5 L
A5023,5000	5 L
A5023,9010	10 L
A5023,9025BK	25 L
A5023,9025PE	25 L

Ethanol ≤ 70 %

Alcohol, Ethyl alcohol

C₂H₆O

M = 46.07 g/mol

CAS-No.: 64-17-5

EC-No.: 200-578-6

Storage: RT

LGK: 3 A

Disposal: 1

Class / PG: 3/III

UN1170

WGK: 1

Boiling point 78 - 79°C
Density (d 20°C/4°C) .. 0.885 (70 %)
n 20°C/D 1.364

There are two different custom tariff numbers (HS-No.) for nondenatured ethanol with a concentration ≤ 70 %.

For quantities ≤ 2 L use HS-No.: 22089091.

For quantities > 2 L use HS-No. 22089099.

Ethanol 70 % BioChemica

HS-No.: 22089091

Danger

H225

P210



B

Specification:

Assay (v/v) min. 70 %

Acidity/Alkalinity max. 0.0005 meq/g

Heavy metals (as Pb) max. 0.0002 %

Non-volatile matter max. 0.001 %

Acetone max. 0.001 %

Aldehydes max. 0.001 %

Methanol max. 0.05 %

Order-No. Quantity

A3699,0250	250 ml
A3699,0500	500 ml
A3699,1000	1 L
A3699,2500	2.5 L

Ethanol 70 % p.A.

HS-No.: 22089091

Danger

H225

P210



C

Specification:

Assay (HPLC) min. 70 %

Acidity/Alkalinity max. 0.0005 meq/g

Non-volatile matter max. 0.001 %

Total P max. 0.0001 %

Total S max. 0.0001 %

Total Si max. 0.0002 %

Acetone max. 0.001 %

Aldehydes max. 0.001 %

Methanol max. 0.05 %

Cr max. 0.00001 %

Fe max. 0.00001 %

Mn max. 0.00001 %

Ni max. 0.00001 %

Pb max. 0.00001 %

Zn max. 0.00001 %

Order-No. Quantity

A2192,0500GL	500 ml
A2192,0500PE	500 ml
A2192,1000GL	1 L
A2192,10006GL	6 x 1 L
A2192,1000PE	1 L
A2192,10006PE	6 x 1 L
A2192,2500GL	2.5 L
A2192,25004GL	4 x 2,5 L
A2192,2500PE	2.5 L
A2192,25004PE	4 x 2,5 L
A2192,5000	5 L
A2192,9010	10 L
A2192,9025BK	25 L
A2192,9025PE	25 L

Ethanol 70 % pure DAB

HS-No.: 22089091

Danger
H225
P210**Specification:**

Assay (m/m) 61.6 - 63.3 %
 Assay (v/v) 69.2 - 70.8 %
 Relative density 0.885 - 0.889

Order-No.	Quantity
A0913,0250	250 ml
A0913,0500	500 ml
A0913,1000	1 L
A0913,10006	6 x 1 L
A0913,2500	2.5 L
A0913,25004	4 x 2,5 L
A0913,5000	5 L

Ethanol 70 % denatured with Ketones Technical grade

HS-No.: 22072000

Danger
H225
P210**Specification:**

Assay (HPLC) approx. 70 %

Order-No.	Quantity
A0565,2500	2.5 L
A0565,25004	4 x 2,5 L
A0565,5000	5 L
A0565,9010	10 L
A0565,9025BK	25 L
A0565,9025PE	25 L

Ethanol 68 % for alcohol determination in milk

HS-No.: 22089091

Danger
H225
P210**Specification:**

Assay (v/v) 68 %

Order-No.	Quantity
A2075,0250	250 ml
A2075,1000	1 L
A2075,2500	2.5 L

Ethanol 40 % pure

HS-No.: 22072000

Warning
H226
P210**Specification:**

Assay (v/v) min. 40 %
 Heavy metals max. 0.0002 %
 Non-volatile matter max. 0.0015 %
 Fe max. 0.0001 %

Order-No.	Quantity
A3667,1000	1 L
A3667,10006	6 x 1 L
A3667,2500	2.5 L
A3667,5000	5 L

Ethanol 10 % - 39 %

Storage: RT

Ethanol approx. 40 %, RuM

B

Rum $C_2H_6O \cdot xH_2O$ *Caribbean origin* $M = 46,07 \text{ g/mol} \cdot xH_2O$

HS-No.: 22084011

Specification:

Assay (v/v) min. 37 %
 Appearance of solution clear, colorless -
 brownish
 Optimal Serving temp. ambient temp. or
 on the rocks
 Loss on drying max. 63 %

Order-No.	Quantity
A7804,0700	700 ml

Literature: (1) <http://en.wikipedia.org/wiki/Rum> (as at January 28th 2008). Wikipedia® is a registered trademark of Wikimedia Foundation Inc.

Comment: Rum is a distilled beverage made from sugarcane byproducts such as molasses and sugarcane juice by a process of fermentation and distillation. The distillate, a clear liquid, is then usually aged in oak and other barrels. The majority of rum production occurs in and around the Caribbean and along the Demerara River, Guyana in South America, though there are rum producers in places such as Australia, India, Reunion Island, Mauritius, and elsewhere around the world.

The origin of the word *rum* is unclear. A common claim is that the name was derived from *rumbullion* meaning "a great tumult or uproar". The first distillation of rum took place on the sugarcane plantations of the Caribbean in the 17th century. Plantation slaves first discovered that molasses, a by-product of the sugar refining process, can be fermented into alcohol. Later, distillation of these alcoholic by-products concentrated the alcohol and removed impurities, producing the first true rums. Until the second half of the 19th century all rums were heavy or dark rums that were considered appropriate for the working poor, unlike the refined double-distilled spirits of Europe. In order to expand the market for rum, the Spanish Royal Development Board offered a prize to anyone who could improve the rum making process. This resulted in many refinements in the process which greatly improved the quality of rum. One of the most important figures in this development process was Don Facundo Bacardi Masso, who moved from Spain to Santiago de Cuba in 1843. Don Facundo's experiments with distillation techniques, charcoal filtering, cultivating of specialized yeast strains, and aging with American oak casks helped to produce a smoother and mellow drink typical of modern light rums. It was with this new rum that Don Facundo founded Bacardi y Compania in 1862.

Ethanol approx. 12 %, Ki-anti

B

Chianti Classico

HS-No.: 22042166

Specification:

Assay (v/v) approx. 10 %
Acid max. 0.0045 %

Appearance of solution . clear, dark-red
Optimal Serving temp. . 16 - 20°C

Loss on drying . max. 88 %

Order-No.
A7835,0750

Quantity
750 ml

Literature: (1) <http://en.wikipedia.org/wiki/Chianti> (as at January 28th 2008). Wikipedia® is a registered trademark of Wikimedia Foundation Inc.

Comment: Chianti is Italy's most famous red wine, which takes its name from a traditional region of Tuscany where it is produced. It used to be easily identified by its squat bottle enclosed in a straw basket, called fiasco ("flask"; pl. fiaschi); however, the fiasco is only used by a few makers of the wine now; most Chianti is bottled in traditionally shaped wine bottles. The first definition of a wine-area called Chianti was made in 1716. It described the area near the villages of Gaiole in Chianti, Castellina in Chianti and Radda in Chianti; the so-called Lega del Chianti and later Provincia del Chianti (Chianti province). In 1932 the Chianti area was completely re-drawn. The new Chianti was a very big area divided in seven sub-areas: Classico, Colli Aretini, Colli Fiorentini, Colline Pisane, Colli Senesi, Montalbano and Rufina. The old Chianti area was then just a little part of the Classico area, being the original area described in 1716 about 40 % of the extension of the Classico sub-area and about 10 % of all Chianti. The popularity and high exportability of this wine at the moment of introduction of the DOC, 1967, was such that many regions of central Tuscany didn't want to be excluded from the use of the name. As a result the Chianti wine-area got about 10 % more territory. Wines labeled Chianti Classico come from the biggest sub-area of Chianti, that sub-area that includes the old Chianti area. The other variants, with the exception of Rufina from the north-east side of Florence and Montalbano in the south of Pistoia, originate in the respective named provinces: Siena for the Colli Senesi, Florence for the Colli Fiorentini, Arezzo for the Colli Aretini and Pisa for the Colline Pisane. In 1996 part of the Colli Fiorentini sub-area was renamed Montespertoli. The Chianti Classico may have a picture of a black rooster (known in Italian as a gallo nero) on the neck of the bottle, which indicates that the producer of the wine is a member of the "Gallo Nero" Consortium. Since 2005 the black rooster is the emblem of the Chianti Classico producers association. Aged Chianti (38 months instead of 4-7), may be labelled as Riserva.

Ethanol min. 10 %, carbonated, dry

B

Prosecco

HS-No.: 22041098

Specification:

Assay (v/v) min. 10 %
Appearance of solution clear, golden
Optimal Serving temp. 6 - 10°C

Loss on drying max. 90 %

Order-No.
A7873,0750

Quantity
750 ml

Literature: (1) <http://en.wikipedia.org/wiki/Prosecco> (as at January 28th 2008). Wikipedia® is a registered trademark of Wikimedia Foundation Inc.

Comment: Prosecco is a variety of white grape grown in the Veneto region of Italy, and also gives its name to the sparkling wine made from the grape. The grape is grown in the Conegliano and Valdobbiadene wine-growing regions north of Venice. Its late ripening has led to its use in dry sparkling (spumante) and semi-sparkling (frizzante) wines, with their characteristic bitter aftertaste. Like other sparkling wines, Prosecco is served chilled. Most commonly it is served unopened, but it also appears in several mixed drinks. It was the original main ingredient in the Bellini cocktail, and it can also replace champagne in other cocktails such as the Poinsettia. Prosecco also features in the Italian mixed drink Sgroppino (with vodka and lemon sorbet). The name "Prosecco" is now protected under European law and can be used only for the wine made from the Prosecco grape in the Conegliano/Valdobbiadene region.

Ethanol D₆ absolute

C

Boiling point 78°C
Density (d 20°C/4°C) .. 0.90
Melting point -114.5°C

C₂D₆O
M = 52.11 g/mol
CAS-No.: 1516-08-1
HS-No.: 28459010
EC-No.: 216-162-2

Storage: RT
under argon
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1170
WGK: nwg
Danger
H225
P210



Specification:

Deuteration degree min. 99 %
Water (K.F.) max. 0.1 %

Order-No.
DS-13,0001
DS-13,0005

Quantity
1 ml
5 ml

Ethanolamine BioChemica

B

Colamine, Monoethanolamine, 2-Aminoethyl alcohol, 2-Aminoethanol

C₂H₇NO
M = 61.08 g/mol
CAS-No.: 141-43-5
HS-No.: 29221100
EC-No.: 205-483-3

Storage: RT
under argon
LGK: 8 B
Disposal: 1

Class / PG: 8/III
UN2491
Danger
H332-H312-H302-H314
P302+P352-P305+P351+P338-P280-P313



Boiling range 167 - 173°C
Melting point 10°C

Specification:

Assay (HPLC) min. 99 %
Density (20°C) 1.02
Heavy metals max. 0.001 %

Diethanolamine max. 0.5 %
Triethanolamine max. 0.5 %
Loss on drying max. 0.5 %

Order-No.
A2161,0100
A2161,0500

Quantity
100 ml
500 ml

◆ May form precipitate in storage if in contact with air!

Literature: (1) Szewczyk, B. & Kozloff, L.M. (1985) *Anal. Biochem.* **150**, 403-407

(2) Westermann, B. *et al.* (1995) *EMBO J.* **14**, 3452-3460

(3) Kiss, Z. & Crilly, K.S. (1995) *FEBS Lett.* **357**, 279-282

(4) Kiss, Z. & Tomono, M. (1995) *FEBS Lett.* **358**, 243-246

A method for the efficient blotting of strongly basic proteins from sodium dodecyl sulfate-polyacrylamide gels to nitrocellulose.
The role of the GrpE homologue, Mge1p, in mediating protein import and protein folding in mitochondria.
Ha-Ras stimulates uptake and phosphorylation of ethanolamine: inhibition by wortmannin.
Wortmannin inhibits carcinogen-stimulated phosphorylation of ethanolamine and choline.

Comment: Strongly basic proteins cannot be transferred efficiently to nitrocellulose from SDS-polyacrylamide gels by standard blotting techniques. The transfer efficiency is dramatically increased by the use of an alkaline transfer buffer, like 25 mM AMPPO (pH 9.5) or 25 mM CAPSO (pH 10.0) or 25 mM ethanolamine/glycine (pH 9.5; ref. 1). In another application, ethanolamine is used for stopping the covalent coupling of antibodies to protein A-Sepharose (with 200 mM ethanolamine, pH 8.0; ref. 2). Ethanolamine is a component of the membrane lipid phosphatidylethanolamine. The carcinogens Benzo[a]pyrene and 7,12-Dimethylbenzo[a]anthracene and the phorbol ester TPA increase the release of phosphatidylethanolamine and the subsequent phosphorylation of ethanolamine. The oncogene product Ha-ras stimulates the uptake and phosphorylation of ethanolamine, too. Wortmannin, an inhibitor of phosphatidylinositol-3 kinase inhibits the effects of the carcinogens and of Ha-ras (3, 4).

Ether see Diethyl ether Page 278

Ethidium bromide *BioChemica*

B

Homidium bromide, 2,7-Diamino-10-ethyl-9-phenylphenanthridium bromide

C₂₁H₂₀BrN₃
M = 394.33 g/mol
CAS-No.: 1239-45-8
HS-No.: 29339980
EC-No.: 214-984-6

Storage: RT
LGK: 6.1 A
Disposal: 9

Class / PG: 6.1/I
UN2811
WGK: 3*
Danger
H302-H341-H330
P281-P310-P309-P305+P351+P338-
P304+P340-P302+P352



Melting point 248 - 252°C
Solubility (25°C) 40 g/L (H₂O)

Specification:

Assay (titr.) min. 98 %
λ_{max} (MeOH) 524 - 527 nm
E 1 %/1 cm, λ_{max} 150 - 160
Loss on drying max. 5.0 %

Solubility (1 %; H₂O) ... clear, red
NH₄Br max. 0.1 %

Order-No.	Quantity
A1151,0001	1 g
A1151,0005	5 g
A1151,0010	10 g

Literature: (1) Waring, M. (1975) in *Antibiotics* Vol. III, 141-165 (J.W. Corcoran & F.E. Hahn eds.) Springer - Verlag: Review article about ethidium and propidium.
(2) Lunn, G. & Sansone, E.B. (1987) *Anal. Biochem.* **162**, 453-458
(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press. Cold Spring Harbor, New York.
(4) Gärtner, U. et al. (1996) *Anal. Biochem.* **243**, 194-196
(5) Lucey, M.J. et al. (1997) *BioTechniques* **23**, 780-782
(6) Bonasera, V. et al. (2007) *BioTechniques* **43**, 173-176

Ethidium bromide: Destruction and decontamination of solutions.
Apparent degradation of cleaved genomic DNA may be an ethidium bromide prestaining artifact.
Reducing the ethidium bromide quantity in agarose gel electrophoresis.
Protocol for high-sensitivity/long linear-range spectrofluorimetric DNA quantification using EtBr.

Comment: Ethidium bromide is the most commonly used dye for staining DNA during or after polycrylamide or agarose gel electrophoresis. Excitation with light at a wave length of 254 nm is absorbed by the DNA and transferred to ethidium bromide. Excitation at 366 nm directly excites the dye (3). An aqueous stock solution is prepared at a concentration of 10 mg/ml and employed at 0.2 - 0.5 µg/ml (5). Staining is performed after the gel run (especially PAGE) or during the gel run (agarose). The latter allows the observation of the gel run by control under UV light. Ethidium bromide is added to the agarose solution. Please note, that 'prestaining' may lead to artifacts (4).
In another application, ethidium bromide may be used to sensitively quantify DNA by spectrofluorimetry. Excitation at 250 nm with UV light and an emission at 605 nm, the sensitivity is even better as compared to the dye Hoechst 33258. At a concentration of 0.5 µg/ml EtBr, the detection limit of 10 ng/ml DNA is reached with a linear range of measurement from 20 to 1250 ng/ml (6).
Store the stock solution at +4°C protected from light.
Caution: Ethidium bromide is a powerful mutagen and is moderately toxic. Gloves should be worn when working with solutions that contain this dye, and a mask should be worn when weighing ethidium bromide.

Ethidium bromide - Solutions

2,7-Diamino-10-ethyl-9-phenylphenanthridium bromide - Solution

HS-No.: 38220000
EC-No.: 214-984-6

Storage: 2-8°C
LGK: 6.1 B
Disposal: 9

Ethidium bromide - Solution 1 % *BioChemica*

B

filtered

Class / PG: 6.1/III
UN2810
WGK: 2
Danger
H341-H302-H330
P260-P309+P311-P281



Composition:

Ethidium bromide 10 mg/ml

Specification:

pH (H₂O; 20°C) 5.0 - 6.0

Order-No.	Quantity
A1152,0025	25 ml
A1152,0100	100 ml

Ethidium bromide - Solution 0.07 % "dropper-bottle"

B

filtered

WGK: 1

Composition:

Concentration 0.7 mg/ml

Order-No.	Quantity
A2273,0005	5 ml
A2273,0015	15 ml

2-Ethoxybenzoic acid pure

C

Boiling point 174 - 176°C
Melting point 19 - 20°C

C₉H₁₀O₃
M = 166.18 g/mol
CAS-No.: 134-11-2
HS-No.: 29189990
EC-No.: 205-130-3

Storage: RT
LGK: 10 - 13
Disposal: 4

P262

Specification:

Assay (titr.) min. 98 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A4301,0100	100 ml
A4301,0250	250 ml

2-Ethoxyethanol for synthesis

C

Ethylglycol, Ethyleneglycol monoethyl ether

$C_4H_{10}O_2$
M = 90.12 g/mol
 CAS-No.: 110-80-5
 HS-No.: 29094400
 EC-No.: 203-804-1

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/III
 UN1171
 WGK: 1
 Danger
 H312-H302-H360FD-H226-H332
 P271-P302+P352-P308+P313-P201-P210



Boiling point 135°C
 Density (d 20°C/4°C) ... 0.93
 Melting point -100°C
 Solubility water-soluble

Specification:

Assay (HPLC) min. 99 %
 Peroxides max. 0.005 %
 Water (K.F.) max. 0.2 %

Order-No.	Quantity
A0413,1000	1 L
A0413,10006	6 x 1 L
A0413,2500	2.5 L
A0413,25004	4 x 2,5 L
A0413,5000	5 L
A0413,9010	10 L

Ethyl acetate

Acetic acid ethylester, Acetic ester

$C_4H_8O_2$
M = 88.11 g/mol
 CAS-No.: 141-78-6
 HS-No.: 29153100
 EC-No.: 205-500-4

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1173
 WGK: 1
 Danger
 EUH066-H319-H336-H225
 P240-P305+P351+P338-P210



Boiling point 77°C
 Density (d 20°C/4°C) ... 0.90
 Melting point -83°C
 Solubility (20°C) 80 g/L (H₂O)
 n 20°C/D 1.3723

Ethyl acetate Peptide sequencing grade

B

Specification:

Assay (HPLC) min. 99.8 %
 Acidity/Alkalinity max. 0.0015 meq/g
 Non-volatile matter max. 0.0002 %
 Water (K.F.) max. 0.02 %

A (1 cm/water HPLC grade)
 256 nm max. 1.0
 275 nm max. 0.025
 325 nm max. 0.005

Order-No.	Quantity
A2356,0500	500 ml
A2356,1000	1 L
A2356,2500	2.5 L

Ethyl acetate Residue analysis grade

C

Specification:

Assay (HPLC) min. 99.8 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.05 %
 GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
 GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1614,2500	2.5 L
A1614,25004	4 x 2,5 L

Ethyl acetate HPLC grade

C

Specification:

Assay (HPLC) min. 99.8 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.02 %

A (1 cm/water HPLC grade)
 260 nm max. 0.15
 270 nm max. 0.05
 280 nm max. 0.025
 300 nm max. 0.005

Order-No.	Quantity
A1616,1000	1 L
A1616,10006	6 x 1 L
A1616,2500	2.5 L
A1616,25004	4 x 2,5 L

Ethyl acetate LC-MS grade

C

Specification:

Assay (HPLC) min. 99.8 %
 Acidity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Loss on drying max. 0.02 %
 Ca max. 0.1 ppm
 K max. 0.1 ppm
 Mg max. 0.1 ppm
 Na max. 0.1 ppm
 GC/ECD individual signals (lindane standard) max. 5 ng/L
 GC/NPD individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A9035,1000	1 L
A9035,10006	6 x 1 L
A9035,2500	2.5 L
A9035,25004	4 x 2,5 L

Ethyl acetate BioChemica

B

Specification:

Assay (HPLC) min. 99.8 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Heavy metals (as Pb) max. 0.0005 %
 Non-volatile matter max. 0.001 %
 Ethanol max. 0.1 %

Methanol max. 0.02 %
 Methyl acetate max. 0.02 %
 Water (K.F.) max. 0.05 %

Order-No.	Quantity
A3706,0500	500 ml
A3706,1000	1 L
A3706,2500	2.5 L
A3706,5000	5 L

Ethyl acetate dried, p. A.

C

Specification:

Assay (HPLC)	min. 99.8 %
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.01 %

Order-No.	Quantity
A0560,0500	500 ml
A0560,1000	1 L

* This product contains molecular sieve as a drying agent!

Ethyl acetate p. A.

C

Specification:

Assay (HPLC)	min. 99.8 %	Fe	max. 0.00001 %
Acidity/Alkalinity	max. 0.0005 meq/g	K	max. 0.00001 %
Non-volatile matter	max. 0.001 %	Mg	max. 0.00001 %
Total P	max. 0.00001 %	Na	max. 0.0002 %
Total S	max. 0.00001 %	Ni	max. 0.00001 %
Total Si	max. 0.00002 %	Pb	max. 0.00001 %
Ethanol	max. 0.1 %	Zn	max. 0.00001 %
Methanol	max. 0.02 %		
Methyl acetate	max. 0.02 %		
Water (K.F.)	max. 0.05 %		
Cr	max. 0.00001 %		

Order-No.	Quantity
A0859,0500	500 ml
A0859,1000	1 L
A0859,10006	6 x 1 L
A0859,2500	2.5 L
A0859,25004	4 x 2,5 L
A0859,5000	5 L
A0859,9010	10 L
A0859,9025BK	25 L
A0859,9025PE	25 L

Ethyl acetate pure Ph. Eur.

C

Specification:

Assay (acidimetr.)	min. 99 %
Acidic reacting subst.	complies
Appearance of solution	complies
Behaviour against H ₂ SO ₄	complies
Identity	complies
Refractive index	1.370 - 1.373
Related subst.	max. 0.2 %
Relative density	0.898 - 0.902
Res. after evaporation	max. 0.003 %
Water (K.F.)	max. 0.1 %

Order-No.	Quantity
A3550,1000	1 L
A3550,10006	6 x 1 L
A3550,2500	2.5 L
A3550,25004	4 x 2,5 L
A3550,5000	5 L
A3550,9010	10 L
A3550,9025BK	25 L
A3550,9025PE	25 L

Ethyl acetate pure

C

Specification:

Assay (HPLC)	min. 99 %
Acidity/Alkalinity	max. 0.01 meq/g
Non-volatile matter	max. 0.002 %
Ethanol	max. 0.1 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A0681,1000	1 L
A0681,10006	6 x 1 L
A0681,2500	2.5 L
A0681,25004	4 x 2,5 L
A0681,5000	5 L
A0681,9010	10 L
A0681,9025BK	25 L
A0681,9025PE	25 L

Ethyl acetate for synthesis

C

Specification:

Assay (HPLC)	min. 98 %
Acidity/Alkalinity	max. 0.05 meq/g
Non-volatile matter	max. 0.005 %
Ethanol	max. 0.25 %
Fe	max. 0.001 %

Order-No.	Quantity
A2381,1000	1 L
A2381,10006	6 x 1 L
A2381,2500	2.5 L
A2381,25004	4 x 2,5 L
A2381,5000	5 L
A2381,9010	10 L
A2381,9025BK	25 L
A2381,9025PE	25 L

Ethyl acetate Technical grade

C

Specification:

Assay (HPLC)	approx. 98 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A3504,2500	2.5 L
A3504,25004	4 x 2,5 L
A3504,5000	5 L
A3504,9010	10 L
A3504,9025BK	25 L
A3504,9025PE	25 L

Ethyl alcohol see Ethanol ≤ 70 % Page 335

Ethyl 3-aminobenzoate methanesulfonate salt see 3-Aminobenzoic acid ethyl ester methanesulfonate *BioChemica* Page 87

N-Ethyl-N'-(3-dimethylaminopropyl)-carbodiimide hydrochloride see EDC hydrochloride *BioChemica* Page 313

Ethylene chloride see 1,2-Dichloroethane Page 274

Ethylenediamine p. A.

C

1,2-Diaminoethane, 1,2-Ethanediamine

$C_2H_8N_2$
 $M = 60.10$ g/mol
 CAS-No.: 107-15-3
 HS-No.: 29212100
 EC-No.: 203-468-6

Storage: RT
 LGK: 3 A
 Disposal: 5

Class / PG: 8(3)/II
 UN1604
 WGK: 2
 Danger
 H226-H302-H334-H317-H314-H312
 P304+P340-P280-P305+P351+P338-
 P302+P352



Specification:

Assay (HPLC) min. 99 %
 Refractive index (589 nm; 20°C)
 1.455 - 1.458
 Residue after evaporation .. max. 0.05 %

Loss on drying max. 0.5 %
 Ca max. 0.0005 %
 Cu max. 0.0001 %
 Fe max. 0.0001 %

Mn max. 0.0001 %
 Ni max. 0.0001 %
 Pb max. 0.0001 %

Order-No.	Quantity
A0382,0500	500 ml
A0382,1000	1 L
A0382,2500	2.5 L

Ethylenediaminetetraacetic acid calcium magnesium salt see EDTA calcium magnesium salt pure Page 313
 Ethylenediaminetetraacetic acid see EDTA Page 313
 Ethylenediaminetetraacetic acid dipotassium salt dihydrate see EDTA dipotassium salt dihydrate *BioChemica* Page 314
 Ethylenediaminetetraacetic acid disodium salt dihydrate see EDTA disodium salt dihydrate Page 314
 Ethylenediaminetetraacetic acid tetrasodium salt dihydrate see EDTA tetrasodium salt dihydrate Page 317
 Ethylenediaminetetraacetic acid tripotassium salt dihydrate see EDTA tripotassium salt dihydrate pure Page 317
 Ethylene dichloride see 1,2-Dichloroethane Page 274
 Ethylenedinitrilotetraacetic acid see EDTA Page 313
 Ethylenedinitrilotetraacetic acid dipotassium salt dihydrate see EDTA dipotassium salt dihydrate *BioChemica* Page 314
 Ethylenedinitrilotetraacetic acid disodium salt dihydrate see EDTA disodium salt dihydrate Page 314
 Ethylenedinitrilotetraacetic acid tetrasodium salt dihydrate see EDTA tetrasodium salt dihydrate Page 317
 Ethylenedinitrilotetraacetic acid tripotassium salt dihydrate see EDTA tripotassium salt dihydrate pure Page 317
 Ethylenedioxy-bis-(ethylenenitrilo)-tetraacetic acid see EGTA Molecular biology grade Page 318

Ethylene glycol

Glycol, 1,2-Ethanedial

$C_2H_6O_2$
 $M = 62.07$ g/mol
 CAS-No.: 107-21-1
 HS-No.: 29053100
 EC-No.: 203-473-3

Storage: RT
 LGK: 10 - 13
 Disposal: 1

WGK: nwg
 hygroscopic
 Warning
 H302
 P264-P301+P312-P330



Boiling point 196°C
 Density (d 20°C/4°C) .. 1.11
 Melting point -12°C
 n 20°C/D 1.4318

Ethylene glycol *BioChemica*

B

Specification:

Assay (HPLC) min. 99.5 %
 Aldehydes max. 0.002 meq/g
 Acidity max. 0.002 meq/g
 Insoluble matter complies

Aldehydes max. 0.01 %
 Water (K.F.) max. 0.1 %
 Chloride max. 0.0001 %

Order-No.	Quantity
A3682,1000	1 L
A3682,2500	2.5 L

Ethylene glycol p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
 Acidity max. 0.0002 meq/g
 Aldehydes max. 0.01 %
 Water (K.F.) max. 0.1 %
 Chloride max. 0.0001 %
 Cu max. 0.0001 %
 Fe max. 0.0001 %

Mn max. 0.0001 %
 Pb max. 0.0001 %

Order-No.	Quantity
A0899,1000	1 L
A0899,10006	6 x 1 L
A0899,2500	2.5 L
A0899,25004	4 x 2.5 L
A0899,5000	5 L
A0899,9010	10 L

Ethylene glycol pure

C

Specification:

Assay (HPLC) min. 99 %
 Acidity max. 0.05 meq/g
 Aldehydes max. 0.1 %
 Water (K.F.) max. 0.5 %
 Chloride max. 0.0005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Mn max. 0.0005 %
 Pb max. 0.0005 %

Order-No.	Quantity
A1643,1000	1 L
A1643,10006	6 x 1 L
A1643,2500	2.5 L
A1643,25004	4 x 2.5 L
A1643,5000	5 L
A1643,9010	10 L
A1643,9025	25 L

Ethylene glycol Technical grade

C

Specification:

Assay (HPLC) approx. 98 %
 Water (K.F.) max. 1 %

Order-No.	Quantity
A0430,2500	2.5 L
A0430,25004	4 x 2.5 L
A0430,5000	5 L
A0430,9010	10 L
A0430,9025	25 L

Ethylene glycol - Technical grade with corrosion inhibitor

C

Specification:

Assay approx. 98 %

Order-No.	Quantity
A5109,2500	2.5 L
A5109,25004	4 x 2,5 L
A5109,5000	5 L

Ethylene glycol : Water - Mixture 1 : 1

C

HS-No.: 38220000

Storage: RT

Order-No.	Quantity
A2865,2500	2.5 L
A2865,25004	4 x 2,5 L
A2865,5000	5 L
A2865,9010	10 L

Ethylene glycol-bis-(β-aminoethyl ether)-N,N,N',N'-tetraacetic acid see EGTA Molecular biology grade Page 318

Ethylene glycol bis(succinimidyl succinate) see EGS Page 318

Ethylene glycol bis(sulfosuccinimidylsuccinate) disodium salt see Sulfo-EGS Page 779

Ethylene glycol monobutyl ether*2-Butoxy ethanol, Butyl glycol* $C_6H_{14}O_2$ $M = 118.18$ g/mol

CAS-No.: 111-76-2

HS-No.: 29094300

EC-No.: 203-905-0

Storage: RT

LGK: 10 - 13

Disposal: 1

WGK: 1

Warning

H312-H332-H302-H315-H319

P305+P351+P338-P302+P352



Boiling point 170 - 172°C

Density (d 20°C/4°C) .. 0.90

Melting point -70°C

Ethylene glycol monobutyl ether p. A.

C

Specification:

Assay (HPLC) min. 99 %
 Butanol max. 0.1 %
 Water (K.F.) max. 0.1 %
 Chloride max. 0.0005 %

Cu max. 0.0005 %
 Fe max. 0.0005 %
 Mn max. 0.0005 %
 Pb max. 0.0005 %

Order-No.	Quantity
A3205,0500	500 ml
A3205,1000	1 L
A3205,2500	2.5 L

Ethylene glycol monobutyl ether for synthesis

C

Specification:

Assay (HPLC) min. 98 %
 Water (K.F.) max. 0.2 %

Order-No.	Quantity
A2092,1000	1 L
A2092,2500	2.5 L
A2092,25004	4 x 2,5 L
A2092,5000	5 L
A2092,9010	10 L
A2092,9025	25 L

Ethleneglycol monoethyl ether see 2-Ethoxyethanol for synthesis Page 339

Ethylene glycol monoisopropyl ether for synthesis

C

 $C_5H_{12}O_2$ $M = 104.15$ g/mol

CAS-No.: 109-59-1

HS-No.: 29094400

EC-No.: 203-685-6

Storage: RT

LGK: 3 A

Disposal: 1

Class / PG: 3/III

UN3271

WGK: 1

Warning

H332-H319-H312

P302+P352-P305+P351+P338

**Specification:**

Assay (HPLC) min. 98 %
 Density (d 20°C/4°C) 0.903 - 0.904
 Peroxides (as H_2O_2) max. 0.005 %
 Water (K.F.) max. 0.3 %

Order-No.	Quantity
A4863,2500	2.5 L
A4863,25004	4 x 2,5 L
A4863,5000	5 L
A4863,9010	10 L
A4863,9025	25 L

Ethylene glycol phenyl ether see 2-Phenoxyethanol Page 619

Ethylene tetrachloride see Tetrachloroethylene pure Page 804

Ethylene trichloride see Trichloroethylene Page 830

Ethyl ether see Diethyl ether Page 278

Ethylglycol see 2-Ethoxyethanol for synthesis Page 339

Ethyl green see Methyl green (C.I. 42590) Page 539

Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC

C

4-Hydroxybenzoic acid ethylester,
Ethylparaben

$C_9H_{10}O_3$
 $M = 166,18$ g/mol
CAS-No.: 120-47-8
HS-No.: 29182900
EC-No.: 204-399-4

Storage: RT
protected from light
LGK: 10 - 13

WGK: 1

Solubility (25°C) 1.7 g/L (H₂O)

Specification:

Assay (titr.) 98.0 - 102.2 %
Acidity complies
Appearance of solution complies
Color of solution complies

Heavy metals (as Pb) ... max. 0.001 %
Identity (IR) complies
Loss on drying max. 0.5 %
Melting point 115 - 118°C

Organic impurities max. 1.0 %
Related subst. complies
Sulfated ash ... max. 0.1 %

Order-No.	Quantity
A6593,0250	250 g
A6593,1000	1 kg
A6593,5000	5 kg

1-Ethyl-2-((1E,3E)-3-(1-(3-iodoacetamido)propyl)-3,3-dimethylindolin-2-ylidene)prop-1-enyl)-3,3-dimethyl-3H-indolium iodide see Colorada 550 - 599 nm (purple spectrum) Page 231

N-Ethylmaleimide BioChemica

B

NEM, 1-Ethyl-3-pyrrolin-2,5-dione

$C_6H_7NO_2$
 $M = 125,13$ g/mol
CAS-No.: 128-53-0
HS-No.: 29251995
EC-No.: 204-892-4

Storage: 2-8°C
LGK: 8 B
Disposal: 3

Class / PG: 6.1(8)/II
UN2928
WGK: 3
Danger
H317-H311-H314-H300
P280-P305+P351+P338-P262



Melting point 43 - 45°C
Solubility (H₂O) approx. 1 g/L

Specification:

Assay (HPLC) min. 99 %
Heavy metals max. 0.001 %
Sulfated ash max. 0.05 %

Order-No.	Quantity
A2251,0005	5 g
A2251,0025	25 g

Literature: (1) Riordan, J.F. & Vallee, B. L. (1972) *Methods Enzymol.* **25**, 449-456

(2) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

(3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page 17.2.6 Suppl. 22 John Wiley & Sons, New York.

(4) Akabas, M.H. et al. (1992) *Science* **258**, 307-310

Reactions with N-Ethylmaleimide and p-Mercuribenzoate.

Preparation of plant extracts.

Acetylcholine receptor channel-structure investigation with cysteine exchange mutants.

Comment: N-Ethylmaleimide (NEM) is a so-called sulphydryl-reagent and employed for the examination of sulphydryl groups in the reactive center of enzymes (1). The reaction with the sulfur groups is stable, even against acid hydrolysis. During the reaction of NEM and a sulphydryl group S-(Ethylsuccinimido)-cysteine is formed. Acid hydrolysis transforms this product into S-Succinylcysteine and ethylamine and this substances can be determined quantitatively. NEM has an absorption maximum at 305 nm, which is suppressed by binding to a sulphydryl group. The pH value (pH 6.0 - 7.0) is critical for the reaction, because outside this pH range, NEM hydrolysis to N-Ethylmaleamic acid (1).

The use of NEM as a protease inhibitor (cysteine(thiol) proteases) is limited, because reducing agents (DTT, DTE, β-mercaptoethanol etc.) inactivate it. These reducing agents are part of all standard homogenisation buffers, at especially high concentrations for the preparation of plant extracts (2). Protease-inhibitor stock solutions are prepared at a concentration of 2 M (200X concentrated). Dissolve 25 g NEM per 100 ml ethanol and dispense in aliquots and store at -20°C (3).

2-(Ethylmercury-mercaptop)-benzoic acid sodium salt see Thimerosal *BioChemica* Page 812

3-(N-Ethyl-3-methylamino)-2-hydroxypropanesulfonic acid sodium salt see TOOS *BioChemica* Page 823

Ethyl methyl ketone see Methyl ethyl ketone Page 538

N-Ethyl-N-nitrosoarea see N-Nitroso-N-ethylurea Page 575

Ethylparaben see Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC Page 343

1-Ethyl-2-pyrrolidone for synthesis



C

Boiling point 212 - 213°C
Density (20) 1.00 g/cm³

$C_6H_{11}NO$
 $M = 113,16$ g/mol
CAS-No.: 2687-91-4
HS-No.: 29337900
EC-No.: 220-250-6

Storage: RT

WGK: 1

Specification:

Assay min. 98 %
Refractive index 1.4655 - 1.4665
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A7931,1000	1 L
A7931,10006	6 x 1 L
A7931,2500	2.5 L

1-Ethyl-3-pyrrolin-2,5-dione see N-Ethylmaleimide *BioChemica* Page 343

Etzold's staining solution



C

HS-No.: 38220000

Storage: RT

WGK: 1

Composition:

Acetic acid 100 % 20 ml/L
Astra Blue (C.I. 48048) 0.17 g/L
Chrysoidine (C.I. 11270) ... 0.143 g/L
New Fuchsin (C.I. 42520) .. 0.1 g/L

Specification:

$\lambda_{max,1}$ (MeOH) 540 - 560 nm
UV spectrum complies

Order-No.	Quantity
A8126,0100	100 ml
A8126,0250	250 ml

Eufllavine see Acriflavine hydrochloride *BioChemica* Page 51

Evan's blue (C.I. 23860)

B

Direct Blue 53

$C_{34}H_{24}N_6Na_4O_{14}S_4$
 $M = 960.82 \text{ g/mol}$
CAS-No.: 314-13-6
HS-No.: 32041400
EC-No.: 206-242-5

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

Assay (photometr.) min. 85 %
 λ_{max} 605 - 612 nm
Loss on drying max. 12 %

Order-No.	Quantity
A4388,0010	10 g
A4388,0025	25 g

Literature: (1) Twomey, S.L. & Burnett, G.E. (1975) *Clin. Chem.* **21**, 1903-1906

Immunofluorescence Method for Detecting Anti-Mycardial Antibodies, and Its Use in Diagnosing Heart Disease.
Developmental pathway of somatic embryogenesis in *Picea abies* as revealed by time-lapse tracking.

(2) Filonova, L.H. *et al.* (2000) *J. Exp. Botany* **51**, 249-264

Comment: The protoplast viability can be monitored by adding Evans Blue (0.5 % in 0.7 M mannitol). Viable protoplast will appear white or yellowish against a blue background.

Evan's Blue (and trypan blue) were used in the earlier days of direct immunofluorescence and the study of autoantibodies. Evan's blue counterstaining decreases the nonspecific background fluorescence (1). Each was used on tissues/cells at 0.001 % to 0.5 % in water or buffer. Dip the slide with tissues/cells into the dye for 2 to 30 seconds, wash with water/ buffer, coverslip with aqueous medium. They are soluble in aqueous mounting media and diffuse out quickly. Drop the coverslip, wash, restain and coverslip as many times as the tissues/cells can withstand. It does reduce background significantly; both unwanted fluorescence due to the conjugate and autofluorescence due to structural elements in the tissues/cells. The dyes fluoresce red, abolishes the unwanted conjugate staining by energy transfer but has very little effect on desired specific staining. Typically, immunohistologists/cytologists use a red suppression secondary filter, BG 38, to filter out the red fluorescence of the dye and leave a nice black background to enhance the viewing of desired specific staining. (taken from <http://www.uhnresearch.ca/facilities/wcif/PDF/Autofluorescence.pdf>).

Exonuclease III

B

expressed in *E. coli*

HS-No.: 35079090

Storage: -20°C

◆ supplied with reaction buffer (10X)

◆ Application

- Unidirectional nested deletions.
- Site-directed mutagenesis.
- Preparation of strand-specific probes.
- Preparation of single-stranded substrates for dideoxy sequencing.

Specification:

Concentration 40000 - 100000
Units/ml

Order-No.	Quantity
A5205,4000	4 KU
A5205,20000	20 KU

Comment: Exonuclease III is a 3'-5' exonuclease specific for double-stranded DNA. The enzyme catalyzes the stepwise removal of mononucleotides starting from a 3'-OH at nicks, blunt ends, recessed ends and 3'-overhangs of less than 4 bases, yielding nucleoside 5'-phosphates. A limited number of nucleotides are removed during each binding event, resulting in progressive deletions within the population of DNA molecules. Exonuclease III activity depends partially on helical structure and displays sequence dependence (C<A=T>G). Temperature, salt concentration and the ratio of enzyme to DNA greatly affect enzyme activity, requiring reaction conditions to be adjusted to specific applications. Exonuclease III degrades DNA from 3'-phosphate ends due to its intrinsic 3'-phosphatase activity. In addition, the enzyme has apurinic endonuclease activity and ribonuclease H activity. Exonuclease III is used in conjunction with S1 nuclease for unidirectional deletion of sequences from the termini of DNA fragments. This product has been purified from an *E. coli* strain harbouring a plasmid with the *exoIII* gene. It is supplied with a 10X Reaction Buffer (500 mM Tris · HCl (pH 7.5 at 30°C), 100 mM MgCl₂).

Unit Definition: One unit is defined as the amount of enzyme required to produce 1 nmol of acid-soluble nucleotides in 30 minutes at 37°C. The enzyme can be inactivated by incubation at 70°C for 20 minutes.

Expansive see Patulin *BioChemica* Page 593

Extraction buffer for luciferase and β-galactosidase assay

B

Lysis buffer for luciferase assays

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

DTT * 2 mM (final conc.)
EDTA · Na₂ 2 mM
Glycerol 10 %
Tris · H₃PO₄ (pH 7.8) 25 mM
Triton® X-100 1 %

Order-No.	Quantity
A3760,0100	100 ml
A3760,0250	250 ml
A3760,0500	500 ml

* Add directly before use; not supplied

FABP see Fatty Acid Binding Protein (FABP), human Page 345

FAD-Na₂ see Flavin adenine dinucleotide disodium salt dihydrate *BioChemica* Page 351

FAH₂ see Dihydrofolic acid *BioChemica* Page 281

FALGPA BioChemica

B

N-[3-(2-Furylacryloyl)]-L-leucyl-glycyl-L-prolyl-L-alanine

C₂₃H₃₂N₄O₇
M = 476.53 g/mol
CAS-No.: 78832-65-2
HS-No.: 29321900

Storage: 2-8°C

Specification:

Assay (from N) min. 90 %
Solubility (5 %; MeOH) clear, slightly yellow

Order-No.	Quantity
A0952,0005	5 mg
A0952,0025	25 mg

Literature: (1) Van Wart, H.E. & Steinbrink, D.R. (1981) *Anal. Biochem.* **113**, 356-365

A continuous spectrophotometric assay for *Clostridium histolyticum* Collagenase.

Comment: FALGPA is a substrate of the *C. histolyticum* - collagenase and better cleavable than all other known substrates. It is not cleaved by trypsin, thermolysin or elastase. The determination is based on the spectrophotometric measurement of the cleavage of FALGPA, which can be monitored by a decreasing absorption in the range of 324 - 345 nm. The solubility is 8 mM, the pH optimum for the cleavage 7.8 in tricine buffer. Tris buffers at pH > 7.5 inhibit collagenase. FALGPA is not suited as a substrate for collagenases from vertebrates and mammals, because they possess a different substrate specificity than the bacterial collagenases.

Farcinicin see Thiolutin BioChemica Page 813

Fast Green FCF (C.I. 42053)

B

Food Green 3

C₃₇H₃₄N₂Na₂O₁₀S₃
M = 808.86 g/mol
CAS-No.: 2353-45-9
HS-No.: 32041900
EC-No.: 219-091-5

Storage: RT
LGK: 10 - 13

WGK: 3*
Warning
H341
P281



Specification:

λ_{max} (50 %, EtOH) 622 - 626 nm
E 1 %/1 cm, λ_{max} 1360 - 1610
Loss on drying max. 10 %

Order-No.	Quantity
A1401,0005	5 g
A1401,0010	10 g
A1401,0025	25 g

Literature: (1) Gorovsky, M.A. *et al.* (1970) *Anal. Biochem.* **35**, 359-370
(2) Bertolini, M.J. *et al.* (1974) *Anal. Biochem.* **71**, 6-13

(3) Wilson, C.M. (1979) *Anal. Biochem.* **96**, 263-278

(4) Allen, R.E. *et al.* (1980) *Anal. Biochem.* **104**, 494-498

Simple method for quantitative densitometry of polyacrylamide gels using Fast green. Staining and destaining polyacrylamide gels: A comparison of Coomassie® blue and Fast green protein dyes. Studies and critique of Amido black 10 B, Coomassie® blue R and Fast green FCF as stains for proteins after polyacrylamide gel electrophoresis. Staining of proteins in IEF gels with Fast Green.

Comment: The staining with Fast Green differs from author to author, like those for Coomassie® brilliant blue. Here we just present three examples:

- (Ref. 1) Staining with 1 % (w/v) Fast Green in 7 % acetic acid for 2 hours at +4°C or room temperature. Destaining in 7 % acetic acid with several changes of the acid for more than 48 - 72 hours.
- (Ref. 2) Staining with 0.25 % (w/v) Fast Green in 10 % acetic acid for 2.5 - 3 hours at room temperature. Destaining in 10 % acetic acid or 10 % acetic acid / 30 % ethanol for 18 hours at room temperature and 18 hours at 37°C or 3 hours at 60°C and 15 hours at room temperature.
- (Ref. 4) Staining in 0.25 % (w/v) Fast Green in 10 % acetic acid (2x filtered) for 5 minutes. Destaining in 10 % acetic acid and 30 % methanol between 24 - 72 hours. (Note: Alcohol leads to shrinking of polyacrylamide gels).

Fastidious Anaerobe Isolation Agar Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Buffers 0.75 g/L
Glucose 1.0 g/L
Growth promoters 0.83 g/L
L-Arginine 0.5 g/L

L-Cysteine 0.5 g/L
Peptones, extracts 23.4 g/L
Sodium chloride 5.0 g/L
Starch soluble 1.0 g/L
Vitamins 0.011 g/L

Specification:

pH before autoclaving
..... approx. 7.2 (20°C)

Order-No.	Quantity
A5744,0500	500 g
A5744,5000	5 kg

Comment: This is a solid medium for the preparation of blood agar designed to give optimum growth of nutritionally exacting anaerobes.

Directions: Suspend 46 g in 950 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 50 ml of sterile defibrinated blood. Mix well before pouring. Store the prepared medium at 2-8°C.

Fatty Acid Binding Protein (FABP), human

B

FABP

HS-No.: 38220000

Storage: 2-8°C

supplied liquid in 30 mM Tris · HCl, pH 8.0, 150 mM NaCl
from human heart tissue

Specification:

Assay (SDS-PAGE) min. 95 %
Protein (280 nm) min. 1 mg/ml

Order-No.	Quantity
A6953,0050	50 µg
A6953,0250	250 µg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Fehling's Reagents

Fehling's Reagent I

Copper(II)-sulfate solution
Reagent for reducing carbohydrates

CAS-No.: 7758-98-7
HS-No.: 28332500

Storage: RT
LGK: 10 - 13
Disposal: 15

WGK: 2
H411
P273



Density (d 20°C/4°C) .. 1.05

Order-No.	Quantity
A2358,0500	500 ml
A2358,1000	1 L
A2358,10006	6 x 1 L
A2358,2500	2.5 L
A2358,25004	4 x 2,5 L

Fehling's Reagent II

Alkaline potassium sodium tartrate - Solution
Reagent for reducing carbohydrates

CAS-No.: 6381-59-5
HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 23

Class / PG: 8/II
UN1719
WGK: 1
Danger
H314
P305+P351+P338-P280-P309+P311



Density (d 20°C/4°C) .. 1.24

Order-No.	Quantity
A0561,0500	500 ml
A0561,1000	1 L
A0561,10006	6 x 1 L
A0561,2500	2.5 L
A0561,25004	4 x 2,5 L

Ferrichloride hexahydrate see Iron(III) chloride hexahydrate Page 459
Ferric nitrate see Iron(III) nitrate nonahydrate Page 460
Ferric sulfate see Iron(II) sulfate heptahydrate Page 461
Ferriprotoporphyrine IX chloride see Hemin porcine Page 400

Ferritin from Heart, human

0.5 mg/ml Protein in 50 mM Tris · HCl, 150 mM NaCl
from human heart

CAS-No.: 9007-73-2
HS-No.: 35040090

Storage: 2-8°C

Specification:
Assay (Electrophoresis) min. 90 %

Order-No.	Quantity
A6989,0100	100 µg
A6989,0500	500 µg

Comment:Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Ferritin from Liver, human

supplied liquid in Sodium chloride buffer, pH 7.5
from human liver

CAS-No.: 9007-73-2
HS-No.: 35040090

Storage: 2-8°C
Do not freeze !

Specification:
Assay min. 96 %
Analysis (native electrophoresis)
..... 1 major band

Order-No.	Quantity
A6952,0100	100 µg
A6952,0001	1 mg

Comment:Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Ferritin from Placenta, human

supplied liquid in 50 mM Tris · HCl, pH 7.5,
150 mM NaCl
from human placenta

CAS-No.: 9007-73-2
HS-No.: 35040090

Storage: 2-8°C
Do not freeze !

Specification:
Assay (Electrophoresis) min. 96 %
Analysis (native electrophoresis)
..... 1 major band

Order-No.	Quantity
A6975,0050	50 µg
A6975,0001	1 mg

Comment:Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Ferritin from Spleen, human

B

supplied liquid in Sodium chloride buffer, pH 7.5
from human spleen

CAS-No.: 9007-73-2
HS-No.: 35040090

Storage: 2-8°C

Specification:

Assay (Electrophoresis) min. 96 %
Analysis (native electrophoresis)
..... 1 major band

Concentration min. 0.5 mg/ml

Order-No.	Quantity
A6963,0100	100 µg
A6963,0001	1 mg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

FES see Zearalenone BioChemica Page 874

α-Fetoprotein (AFP), human

B

supplied liquid in 100 mM PBS, pH 7.4, 0.1 % sodium azide
from human cord serum

HS-No.: 30021010

Storage: 2-8°C
Do not freeze !

Specification:

Assay min. 90 %
Appearance colorless to clear straw

Concentration typ. > 1 mg/ml

Order-No.	Quantity
A6935,0100	100 µg
A6935,0500	500 µg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Fetuin low Endotoxin

B

freeze-dried, low salt content, water-soluble
from fetal calf serum

HS-No.: 35040090
EC-No.: 232-762-7

Storage: -20°C
at -20°C stable for min. 2 years
Shipment: ambient temperature

Specification:

Assay min. 70 %
Endotoxin 0 - 3.0 EU/mg
Protein min. 90 %
pH (3 %) 6.0 - 8.0

Water (K.F) max. 5 %

Order-No.	Quantity
A2783,0500	500 mg
A2783,0001	1 g
A2783,0005	5 g

rHu aFGF bioconfident grade



B

rHu aFGF, recombinant Human basic
acidic Fibroblast Growth Factor
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 18.1 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8568,0010	10 µg
A8568,0050	50 µg
A8568,0100	100 µg

Comment: Recombinant FGF-acidic contains 141 amino acids and a 16 a.a. histidine-based tag for a total length of 157 a.a. and has a predicted molecular mass of 18.1 kDa including his-tag. The recombinant protein migrates with an apparent molecular mass of 25 kDa in SDS-PAGE.

rHu aFGF



B

rHu FGF-a, Fibroblast Growth Factor,
rHu aFGF
lyophilized from a sterile concentrated
solution containing 10 mM sodium
phosphate and 75 mM NaCl, pH7.5
from *E. coli*

M = 15.97 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8230,0010	10 µg
A8230,0050	50 µg

Comment: Recombinant Human acidic Fibroblast Growth Factor (rHu aFGF) is a single-chain polypeptide growth factor that plays a significant role in the process of wound healing and is a potent inducer of angiogenesis. It binds to heparin, which potentiates its biological activity and protects it from proteolysis. The growth factor is an extremely potent inducer of DNA synthesis in a variety of cell types from mesoderm and neuroectoderm lineages, and also has chemotactic and mitogenic activities. Other homologous FGF belonging to the same family are int-2 (FGF-3), FGF-5, FGF-6, K-FGF and KGF (keratinocyte growth factor = FGF-7). All factors are products of different genes, some of which are Oncogene products (FGF-3, FGF-4, FGF-5).

rHu aFGF, as a single, non-glycosylated, polypeptide chain, contains 141 amino acids and has a molecular mass of 15.97 kDa.

rM aFGF

B

recombinant Mouse acidic Fibroblast Growth Factor, rM aFGF, FGF- α lyophilized at 1 mg/ml in 5 mM sodium phosphate, pH 7.5 and 75 mM NaCl from *E. coli*

$M = 15.9$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:
Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8268,0010	10 µg
A8268,0050	50 µg
A8268,1000	1 mg

Comment: We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Recombinant Mouse acidic Fibroblast Growth Factor is one of over 20 members of the FGF family. The fibroblast growth factors play a central role in prenatal development and growth and regeneration of cells during the proliferation and differentiation stages. rM aFGF is a non-glycosylated heparin binding protein comprised of 141 amino acid.

rHu bFGF bioconfident grade

B

recombinant Human basic Fibroblast Growth Factor, rHu bFGF
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 19.5$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8735,0010	10 µg
A8735,0050	50 µg
A8735,0100	100 µg
A8735,1000	1 mg

Comment: Recombinant human FGF basic contains 156 amino acids and a 16 amino acid histidine-based tag for a total length of 172 amino acids and has a predicted molecular mass of 19.5 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 23 and 26 kDa in SDS-PAGE.

FGF-2 see rHu bFGF (155) Page 349

rHu bFGF (147)

B

rHu FGF-b (147), rHu bFGF, recombinant Human basic Fibroblast Growth Factor (147)
lyophilized from a 10 mM sodium phosphate solution, pH 8.0
from *E. coli*

$M = 16.54$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Assay (RP-HPLC) min. 97 %
Endotoxin max. 0.1 EU/µg
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8234,0010	10 µg
A8234,0050	50 µg
A8234,1000	1 mg

Comment: Recombinant Human basic Fibroblast Growth Factor-147 (rHu bFGF (147)) is a single-chain polypeptide growth factor that plays a significant role in the process of wound healing and is a potent inducer of angiogenesis. The growth factor is an extremely potent inducer of DNA synthesis in a variety of cell types from mesoderm and neuroectoderm lineages. It was originally named basic fibroblast growth factor based upon its chemical properties and to distinguish it from acidic fibroblast growth factor. rHu bFGF-147 (FGF-2) produced in *E. coli* is a single, non-glycosylated, polypeptide chain that contains 147 amino acids and has a molecular mass of 16.54 kDa.

rHu bFGF (154)

B

rHu bFGF (154), recombinant Human basic Fibroblast Growth Factor (154), rHu FGF-b (154)
lyophilized at 1 mg/ml in 10 mM sodium phosphate, pH 8.0 and 75 mM NaCl
from *E. coli*

$M = 17.2$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8252,0010	10 µg
A8252,0050	50 µg
A8252,1000	1 mg

Comment: A single-chain polypeptide growth factor that plays a significant role in the process of wound healing and is a potent inducer of angiogenesis. The growth factor is an extremely potent inducer of DNA synthesis in a variety of cell types from mesoderm and neuroectoderm lineages. It was originally named basic fibroblast growth factor based upon its chemical properties and to distinguish it from acidic fibroblast growth factor. Recombinant Human FGF-b (FGF-2) produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 154 amino acids and having a molecular mass of 17.2 kDa.

rHu bFGF (155)



B

rHu FGFb (155), rHu bFGF, HBGF-2, HBGF-2, FGF-2, Prostatropin, recombinant Human Fibroblast Growth Factor

lyophilized from Phosphate-NaCl Buffer

pH 7,4

from *E. coli*

Specification:

Assay min. 95 %

Impurities (SDS-PAGE) max. 2 %

pH 7.4

M = 17.154 kD
HS-No.: 29371900

Storage: -20°C

Order-No.	Quantity
A8263,0010	10 µg
A8263,0050	50 µg
A8263,1000	1 mg

Comment: Recombinant Human basic Fibroblast Growth Factor is a single, non-glycosylated, polypeptide chain containing 155 amino acids.

rHu FGF (21)



B

recombinant Human Fibroblast growth Factor (21)

lyophilized from 10 mM sodium phosphate, pH 7.5 and 100 mM NaCl from *E. coli*

Specification:

Endotoxin max. 0.1 EU/µg

Assay (SDS-PAGE) min. 95 %

M = 19.5 kDa
HS-No.: 29371900

Storage: -20°C

Order-No.	Quantity
A8216,0002	2 µg
A8216,0010	10 µg
A8216,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Recombinant Human Fibroblast Growth Factor-21 (rHu FGF 21) is a single, non-glycosylated polypeptide chain containing 182 amino acids.

rM bFGF



B

recombinant Mouse basic Fibroblast Growth Factor, FGF-b, FGF-2, rM bFGF

lyophilized from 5 mM sodium phosphate, pH 7.5 and 75 mM NaCl from *E. coli*

M = 16.32 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %

Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8276,0002	2 µg
A8276,0010	10 µg
A8276,1000	1 mg

Comment: Mouse basic FGF is a single-chain polypeptide growth factor that plays a significant role in the process of wound healing and is a potent inducer of angiogenesis. Several different forms of the protein exist ranging from 18 - 24 kDa in size due to the use of alternative start sites within the fgf-2 gene. It has a 55 percent amino acid residue identity to FGF-1 and has potent heparin-binding activity. The growth factor is an extremely potent inducer of DNA synthesis in a variety of cell types from mesoderm and neuroectoderm lineages. It was originally named basic fibroblast growth factor based upon its chemical properties and to distinguish it from acidic fibroblast growth factor. Other homologous FGF belonging to the same family are int-2 (FGF-3), FGF-5, FGF-6, K-FGF and KGF (keratinocyte growth factor = FGF-7). All factors are products of different genes, some of which are oncogene products (FGF-3, FGF-4, FGF-5). Recombinant Mouse bFGF (FGF-2) produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 145 amino acids and having a molecular mass of 16.320 kDa.

rM FGF-9

B

recombinant Mouse Fibroblast Growth Factor-9

lyophilized at 1 mg/ml in 10 mM sodium phosphate, pH 8.0 and 75 mM NaCl from *E. coli*

M = 23.31 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %

Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8242,0002	2 µg
A8242,0010	10 µg
A8242,0100	100 µg

Comment: Fibroblast growth factor-9 (FGF-9) is a steroid-regulated mitogen and survival factor for nerve and mesenchymal cells, it is an autocrine/paracrine growth factor considered to be important for the growth and survival of motorneurons and prostate. Recombinant Mouse FGF-9 produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 205 amino acids and having a molecular mass of 23.31 kDa.

FGF-a see rM aFGF Page 348

rHu FGF-a see rHu aFGF Page 347

FGF-b see rM bFGF Page 349

rHu FGF-b (147) see rHu bFGF (147) Page 348

rHu FGF-b (154) see rHu bFGF (154) Page 348

rHu FGFb (155) see rHu bFGF (155) Page 349

Fibroblast Growth Factor see rHu aFGF Page 347

recombinant Mouse basic Fibroblast Growth Factor see rM bFGF Page 349

recombinant Human Fibroblast Growth Factor see rHu bFGF (155) Page 349

recombinant Human basic Fibroblast Growth Factor (147) see rHu bFGF (147) Page 348

recombinant Human basic Fibroblast Growth Factor (154) see rHu bFGF (154) Page 348

recombinant Human Fibroblast growth Factor (21) see rHu FGF (21) Page 349

recombinant Mouse Fibroblast Growth Factor-9 see rM FGF-9 Page 349

Fibronectin - Solution Cell culture grade



B

HS-No.: 30021099

Storage: 2-8°C

Specification:

Cell Attachment complies
Fibronectin 1 mg/ml
Sterility complies

Order-No.	Quantity
A8350,0001	1 ml
A8350,0005	5 ml

Ficoll® 400

non-ionic, synthetic polymere of sucrose

M = approx. 400000 g/mol
CAS-No.: 26873-85-8
HS-No.: 39139000
EC-No.: 200-334-9

Storage: RT
LGK: 10 - 13

Ficoll® 400 Molecular Biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 3 %

Order-No.	Quantity
A4969,0010	10 g
A4969,0025	25 g
A4969,0100	100 g

* registered trademark Pharmacia Biotech

Ficoll® 400 BioChemica

B

Specification:

Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 3 %
Solubility (10 %; H₂O) clear, colorless

Order-No.	Quantity
A2252,0010	10 g
A2252,0025	25 g
A2252,0100	100 g

* registered trademark Pharmacia Biotech

Literature: (1) Denhardt, D.T. (1966) *Biochem. Biophys. Res. Com.* **23**, 641-646

A membrane-filter technique for the detection of complementary DNA.

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; p. 9.47-9.55, 6.12. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: Ficoll® 400 is a component of Denhardt's solution (see A2248 and ref. 1, 2 [Page 9.47-9.55]) and several gel loading buffers (2 [Page 6.12]). The addition of Ficoll® 400, sucrose or glycerol increase the density of the loading buffers and facilitate the loading of the sample onto the gel.

Composition of loading buffers: I. 0.25 % Bromophenol blue, 0.25 % xylene cyanol FF, 15 % Ficoll® 400 in water (store at room temperature)

(according to ref. 2) II. *alkaline loading buffer* 300 mM NaOH, 6 mM EDTA, 18 % Ficoll® 400, 0.15 % Bromocresol green, 0.25 % xylene cyanol FF in water (store at +4°C)

Have a look at our 9 different loading buffers.

Field's stain A

C

HS-No.: 38220000

Storage: RT

Warning
H315-H319-H335
P305+P351+P338


Specification:

λ_1 max. (1 cm; H₂O) approx. 660 nm
 λ_2 max. (1 cm; H₂O) approx. 290 nm

Order-No.	Quantity
A6592,0005	5 g
A6592,0025	25 g

Field's stain B

C

HS-No.: 38220000

Storage: RT

Warning
H319-H315-H335
P305+P351+P338


Specification:

λ_1 max. (1 cm; H₂O) approx. 520 nm
 λ_2 max. (1 cm; H₂O) approx. 305 nm
 λ_3 max. (1 cm; H₂O) approx. 255 nm

Order-No.	Quantity
A6600,0005	5 g
A6600,0025	25 g

Firefly Luciferin see D-Luciferin free acid Page 496

First Strand cDNA Synthesis-Kit for RT-PCR

B

RT-PCR First Strand cDNA Synthesis Kit
for Reverse Transcription

HS-No.: 38220000

Storage: -20°C
for long-term storage, store control
RNA at -70°C

◆ premixed solutions for the synthesis of single-stranded cDNA from RNA for use as a PCR template

◆ Kit Reagents for 50 reactions

- RT Reaction Mix
- DTT Solution, 100 mM
- Random Hexamer Primer, 40 µM
- Control RNA (human total RNA), 1 µg/µl
- Primer Mix (human G3PDH amplimere), 10 µM each
- DEPC-treated water

Order-No.
A5204,0050

Quantity
50 reac.

Comment: The Polymerase Chain Reaction (PCR) is a powerful technique for rapid amplification of genes. In addition to amplifying genomic DNA templates, PCR can also be used to amplify cDNA reverse transcribed from RNA to analyze gene expression. Using the First Strand cDNA Synthesis Kit, RNA is reverse transcribed into single-stranded cDNA. The reverse transcriptase (RT) enzyme synthesizes the new cDNA strand at a site determined by the type of primer used: Oligo(dT) primer, random primer or a sequence-specific primer. The First Strand cDNA can then be used as a template for PCR.

The reaction mix supplied, contains buffer, MMLV reverse transcriptase (point mutant lacking RNase H activity), RNase inhibitor, and dNTP's sufficient for 50 reactions. The addition of oligo dT primer gives high sensitivity and the Random hexamer primer adds flexibility.

FITC BioChemica

B

Fluorescein isothiocyanate isomer I

$C_{21}H_{11}NO_5S$
 $M = 389.39$ g/mol
CAS-No.: 3326-32-7
HS-No.: 32049000
EC-No.: 222-042-0

Storage: -20°C
protected from light
Shipment: dry ice
LGK: 10 - 13

Specification:

Assay min. 90 %
Loss on drying max. 2 %

Order-No.
A2162,0250
A2162,0500
A2162,0001

Quantity
250 mg
500 mg
1 g

Fixing salt see Sodium thiosulfate anhydrous Page 755

FK506 BioChemica



B

Tacrolimus, Tacarolimus
aus *Streptomyces tsukubaensis*

$C_{44}H_{69}NO_{12}$
 $M = 804.03$ g/mol
CAS-No.: 104987-11-3
HS-No.: 29419000

Storage: -20°C
hygroscopic

Melting point 127 - 130°C

Specification:

Assay (TLC) min. 98 %
Appearance white crystalline so-
lid
Solubility (10 mg/ml DMSO) clear, colorless

Order-No.
A8600,0001
A8600,0005
A8600,0025

Quantity
1 mg
5 mg
25 mg

Comment: FK506 is soluble in MeOH, EtOH, Acetone, Ethyl acetate, Diethyl ether, Chloroform, Dichloromethane. FK506 is sparingly soluble in Hexane, Petroleum ether and is insoluble in H₂O.

FK520 see Ascomycin BioChemica Page 119

Flagecidin see Anisomycin BioChemica Page 110

Flavin adenine dinucleotide disodium salt dihydrate BioChemica

B

FAD- Na_2 , Riboflavin-5'-adenosine
diphosphate disodium salt dihydrate

$C_{27}H_{31}N_9Na_2O_{15}P_2 \cdot 2H_2O$
 $M = 865.56$ g/mol
CAS-No.: 146-14-5
HS-No.: 29349990
EC-No.: 282-733-8

Storage: 2-8°C
protected from light
LGK: 10 - 13

Specification:

Assay (photometr.) min. 95 %
Water (K.F.) max. 10 %

Order-No.
A2163,0100
A2163,0250
A2163,0500
A2163,0001

Quantity
100 mg
250 mg
500 mg
1 g

Flavin mononucleotide monosodium salt dihydrate *BioChemica*

B

FMN, Riboflavin 5'-phosphate
monosodium salt dihydrate

$C_{17}H_{20}N_4NaO_9P \cdot 2H_2O$
 $M = 514.36$ g/mol
CAS-No.: 130-40-5
HS-No.: 29362300
EC-No.: 204-988-6

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (photometr.) 73.0 - 79.0 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 8 %
Solubility (10 %; H_2O) clear

pH (1 %; H_2O ; 20°C) ... 5.5 - 6.5

Order-No.	Quantity
A0601,0010	10 g
A0601,0025	25 g
A0601,0100	100 g

Florisil® for chromatography 60-100 mesh



C

Adsorbent for chromatography,
Magnesium silicate activated

MgO_3Si
 $M = 100.39$ g/mol
CAS-No.: 1343-88-0
HS-No.: 28399090
EC-No.: 215-681-1

Storage: RT
LGK: 10 - 13
Disposal: 32

WGK: nwg

Specification:

Particle size 60 - 100 mesh

Order-No.	Quantity
A8035,0100	100 g
A8035,0500	500 g

® registered trademark of U.S. Silica Company

rHu FLT-3 L bioconfident grade



B

recombinant Human *Flt3*-ligand
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 19.9$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8742,0010	10 µg
A8742,0050	50 µg
A8742,0100	100 µg
A8742,1000	1 mg

Comment: Recombinant human *Flt3*-ligand contains 156 amino acids and a 16 amino acid Histidine-based tag for a total length of 172 amino acids and has a predicted molecular mass of 19.9 kDa. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 20 and 22 kDa in SDS-PAGE.

rHu FLT-3 L



B

recombinant Human *FLT-3* Ligand
lyophilized without additives
from *E. coli*

$M = 17.6$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Endotoxin max. 0.1 EU/µg
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8257,0002	2 µg
A8257,0010	10 µg
A8257,0100	100 µg

Comment: Recombinant Human *FLT-3* Ligand binds to Fms-Like Tyrosine Kinase-3 (*FLT-3*). *rHu FLT-3* Ligand also stimulates the proliferation of cells expressing murine *FLT-3* receptors. The effects of *FLT-3* ligand are synergized by co-expression of G-CSF, GM-CSF, M-CSF, IL3 and SCF. *FLT-3* Ligand promotes long-term expansion and differentiation of human pro-B-cells in the presence of IL-7 or with a combination of IL-7 and IL-3. *rHu FLT-3* L produced in *E. coli* is a non-glycosylated, polypeptide chain that contains 155 amino acids and has a molecular mass of 17.6 kDa.

rM FLT-3 L



B

Fms-Like Tyrosine Kinase-3-Ligand,
recombinant Mouse *FLT-3* Ligand
lyophilized without additives
from *E. coli*

$M = 16.43$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8280,0002	2 µg
A8280,0010	10 µg
A8280,0100	100 µg

Comment: This ligand binds to Fms-Like Tyrosine Kinase-3 (*FLT-3*). Mouse *FLT3* ligand also stimulates the proliferation of cells expressing mouse *FLT-3* receptors. The effects of *FLT-3* ligand are synergized by coexpression of G-CSF, GM-CSF, M-CSF, IL3 and SCF. *FLT-3* ligand promotes long-term expansion and differentiation of mouse pro-B-cells in the presence of IL7 or in combination of IL7 and IL3. Recombinant Mouse *FLT3*-Ligand produced in *E. coli* is a non-glycosylated, polypeptide chain containing 144 amino acids and having a molecular mass of 16.43 kDa.

recombinant Human FLT-3 Ligand see rHu FLT-3 L Page 352
recombinant Human Flt3-ligand see rHu FLT-3 L bioconfident grade Page 352

Fluorescamine *BioChemica*

B

Fluram
Melting point 153 - 157°C
Specification:
Assay (UV) min. 99 %

$C_{17}H_{10}O_4$
 $M = 278.27$ g/mol
CAS-No.: 38183-12-9
HS-No.: 29329900
EC-No.: 253-814-5
Storage: RT
LGK: 10 - 13

Order-No.	Quantity
A2164,0100	100 mg
A2164,0500	500 mg
A2164,0001	1 g

Fluorescein dilaurate *BioChemica*

B

Fluorescein
Assay min. 97 %
Loss on drying max. 1 %
Solubility (1 %; EtOH) clear
Specification:
Assay min. 97 %
Loss on drying max. 1 %
Solubility (1 %; EtOH) clear

$C_{44}H_{56}O_7$
 $M = 696.91$ g/mol
CAS-No.: 7308-90-9
HS-No.: 29322985
EC-No.: 230-764-2
Storage: RT
WGK: 3

Order-No.	Quantity
A6828,0001	1 g
A6828,0005	5 g

Fluorescein isothiocyanate isomer I see FITC *BioChemica* Page 351
Fluorescein sodium see Uranine AP (C.I. 45350) Page 849
9 α -Fluoro-16 α -methylprednisolone see Dexamethason *BioChemica* Page 269

5-Fluoroorotic acid *BioChemica*

B

5-FOA, 5-Fluorouracil-4-carboxylic acid
Assay (TLC) min. 99 %
Solubility (5 %; 4 M NH_3) clear, slightly yellow
Specification:
Assay (TLC) min. 99 %
Solubility (5 %; 4 M NH_3) clear, slightly yellow

$C_5H_3FN_2O_4$
 $M = 174.09$ g/mol
CAS-No.: 703-95-7
HS-No.: 29335995
Storage: -20°C
LGK: 10 - 13
Warning
H319-H315-H302-H335
P261-P305+P351+P338



Order-No.	Quantity
A1174,0050	50 mg
A1174,0100	100 mg
A1174,0500	500 mg
A1174,0001	1 g

Literature: (1) Winston, F. *et al.* (1984) *Genetics* **107**, 179-197

(2) Boeke, J.D. *et al.* (1984) *Mol. Gen. Genet.* **197**, 345-346

(3) Boeke, J.D. *et al.* (1987) *Methods Enzymol.* **154**, 164-175

(4) McNabb, D.S. *et al.* (1997) *BioTechniques* **22**, 1134-1139

(5) Sikorski, R.S. & Boeke, J.D. (1991) *Methods Enzymol.* **194**, 302-318

Comment: 5-Fluoroorotic acid is a pyrimidine analogue and used for the selection of *Saccharomyces cerevisiae* with mutations in the *URA3*-locus (*ura3*⁻-cells) and *Schizosaccharomyces pombe* (1-4). Wild type strains of yeast or mutants with a plasmid carrying the *URA3*-sequence cannot grow in the presence of 5-FOA. Mutations in the *URA3*-gene result in the loss of activity of the Orotidine-5'-phosphate decarboxylase. The isolation of *ura3*-mutants is achieved by the addition of 500 μ g/ml to 1 mg/ml 5-FOA to the medium, at which concentration of 500 μ g/ml a higher back ground of *URA3*⁺-cells has to be expected. Normally a minimal medium for 5-FOA-selection is used, since in rich medium (YPD) different *URA3*⁺-strains may grow in the presence of 5-FOA (3).

Mutations affecting TY-mediated expression of the *HIS4* gene of *Saccharomyces cerevisiae*.

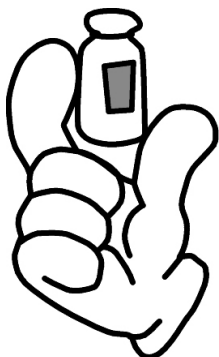
A positive selection for mutants lacking orotidine-5'-phosphate decarboxylase activity in yeast.

5-Fluoroorotic acid as a selective agent in yeast molecular genetics.

Sequential gene disruption in *Schizosaccharomyces pombe*.

5-Fluoroorotic acid as selection tool in yeast molecular genetics.

5-Fluoro-1H-pyrimidine-2,4-dione see 5-Fluorouracil *BioChemica* Page 354
5-Fluoro-2,4(1H,3H)-pyrimidinedione see 5-Fluorouracil *BioChemica* Page 354



TailorMade solutions.

TailorMade powder mixtures.

Customized packing.

5-Fluorouracil BioChemica

B

5-FU, 5-Fluoro-1H-pyrimidine-2,4-dione, 2,4-Dihydroxy-5-fluoropyrimidine, 5-Fluoro-2,4(1H,3H)-pyrimidinedione

$C_4H_3FN_2O_2$
 $M = 130.08$ g/mol
 CAS-No.: 51-21-8
 HS-No.: 29335995
 EC-No.: 200-085-6

Melting point 282 - 286°C (dec.)

Storage: RT
 protected from light

Class / PG: 6.1/III
 UN2811
 WGK: 3
 Danger
 H301
 P301+P312

**Specification:**

Assay min. 99 %

Order-No.	Quantity
A7686,0001	1 g
A7686,0005	5 g
A7686,0010	10 g

- Literature:** (1) van Zant, G. (1984) *J. Exp. Med.* **159**, 679-690
 (2) Szilvassy, S.J. & Cory, S. (1994) *Blood* **84**, 74-83
 (3) Yamane, N. *et al.* (1999) *Cancer* **85**, 309-317
 (4) Yoshikawa, R. *et al.* (2001) *Cancer Res.* **61**, 1029-1037
 (5) Fang, F. *et al.* (2004) *Mol. Cell. Biol.* **24**, 10766-10776
 (6) Noordhuis, P. *et al.* (2004) *Ann. Oncol.* **15**, 1025-1032
 (7) Zhao, X. & Yu, Y.-T. (2007) *Nucleic Acids Res.* **35**, 550-558

Studies of Hematopoietic Stem Cells Spared by 5-Fluorouracil.
 Efficient Retroviral Gene Transfer to Purified Long-Term Repopulating Hematopoietic Stem Cells.
 S-Phase Accumulation Precedes Apoptosis Induced by Preoperative Treatment with 5-Fluorouracil in Human Colorectal Carcinoma Cells.
 Dual Antitumor Effects of 5-Fluorouracil on the Cell Cycle in Colorectal Carcinoma Cells.
 5-Fluorouracil Enhances Exosome-Dependent Accumulation of Polyadenylated rRNAs.
 5-Fluorouracil incorporation into RNA and DNA in relation to thymidylate synthase inhibition of human colorectal cancers.
 Incorporation of 5-fluorouracil into U2 snRNA blocks pseudouridylation and pre-mRNA splicing *in vivo*.

Comment: 5-Fluorouracil (5-FU) is a pyrimidine analog, frequently administered in cancer therapy. Within a cell, it is metabolized to cytotoxic substances and called an antimetabolite. It is incorporated into DNA and RNA (6,7). As a consequence, the cell cycle is interrupted at the S phase and apoptosis is induced, since no more DNA is synthesized (3,4). 5-FU inhibits the thymidylate synthase (6), an important enzyme in thymidine synthesis (methylation of deoxyuracil monophosphate to form deoxythymine monophosphate). The RNA-processing exosome is another target of 5-FU, leading to an accumulation of polyadenylated rRNA (5). For the isolation and enrichment of hematopoietic stem cells from e.g. mice, 5-FU is injected. Dividing cells will be killed, while progenitor / stem cells will survive (1,2). **Solubility:** 5-FU is soluble in water (approx. 12 g/L) and ethanol (approx. 2.9 g/L). An aqueous solution (10 g/L) has a pH value of 4.3 - 5.3.

5-Fluorouracil-4-carboxylic acid see 5-Fluoroorotic acid *BioChemica* Page 353
 Fluram see Fluorescamine *BioChemica* Page 353
 FMN see Flavin mononucleotide monosodium salt dihydrate *BioChemica* Page 352
 Fms-Like Tyrosine Kinase-3-Ligand see rM FLT-3 L Page 352
 5-FOA see 5-Fluoroorotic acid *BioChemica* Page 353

Folic acid crystalline

Vitamin B₁₁, Pteroyl-L-glutamic acid,
 Vitamin B₉

$C_{19}H_{19}N_7O_6$
 $M = 441.41$ g/mol
 CAS-No.: 59-30-3
 HS-No.: 29362900
 EC-No.: 200-419-0

Storage: RT
 protected from light
 LGK: 10 - 13
 Disposal: 3

Folic acid crystalline BioChemica

B

Specification:

Assay min. 96 %
 $\alpha_{20^\circ\text{C/D}}; 0.5\%, 0.1\text{ M NaOH}$
 +18° - +23°
 Solubility 0.002 g/L

Sulfated ash max. 0.2 %
 Loss on drying 5.0 - 8.5 %

Order-No.	Quantity
A2085,0010	10 g
A2085,0025	25 g
A2085,0100	100 g

Folic acid crystalline pure Ph. Eur., USP

C

Specification:

Assay (HPLC; calc. anhydr. subst.)
 97.0 - 102.0 %
 Appearance yellow to orange,
 crystalline
 Identity complies

Impurities, additional ... max. 0.5 %
 Impurities, sum of all additional
 max. 1.0 %
 Impurity A max. 0.5 %
 Impurity D max. 0.6 %

Organic vol. impurities
 complies
 Sulfated ash max. 0.2 %
 Loss on drying 5.0 - 8.5 %

Order-No.	Quantity
A7092,0025	25 g
A7092,0100	100 g

Folin-Ciocalteu's phenol reagent

B

Density (20°C) 1,24 g/cm³

HS-No.: 38220000

Storage: RT
 LGK: 8 B
 Disposal: 2

Class / PG: 8/III
 UN3264
 WGK: 1

Order-No.	Quantity
A5084,0100	100 ml
A5084,0250	250 ml
A5084,0500	500 ml

Folinic acid calcium salt pentahydrate

B

Calcium folinate, Citrovorum factor, Leucovorin, 5-Formyl-5,6,7,8-tetrahydropteroyl-L-glutamic acid

$C_{20}H_{21}CaN_7O_7 \cdot 5H_2O$
M = 601.58 g/mol
 CAS-No.: 1492-18-8
 HS-No.: 29362900
 EC-No.: 216-082-8

Storage: RT

Danger
 H315-H317-H319-H335-H334
 P342+P311-P280-P261-
 P305+P351+P338



Thermal dec. 240 - 250°C

Specification:

Assay min. 99 %

Order-No.

A5549,0250

A5549,0001

Quantity

250 mg

1 g

Food Green 3 see Fast Green FCF (C.I. 42053) Page 345

Formaldehyde - Solutions (concentrations: 20 - 37 %)*Formol, Formaline*

CH_2O
M = 30.03 g/mol
 CAS-No.: 50-00-0
 HS-No.: 29121100
 EC-No.: 200-001-8

Storage: RT

LGK: 6.1 A

Disposal: 7

Class / PG: 8/III

UN2209

WGK: 2

hygroscopic

Boiling range 96 - 98°C

Density (d 20°C/4°C) ... 1.085

Melting point -118°C

n 18°C/D 1.3735

Formaldehyde - Solution 37 % Molecular biology grade

B

Danger
 H301-H351-H314-H317-H311-H331-
 H370
 P309-P302+P352-P301+P330+P331-
 P305+P351+P338-P310

**Specification:**

DNases/RNases/Proteases not detectable

Assay (titr.) min. 37 %

Acidity max. 0.05 %

Sulfated ash max. 0.005 %

Methanol 8 - 10 %

Chloride max. 0.0005 %

Sulfate max. 0.002 %

Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.

A0877,0250

A0877,0500

A0877,1000

Quantity

250 ml

500 ml

1 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.**Literature:** (1) Rave, N. et al. (1979) *Nucleic Acids Res.* **6**, 3559-3567(2) Sambrook, J. & Russel, D.W. (2001) *Molecular Cloning: A Laboratory Manual*. 3rd Edition; Pages 7.31-7.34. Cold Spring Harbor Laboratory Press. Cold Spring Harbor, New York.(3) Jackson, V (1999) *Methods. Companion Methods Enzymol.* **17**, 125-139(4) Goda, S.K. & Minton, N.P. (1995) *Nucleic Acids Res.* **23**, 3357-3358

Identification of prokollagen mRNA after transfer from formaldehyde agarose gels.

Formaldehyde Cross-Linking.

A simple procedure for gel electrophoresis and Northern blotting of RNA.

Comment: For the northern blot analysis, RNA is separated in formaldehyde-containing, denaturing agarose gels (1, 2). The agarose gel contains 2.2 M formaldehyde. DNA fragments of the same size as RNA fragments migrate more slowly through the formaldehyde-agarose gels than RNA. Therefore, DNA size markers cannot be used, if unknown RNA species are examined. Formaldehyde-containing gels are softer than normal gels - take care if handling the gel (2).

Formaldehyde may irreversibly cross-link proteins / proteins and proteins / DNA, making it a good tool for the examination of protein / DNA interactions. Buffers for these experiments shall not contain primary or secondary amines, because they will be cross-linked to lysine residues in the protein, too. Triethanolamine, HEPES or phosphate are the buffers of choice (3).

Caution: Formaldehyde fumes are toxic. Solutions containing formaldehyde shall be handled in a chemical fume hood. Run the gel under a fume hood and cover the gel apparatus where possible (2).

As an **alternative** to the toxic formaldehyde, guanidinium thiocyanate may be applied for Northern blotting (4). A final concentration of 20 mM is sufficient to denature RNA in the agarose gel (see A1107 for GuaSCN).

Formaldehyde - Solution 37 % BioChemica

B

Danger
 H311-H370-H314-H331-H301-H317-
 H351
 P309-P302+P352-P305+P351+P338-
 P310-P301+P330+P331

**Specification:**

Assay (titr.) min. 37 %

Acidity max. 0.05 %

Heavy metals (as Pb) max. 0.0005 %

Sulfated ash max. 0.005 %

Methanol 8 - 10 %

Chloride max. 0.0005 %

Sulfate max. 0.002 %

Order-No.

A0823,0500

A0823,1000

A0823,2500

A0823,5000

Quantity

500 ml

1 L

2.5 L

5 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.

Formaldehyde - Solution approx. 37 % Histology grade

B

Danger
H331-H317-H301-H314-H351-H311-
H370
P301+P330+P331-P309-
P305+P351+P338-P310-P302+P352



Specification:

Assay (titr.)	min. 36.5 %	Fe	max. 0.001 %
Acidity	max. 0.1 %	Pb	max. 0.001 %
Sulfated ash	max. 0.01 %		
Methanol (GC)	8 - 10 %		
Chloride	max. 0.005 %		
Sulfate	max. 0.005 %		

Order-No.	Quantity
A0936,1000	1 L
A0936,2500	2.5 L
A0936,5000	5 L
A0936,9010	10 L
A0936,9025	25 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.

Formaldehyde - Solution 37 % p. A.

C

Danger
H370-H351-H317-H301-H314-H331-
H311
P302+P352-P310-P305+P351+P338-
P301+P330+P331-P309



Specification:

Assay (titr.)	min. 37 %
Acidity	max. 0.05 %
Sulfated ash	max. 0.005 %
Methanol	8 - 10 %
Chloride	max. 0.0005 %
Sulfate	max. 0.002 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A3592,0500	500 ml
A3592,1000	1 L
A3592,10006	6 x 1 L
A3592,2500	2.5 L
A3592,25004	4 x 2.5 L
A3592,5000	5 L
A3592,9010	10 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.

Formaldehyde - Solution 37 % pure Ph. Eur., BP, USP

C

Danger
H311-H370-H314-H331-H317-H351-
H301
P309-P301+P330+P331-
P305+P351+P338-P310-P302+P352



Specification:

Assay (titr.)	37.0 - 38.0 %	Chloride	max. 0.001 %
Acidic reacting subst.	complies	Fe	max. 0.0005 %
Color	max. 10 Hazen		
Density (d20°C/4°C)	1.080 - 1.090		
Free acid (as HCOOC)	max. 0.03 %		
Heavy metals (as Pb)	max. 0.0005 %		
Identity	complies		
Sulfated ash	max. 0.1 %		
Methanol	9 - 11 %		

Order-No.	Quantity
A2633,1000	1 L
A2633,10006	6 x 1 L
A2633,2500	2.5 L
A2633,25004	4 x 2.5 L
A2633,5000	5 L
A2633,9010	10 L
A2633,9025	25 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.

Formaldehyde - Solution 37 % pure

C

Danger
H370-H301-H331-H314-H351-H317-
H311
P302+P352-P309-P305+P351+P338-
P310-P301+P330+P331



Specification:

Assay (titr.)	min. 37 %
Acidity	max. 0.05 %
Heavy metals (as Pb)	max. 0.001 %
Methanol	8 - 10 %
Chloride	max. 0.001 %

Order-No.	Quantity
A0421,1000	1 L
A0421,10006	6 x 1 L
A0421,2500	2.5 L
A0421,25004	4 x 2.5 L
A0421,5000	5 L
A0421,9010	10 L
A0421,9025	25 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.

Formaldehyde - Solution 37 % Technical grade

C

Danger
H301-H370-H314-H311-H317-H351-H331
P309-P301+P330+P331-
P305+P351+P338-P310-P302+P352



Specification:

Assay (titr.) approx. 37 %
Acidity max. 0.1 %
Methanol 8 - 10 %

Order-No.	Quantity
A2628,2500	2.5 L
A2628,25004	4 x 2,5 L
A2628,5000	5 L
A2628,9010	10 L
A2628,9025	25 L

◆ **Attention:** All solutions of formaldehyde may contain a precipitate. This has no influence on the application.

Formaldehyde - Solution 20 % p. A.

C

Warning
H317-H319-H335-H315-H302-H351-H336
P302+P352-P305+P351+P338-
P301+P330+P331-P309+P311



Specification:

Assay (titr.) min. 20 %
Acidity max. 0.05 %
Sulfated ash max. 0.005 %
Methanol approx. 5 %
Chloride max. 0.0005 %
Sulfate max. 0.002 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A2624,0500	500 ml
A2624,1000	1 L
A2624,10006	6 x 1 L
A2624,2500	2.5 L
A2624,25004	4 x 2,5 L
A2624,5000	5 L

Formaldehyde - Solution 4 % pure

C

Formalin, Formol

HS-No.: 38220000

Storage: RT
LGK: 6.1 A
Disposal: 7

WGK: 1
Warning
H317-H302-H351
P308+P313-P280-P302+P352



Specification:

Assay (titr.) min. 4 %
Acidity max. 0.05 %
Sulfated ash max. 0.01 %
Methanol approx. 1 %
Chloride max. 0.001 %
Sulfate max. 0.002 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A4315,1000	1 L
A4315,10006	6 x 1 L
A4315,2500	2.5 L
A4315,5000	5 L
A4315,9010	10 L

Formaldehyde - Solution 10 % phosphate buffered

Formol, Formalin

HS-No.: 29121100

Storage: RT
LGK: 10 - 13
Disposal: 7

WGK: 2
Warning
H336-H335-H302-H315-H317-H319-H351
P302+P352-P309+P311-
P305+P351+P338-P301+P330+P331



Formaldehyde - Solution 10 % phosphate buffered Histology grade

B

Composition:

Formaldehyde min. 10 %
Na₂HPO₄ (A3599) 6.5 g/L
NaH₂PO₄ · H₂O (A3559) 4.0 g/L

Specification:

pH (20°C) 7.0 ± 0.2

Order-No.	Quantity
A3684,2500	2.5 L
A3684,5000	5 L
A3684,9010	10 L
A3684,9025	25 L

Formaldehyde - Solution 10 % phosphate buffered pure

C

Composition:

Formaldehyde min. 10 %
Na₂HPO₄ 6.5 g/L
NaH₂PO₄ · H₂O 4.0 g/L

Specification:

Acidity max. 0.05 %
Sulfated ash max. 0.01 %
pH (20°C) 7.0 ± 0.2
Methanol approx. 3 %
Chloride max. 0.001 %
Sulfate max. 0.002 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A2501,2500	2.5 L
A2501,25004	4 x 2,5 L
A2501,5000	5 L
A2501,9010	10 L
A2501,9025	25 L

Formaldehyde - Solution (concentrations: < 5 %) phosphate buffered

HS-No.: 38220000

Storage: RT

WGK: 1

Warning

H317-H302-H351

P302+P352-P280-P308+P313



Formaldehyde - Solution approx. 4.5 % phosphate buffered Histology grade

B

Composition:

Formaldehyde min. 4.5 %
Na₂HPO₄ (A3599) 6.5 g/L
NaH₂PO₄ · H₂O (A3559) 4.0 g/L

Specification:

pH (20°C) 7.0 ± 0.2

Order-No.

Quantity

A0828,5000

5 L

A0828,9010

10 L

Formaldehyde - Solution 4 % phosphate buffered pure

C

Composition:

Formaldehyde min. 4 %
Na₂HPO₄ (A3599) 6.5 g/L
NaH₂PO₄ · H₂O (A3559) 4.0 g/L

Specification:

pH (20°C) 7.0 ± 0.2

Order-No.

Quantity

A2502,5000

5 L

A2502,9010

10 L

A2502,9025

25 L

Formaldehyde - Solution 4 % phosphate buffered Histology grade

B

Composition:

Formaldehyde min. 4 %
Na₂HPO₄ (A3599) 6.5 g/L
NaH₂PO₄ · H₂O (A3559) 4.0 g/L

Specification:

pH (20°C) 7.0 ± 0.2

Order-No.

Quantity

A3697,5000

5 L

A3697,9010

10 L

A3697,9025

25 L

Formalin see Formaldehyde - Solution 10 % phosphate buffered Page 357

Formaline see Formaldehyde - Solutions (concentrations: 20 - 37 %) Page 355

Formamide

Formic acid amide

CH₃NO

M = 45.04 g/mol

CAS-No.: 75-12-7

HS-No.: 29241900

EC-No.: 200-842-0

Storage: RT

LGK: 6.1 A

Disposal: 1

WGK: 1

Danger

H360D

P201-P308+P313

Boiling point 210°C

Density (d 20°C/4°C) ... 1.13

Melting point 2°C

n 20°C/D 1.4472



Formamide deionized Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable

Pb max. 0.00001 %

Assay (from N) min. 99.5 %

Loss on drying max. 0.1 %

Chloride max. 0.00005 %

Fe max. 0.00001 %

Order-No.

Quantity

A2156,0100

100 ml

A2156,0250

250 ml

A2156,0500

500 ml

A2156,1000

1 L

Literature: (1) Pinder, J.C. *et al.* (1974) *Biochemistry* **13**, 5367-5373
(2) Pinder, J.C. *et al.* (1974) *Biochemistry* **13**, 5373-5378
(3) Maniatis, T. & Efstratiadis, A. (1980) *Methods Enzymol.* **65**, 299-305
(4) Meinkoth, J. & Wahl, G. (1984) *Anal. Biochem.* **138**, 267-284
(5) Chomczynski, P. (1992) *Nucleic Acids Res.* **20**, 3791-3792
(6) Cornish, E.C. *et al.* (1998) *BioTechniques* **25**, 948-954
(7) Kafatos, F.C. *et al.* (1979) *Nucleic Acids Res.* **7**, 1541-1552
(8) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001. *Current Protocols in Molecular Biology*. John Wiley & Sons, N.Y.

Properties of RNA in Formamide.
Electrophoresis of RNA in Formamide.
Fractionation of low molecular weight DNA or RNA on polyacrylamide gels containing 98 % Formamide or 7 M Urea.
Hybridisation of nucleic acids, immobilized to membranes.
Storage of RNA in formamide increases stability of the RNA.
Improvement of the Southern blot method: Influence of the hybridisation buffer.
Determination of nucleic acid sequence homologies with 'dot hybridization'.

Comment: RNA and DNA with a chain length of >150 - 200 base pairs completely denature at room temperature in 98 % formamide, but not in 7 M urea. This allows the exact determination of the size of DNA or RNA single strands, because under these conditions the base composition and secondary structure have no influence on the migration behavior. The polyacrylamide gel contains 98 % deionized, anhydrous formamide. Acrylamide and bisacrylamide are dissolved in the formamide (1-4). The loading buffer contains formamide, too (see AppliChem's loading buffers). A similar technique of formamide-containing sequencing gels can be used for the sequencing of nucleic acids, when the secondary structure of the sequencing product causes an anomalous migration, i.e. compression of bands. Inclusion of up to 40 % of formamide is possible to overcome this problem (Ref. 8, pages 7.6.9-7.6.10 Supplement 16).

The stability of RNA is in formamide higher than in DEPC-treated water. RNA may be stored for more than a year in formamide at -20°C, instead of storage at -70°C in DEPC-treated water.

Besides gel electrophoresis deionized formamide is used for the hybridization of nucleic acids. Formamide reduces the melting temperature of a DNA-DNA hybrid by an average of 0.6°C per 1 % formamide; the maximum concentration is 50 %. By adding formamide, the temperature during the hybridization process can be reduced in comparison to an aqueous solution. At lower temperatures less DNA will detach from the nitrocellulose membrane. In addition, the background hybridization of heterologous RNA probes will be reduced. In combination with nylon membranes, no major advantage was observed.

A typical formamide-containing prehybridization/hybridization solution may be composed of: 5X SSC, 5X Denhardt solution, 50 % (w/v) formamide, 1 % (w/v) SDS and 100 µg/ml denatured salmon sperm DNA added just before use (ref. 8, p. 2.10.7 Supplement 35). The use of formamide-containing buffers increase the specific hybridisation in blotting experiments and reduces thereby the number of washing steps. This should be taken into account, if one switches to buffers without formamide (6).

Formamide ultrapure

B

Specification:

Assay (from N)	min. 99.5 %	Cu	max. 0.0001 %
pH (1 M; H ₂ O)	7.0 - 9.0	Fe	max. 0.00005 %
Loss on drying	max. 0.05 %	Pb	max. 0.00005 %
Chloride	max. 0.00005 %	Zn	max. 0.0001 %

Order-No.	Quantity
A0871,0250	250 ml
A0871,0500	500 ml
A0871,1000	1 L

Formamide BioChemica

B

Specification:

Assay (from N)	min. 99.5 %	A (1 cm/10 M in water HPLC grade)	
Heavy metals (as Pb)	max. 0.0005 %	260 nm	max. 0.4
Loss on drying	max. 0.1 %	280 nm	max. 0.1
Chloride	max. 0.0001 %		

Order-No.	Quantity
A0937,0500	500 ml
A0937,1000	1 L
A0937,2500	2.5 L

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001. *Current Protocols in Molecular Biology* Page 7.6.10 Supplement 16. John Wiley & Sons, N.Y.

Comment: Molecular biology application require the deionization of formamide Deionize formamide by stirring with Amberlite MB-1 or equivalent mixed-bed resin 30 minutes at +4°C. Filter through e.g. Whatman No. 1 filter paper and store at -20°C (1).

Formamide p. A.

C

Specification:

Assay (from N)	min. 99.5 %
Sulfated ash	max. 0.01 %
Loss on drying	max. 0.1 %
Chloride	max. 0.0001 %
Fe	max. 0.0001 %
Pb	max. 0.0001 %

Order-No.	Quantity
A3606,0500	500 ml
A3606,1000	1 L
A3606,10006	6 x 1 L
A3606,2500	2.5 L
A3606,25004	4 x 2,5 L
A3606,5000	5 L
A3606,9010	10 L

Formamide pure

C

Specification:

Assay (from N)	min. 99 %
Loss on drying	max. 0.5 %

Order-No.	Quantity
A1682,1000	1 L
A1682,10006	6 x 1 L
A1682,2500	2.5 L
A1682,25004	4 x 2,5 L
A1682,5000	5 L
A1682,9010	10 L
A1682,9025	25 L

Formic acid

Boiling point	101°C (98 - 100%)	CH ₂ O ₂
Density (d 20°C/4°C)	1,22 (98 - 100 %)	M = 46.03 g/mol
Melting point	8°C (98 - 100 %)	CAS-No.: 64-18-6
		HS-No.: 29151100
		EC-No.: 200-579-1

Storage: RT
LGK: 8 B
Disposal: 4

WGK: 1

Formic acid 98 - 100 % BioChemica

B

Class / PG: 8(3)/I

UN1779

Danger

H314-H226

P260-P305+P351+P338-P280-

P301+P330+P331



Specification:

Assay (titr)	min. 98 %	Sulfate	max. 0.0001 %
Heavy metals (as Pb)	max. 0.0005 %		
Insoluble matter	complies		
Acetic acid	max. 0.05 %		
Chloride	max. 0.0005 %		

A (1 cm/1 M in H ₂ O)	
260 nm	max. 0.03
280 nm	max. 0.01

Order-No.	Quantity
A3858,0500	500 ml
A3858,1000	1 L
A3858,2500	2.5 L

Literature: (1) Cooper, J.A. *et al.* (1983) *Methods Enzymol.* **99**, 387-402
(2) Martensen T.M. & Levine R.L. (1983) *Methods Enzymol.* **99**, 402
(3) Reason, A.J. *et al.* (1992) *J. Biol. Chem.* **267**, 16911-16921
(4) Janknecht, R. *et al.* (1992) *EMBO J.* **11**, 1045-1054

Detection and quantification of phosphotyrosine in proteins.
Basic hydrolysis and amino acids analysis of phosphotyrosine in proteins.
Localization of O-GlcNAc modification on the serum response transcription factor.
Identification of multiple SRF N-terminal phosphorylation sites affecting DNA binding properties.

Formic acid 98 - 100 % p. A.*Carboxylic acid C₁*

Class / PG: 8(3)/II
 UN1779
 Danger
 H314-H226
 P305+P351+P338-P280-P260-
 P301+P330+P331

**Specification:**

Assay (titr.)	min. 98 %
Acetic acid	max. 0.05 %
Chloride	max. 0.0005 %
Sulfate	max. 0.0001 %
Ca	max. 0.00002 %
Cd	max. 0.00002 %
Cr	max. 0.00001 %
Fe	max. 0.00001 %
Mg	max. 0.00001 %
Pb	max. 0.00001 %
Zn	max. 0.0001 %

Order-No.	Quantity
A0748,0100	100 ml
A0748,0500	500 ml
A0748,1000	1 L
A0748,10006	6 x 1 L
A0748,2500	2.5 L
A0748,25004	4 x 2.5 L
A0748,5000	5 L
A0748,9010	10 L
A0748,9025	25 L

Formic acid 98 - 100 % pure Food grade

Class / PG: 8(3)/II
 UN1779
 Danger
 H226-H314
 P305+P351+P338-P280-
 P301+P330+P331-P260

**Specification:**

Assay (titr.)	min. 98 %
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.001 %
Identity	complies
Non-volatile matter	max. 0.005 %
Acetic acid	max. 0.1 %
Formaldehyde	max. 0.1 %

Oxalic acid	max. 0.01 %
Chloride	max. 0.001 %
Sulfate	max. 0.004 %
Sulfite	max. 0.002 %
As	max. 0.0003 %
Cu	max. 0.002 %
Pb	max. 0.001 %

Zn max. 0.002 %

Order-No.	Quantity
A0749,1000	1 L
A0749,10006	6 x 1 L
A0749,2500	2.5 L
A0749,5000	5 L
A0749,9010	10 L
A0749,9025	25 L

Formic acid 98 - 100 % pure

Class / PG: 8(3)/II
 UN1779
 Danger
 H314-H226
 P305+P351+P338-P280-P260-
 P301+P330+P331

**Specification:**

Assay (titr.)	min. 98 %
Acetic acid	max. 0.1 %
Chloride	max. 0.001 %
Sulfate	max. 0.005 %
Cu	max. 0.05 %
Fe	max. 0.001 %
Pb	max. 0.001 %

Order-No.	Quantity
A3153,1000	1 L
A3153,10006	6 x 1 L
A3153,2500	2.5 L
A3153,25004	4 x 2.5 L
A3153,5000	5 L
A3153,9010	10 L
A3153,9025	25 L

Formic acid 98 - 100 % Technical grade

Class / PG: 8(3)/II
 UN1779
 Danger
 H314-H226
 P260-P305+P351+P338-
 P301+P330+P331-P280

**Specification:**

Assay (titr.)	approx. 98 %

Order-No.	Quantity
A2313,2500	2.5 L
A2313,25004	4 x 2.5 L
A2313,5000	5 L
A2313,9010	10 L
A2313,9025	25 L

Formic acid 85 % p. A.

C

Class / PG: 8/II
 UN3412
 Danger
 H314
 P301+P330+P331-P260-
 P305+P351+P338-P280

**Specification:**

Assay (titr.) min. 85 %
 Acetic acid max. 0.05 %
 Chloride max. 0.0005 %
 Sulfate max. 0.0001 %
 Ca max. 0.00002 %
 Cd max. 0.00001 %
 Cr max. 0.00001 %
 Fe max. 0.00001 %
 Mg max. 0.00001 %

Pb max. 0.00001 %
 Zn max. 0.0001 %

Order-No.	Quantity
A2286,0500	500 ml
A2286,1000	1 L
A2286,10006	6 x 1 L
A2286,2500	2.5 L
A2286,5000	5 L
A2286,9010	10 L
A2286,9025	25 L

Formic acid 85 % pure

*produced from Formic acid 98 - 100 % pure
 Food grade (A0749)*

Class / PG: 8/II
 UN3412
 Danger
 H314
 P305+P351+P338-P260-
 P301+P330+P331-P280



C

Specification:

Assay (titr.) min. 85 %
 Appearance of solution complies
 Identity complies
 Non-volatile matter max. 0.005 %
 Acetic acid max. 0.1 %
 Formaldehyde max. 0.1 %
 Oxalic acid max. 0.01 %
 Chloride max. 0.001 %
 Sulfate max. 0.004 %

Sulfite max. 0.002 %
 As max. 0.0003 %
 Cu max. 0.002 %
 Pb max. 0.001 %
 Zn max. 0.002 %

Order-No.	Quantity
A0750,1000	1 L
A0750,10006	6 x 1 L
A0750,2500	2.5 L
A0750,25004	4 x 2.5 L
A0750,5000	5 L
A0750,9010	10 L
A0750,9025	25 L

Formic acid 85 % Technical grade

C

Class / PG: 8/II
 UN3412
 Danger
 H314
 P301+P330+P331-P305+P351+P338-
 P280-P260

**Specification:**

Assay (titr.) approx. 85 %

Order-No.	Quantity
A2587,2500	2.5 L
A2587,25004	4 x 2.5 L
A2587,5000	5 L
A2587,9010	10 L
A2587,9025	25 L

Formic acid 60 % pure

*produced from Formic acid 98 - 100 % pure
 Food grade (A0749)*

Class / PG: 8/II
 UN3412
 Danger
 H314
 P305+P351+P338-P260-
 P301+P330+P331-P280



C

Specification:

Assay (titr.) min. 60 %
 Appearance of solution complies
 Identity complies
 Non-volatile matter max. 0.005 %
 Formaldehyde max. 0.1 %
 Acetic acid max. 0.1 %
 Chloride max. 0.001 %

Oxalic acid max. 0.01 %
 Sulfate max. 0.004 %
 Sulfite max. 0.002 %
 As max. 0.0003 %
 Cu max. 0.002 %
 Pb max. 0.001 %
 Zn max. 0.002 %

Order-No.	Quantity
A4858,1000	1 L
A4858,10006	6 x 1 L
A4858,2500	2.5 L
A4858,5000	5 L
A4858,9010	10 L
A4858,9025	25 L

C

Order-No.	Quantity
A2620,1000	1 L
A2620,10006	6 x 1 L
A2620,2500	2.5 L
A2620,5000	5 L

C



Order-No.	Quantity
A2629,1000	1 L
A2629,2500	2.5 L
A2629,5000	5 L

C

Order-No.	Quantity
A1171,1000	1 L
A1171,2500	2.5 L
A1171,5000	5 L
A1171,9010	10 L

Formvar® Resin Electron Microscopy Grade

B

Order-No.	Quantity
A4880,0025	25 g
A4880,0100	100 g
A4880.0250	250 g

Comment: Formvar appears to be the most widely used support film for TEM grids. Formvar can be dissolved in a variety of solvents with ethylene dichloride and chloroform being the two most popular. Other solvents are dioxane or N,N-dimethylformamide, a solvent with a lower vapor pressure. It can take days, not hours, to get Formvar resin into solution.

p-Formyldimethylaniline see 4-Dimethylaminobenzaldehyde Reag. Ph. Eur. Page 283
5-Formyl-5,6,7,8-tetrahydropteroyl-L-glutamic acid see Folinic acid calcium salt pentahydrate Page 355

Forskolin BioChemica

B

from *Coleus forskohlii*

$C_{22}H_{34}O_7$
 $M = 410.51$ g/mol
 CAS-No.: 66575-29-9
 HS-No.: 29329900
 EC-No.: 266-410-9

Storage: -20°C
 LGK: 10 - 13

Warning
 H312
 P280



Melting point 228 - 230°C

Specification:

Assay (TLC) min. 97 %

Order-No.	Quantity
A2165,00025	2.5 mg
A2165,0005	5 mg
A2165,0010	10 mg

Literature: (1) Seamon, K.B. & Daly, J.W. (1983) *Trends. Pharmacol. Sci.* **4**, 120-123
 (2) Laurenza, A. et al. (1989) *Trends. Pharmacol. Sci.* **10**, 442-447
 (3) Lomo, J. et al. (1995) *J. Immunol.* **154**, 1634-1643

Forskolin, cAMP and the Cell physiology.
 Forskolin: a specific stimulator for the Adenylate cyclase.
 TGF-β1 and cAMP promote the apoptosis in quiescent human B-lymphocytes.

Frangula-Emodin see Emodin HPLC grade Page 326

Frangulin A HPLC grade

B

Emodin-1-rhamnoside, Rhamnoxanthine
 from *Rhamnus frangula*

$C_{21}H_{20}O_9$
 $M = 416.40$ g/mol
 CAS-No.: 521-62-0
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A3405,0020	20 mg
A3405,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Frangulin B HPLC grade

B

from *Rhamnus frangula*

$C_{20}H_{18}O_9$
 $M = 402.37$ g/mol
 CAS-No.: 14101-04-3
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A3913,0010	10 mg
A3913,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Frangulin (A : B approx. 1 : 4)

B

Cascarin, Frangulosid
 from *Rhamnus frangula*

$C_{21}H_{20}O_9$ and $C_{20}H_{18}O_9$
 CAS-No.: 60529-33-1
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.	Quantity
A3643,0100	100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Frangulosid see Frangulin (A : B approx. 1 : 4) Page 363

Freez Media - DMSO



B

HS-No.: 38220000

Storage: 2-8°C

- Animal Component-Free (no serum, proteins or other animal derived components)
- Cryoprotective formulation designed to minimize dehydration effects
- Effective maintenance of cell viability, adhesion, and bioactivity
- Recommended for use in cell cultures employing both ACF and serum-supplemented growth media
- Suitable for use in cell banks and biopharmaceutical applications

Specification:

pH 7.2 - 7.6
 Sterility complies

Order-No.	Quantity
A8361,0020	20 ml

Comment: Cell cryopreservation formulation; Animal component-free, protein-free cell freezing medium

β-D-Fructofuranosyl-α-D-glucopyranosid see D(+)-Sucrose Page 776

D(-)-FructoseFruit sugar, *Levulose*

Melting point 103°C

$C_6H_{12}O_6$
 $M = 180.16$ g/mol
 CAS-No.: 57-48-7
 HS-No.: 17025000
 EC-No.: 200-333-3

Storage: RT
 LGK: 10 - 13

WGK: nwg

D(-)-Fructose BioChemica

B

Specification:

Assay min. 99 %
 α 20°C/D; 10 %, H_2O -91° - -93.5°
 Heavy metals (as Pb) max. 0.0005 %
 Insoluble matter complies
 pH (10 %; H_2O) 4.5 - 7.0 (20°C)

Water (K.F.) max. 0.5 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.04
 280 nm max. 0.04

Order-No.	Quantity
A3688,0500	500 g
A3688,1000	1 kg
A3688,5000	5 kg

D(-)-Fructose pure Ph. Eur., USP

C

Specification:

Assay (opt. rotation) 98.0 - 102.0 %
 α 20°C/D; 10 %, H_2O -91.0° - -93.5°
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Foreign sugars complies
 Heavy metals (as Pb) max. 0.0005 %

Identity complies
 Sulfated ash max. 0.1 %
 5-Hydroxymethylfurfural, rel. subst. complies
 Loss on drying max. 0.5 %
 Chloride max. 0.018 %

Sulfate max. 0.025 %
 As max. 0.0001 %
 Ba complies
 Ca, Mg (as Ca) max. 0.005 %
 Pb max. 0.00005 %

Order-No.	Quantity
A1299,0500	500 g
A1299,1000	1 kg
A1299,10006	6 x 1 kg
A1299,5000	5 kg
A1299,9010	10 kg

D-Fructose-1,6-diphosphate trisodium salt octahydrate BioChemica

B

Harden-Young - Ester

$C_6H_{11}Na_3O_{12}P_2 \cdot 8H_2O$
 $M = 550.19$ g/mol
 CAS-No.: 81028-91-3
 HS-No.: 29400000
 EC-No.: 253-778-0

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay (titr.) min. 98 %
 Heavy metals max. 0.001 %
 Loss on drying approx. 25 %

Order-No.	Quantity
A1507,0001	1 g
A1507,0005	5 g
A1507,0010	10 g

Fruit sugar see D(-)-Fructose Page 364

5-FU see 5-Fluorouracil *BioChemica* Page 354**Fuchsin acidic disodium salt (C.I. 42685)**

B

Rubin S, Fuchsin S, Acid Fuchsin, Acid violet 19

$C_{20}H_{17}N_3Na_2O_9S_3$
 $M = 585.54$ g/mol
 CAS-No.: 3244-88-0
 HS-No.: 32041300
 EC-No.: 221-816-5

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Specification:

λ_{max} (pH 3.0; H_2O) 544 - 550 nm
 A (λ_{max} -15 nm) / A (λ_{max} +15 nm)
 1.0 - 1.4

E 1 %/1 cm, λ_{max} , H_2O ; pH 3.0
 min. 600

Order-No.	Quantity
A2166,0025	25 g
A2166,0050	50 g
A2166,0100	100 g

Fuchsin basic (C.I. 42510) Microscopy grade

C

Rosaniline, Magenta, Basic Fuchsin

$C_{20}H_{20}ClN_3$
 $M = 337.85$ g/mol
 CAS-No.: 632-99-5
 HS-No.: 32041300
 EC-No.: 211-189-6

Storage: RT
 LGK: 10 - 13

WGK: 3
 Danger
 H350
 P281-P201-P308+P313

Density (d 20°C/4°C) ..0.88

Specification:

Assay (photometr.) min. 88 %
 λ_{max} (50 % EtOH) 549 - 552 nm
 E 1 %/1 cm, λ_{max} , 50 % EtOH
 2360 - 2710

Loss on drying max. 10 %

Order-No.	Quantity
A1795,0025	25 g
A1795,0100	100 g
A1795,0250	250 g

Fuchsin S see Fuchsin acidic disodium salt (C.I. 42685) Page 364

Fucidin see Fusidic acid sodium salt *BioChemica* Page 366

D(+)-Fucose BioChemica

B

6-Deoxy-D-galactose, Rhodoseose

 $C_6H_{12}O_5$

Storage: RT

Melting range 140 - 143°C

$M = 164.16$ g/mol
 CAS-No.: 3615-37-0
 HS-No.: 29400000
 EC-No.: 222-792-9

Specification:

Assay (TLC) min. 99 %
 α 20°C/D; 4 %, H_2O ; 24 h +75.6° ± 1°

Order-No.	Quantity
A6858,0001	1 g
A6858,0005	5 g
A6858,0025	25 g

L(-)-Fucose BioChemica

B

6-Deoxy-L-galactose

 $C_6H_{12}O_5$

Storage: RT

Melting point 143°C

$M = 164.16$ g/mol
 CAS-No.: 2438-80-4
 HS-No.: 29400000
 EC-No.: 219-452-7

Specification:

Assay min. 99 %
 α 20°C/D; 5 %; H_2O -74° - -76°
 Heavy metals (as Pb) max. 0.001 %
 Water (K.F.) max. 0.5 %

Order-No.	Quantity
A4365,0005	5 g
A4365,0025	25 g
A4365,0100	100 g

Fumagillin BioChemica

B

Amecibacin, Fumifil B
 from *Aspergillus fumigatus*

 $C_{26}H_{34}O_7$

Storage: -20°C
 protected from light

Warning
 H302
 P280



Melting point 190 - 192°C

$M = 458.54$ g/mol
 CAS-No.: 23110-15-8
 HS-No.: 29419000
 EC-No.: 245-433-8

Specification:

Assay approx. 98 %
 λ_{max} (EtOH) 334, 349 nm

Order-No.	Quantity
A7737,0001	1 mg
A7737,0005	5 mg

Comment: Fumagillin is an antibiotic from *Aspergillus fumigatus* with antiamebic activity. It is an inhibitor of angiogenesis. It is soluble in DMSO and methanol, as well as in alkaline aqueous solutions.

Fumaric acid

trans-Butenedioic acid

 $C_4H_4O_4$

Storage: RT
 LGK: 10 - 13
 Disposal: 4

WGK: 1
 Warning
 H319
 P305+P351+P338



Melting point 298°C

Solubility (20°C) 6.3 g/L (H_2O)

$M = 116.07$ g/mol
 CAS-No.: 110-17-8
 HS-No.: 29171990
 EC-No.: 203-743-0

Fumaric acid BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.005 %
 Maleic acid max. 0.1 %
 Water (K.F.) max. 0.25 %

Order-No.	Quantity
A3664,0500	500 g
A3664,1000	1 kg
A3664,5000	5 kg

Fumaric acid pure NF

C

Specification:

Assay (titr.) 99.5 - 100.5 %
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Organic vol. impurities complies
 Sulfated ash max. 0.1 %

Order-No.	Quantity
A1724,1000	1 kg
A1724,10006	6 x 1 kg
A1724,5000	5 kg
A1724,9010	10 kg

Fumifil B see Fumagillin BioChemica Page 365

Fumonisin B1 BioChemica

B

Macrofusine
from *Fusarium moniliforme*

$C_{34}H_{59}NO_{15}$
 $M = 721.83$ g/mol
CAS-No.: 116355-83-0
HS-No.: 29221985

Storage: 2-8°C

Warning
H351
P281



Solubility (10 mg/ml MeOH)
..... clear, colorless

Specification:

Assay (TLC) approx. 95 %

Order-No.	Quantity
A7722,0001	1 mg
A7722,0005	5 mg
A7722,0010	10 mg

Comment: Fumonisin B1 is the most prevalent of a family of mycotoxins and is produced by *Fusarium moniliforme* and other *Fusarium* species. This mold is frequently associated with corn. Fumonisin B1 inhibits the sphingosine biosynthesis. It is soluble in methanol or acetonitrile.

Fumonisin B2 BioChemica

B

from *Fusarium moniliforme*

$C_{34}H_{59}NO_{14}$
 $M = 705.83$ g/mol
CAS-No.: 116355-84-1
HS-No.: 29221985

Storage: 2-8°C
protected from light

Class / PG: 6.1/1
UN2811
Danger
H319-H310-H335-H300-H315-H330-
H351
P305+P351+P338-P284-P280-
P302+P350-P260-P264



Solubility Methanol

Specification:

Assay (TLC) approx. 97 %

Order-No.	Quantity
A7864,0001	1 mg
A7864,0005	5 mg

Comment: Fumonisin B2 is a more cytotoxic mycotoxin than the structural analog Fumonisin B1 and is produced by *Fusarium moniliforme* as well. Fumonisin B2 inhibits the sphingosine acyltransferase. It is soluble in methanol.

Fungicidin see Nystatin dihydrate BioChemica Page 580

N⁶-Furfuryladenine see Kinetin BioChemica Page 472

6-Furfurylaminopurine see Kinetin BioChemica Page 472

N-[3-(2-Furylacryloyl)]-L-leucyl-glycyl-L-prolyl-L-alanine see FALGPA BioChemica Page 345

Fusariotoxin see T2 Toxin BioChemica Page 789

Fusidic acid sodium salt BioChemica

B

Fucidin, Sodium fusidate

$C_{31}H_{47}NaO_6$
 $M = 538.69$ g/mol
CAS-No.: 751-94-0
HS-No.: 29419000
EC-No.: 212-030-3

Storage: RT

Warning
H302
P309+P311-P260



Specification:

Assay min. 98 %
Water (K.F.) max. 5 %

Order-No.	Quantity
A6560,0001	1 g
A6560,0005	5 g

G418 disulfate BioChemica

B

Antibiotic G418

$C_{20}H_{40}N_4O_{10} \cdot 2H_2SO_4$
 $M = 692.70$ g/mol
CAS-No.: 108321-42-2
HS-No.: 29419000

Storage: RT
LGK: 6.1 B

Specification:

Assay (TLC) min. 98 %
Potency (calc. on dried substance)
..... min. 620 µg/mg
Water (K.F.) max. 10 %

Order-No.	Quantity
A2167,0250	250 mg
A2167,0500	500 mg
A2167,0001	1 g

Corresponds to Geneticin® disulfate, a trademark of Gibco Division of Life Technologies

Literature: (1) Liscovitch, M. et al. (1991) *Biochem. J.* **279**, 319-321
(2) Kumar, S. et al. (1994) *Biochem. Mol. Biol. Int.* **32**, 1059-1066

Inhibition of neural phospholipase D activity by aminoglycoside antibiotics.

A comparative evaluation of three transfection procedures as assessed by resistance to G418 conferred to HEG2 cells.

(3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page 9.5.7 Suppl. 39 John Wiley & Sons, New York.

Comment: G418 blocks protein synthesis in mammalian cells by interfering with ribosomal function. It is an aminoglycoside antibiotic, similar in structure to neomycin, gentamycin, and kanamycin. Geneticin disulfate is used for the selection of stably transformed cells, which have incorporated the neomycin resistance gene (aminoglycoside phosphotransferase) derived from the transposons Tn 5 and Tn 601, respectively.

Since this antibiotic is toxic for many cells, one has to determine the optimal concentration for each cell type. In general this concentration varies from 50 to 1000 µg/ml. At a concentration of 500 µg/ml 70 % of HepG2-cells are killed within one week of incubation and 100 % stop growing (2). Different lots of G418 can have different potencies. Therefore it is recommended to buy a large amount of one lot to standardize selection conditions. Cells will divide once or twice in the presence of lethal doses of G418, so the effects of the antibiotic take several days to become apparent (3).

Stability and Solubility: G418 is stable at +4°C. Solutions are stored at -20°C and are stable for up to 2 years. Stock solutions of G418 should be prepared in a highly buffered solution (e. g. 100 mM Hepes, pH 7.3; see Ref. 3), so that addition of the drug does not alter the pH of the medium. Stock solutions can be prepared at a concentration of 50 mg/ml.

G418 disulfate - Solution, sterile

B

Antibiotic G418 - Solution

$C_{20}H_{40}N_4O_{10} \cdot 2H_2SO_4$
 $M = 692.70$ g/mol
 CAS-No.: 108321-42-2
 HS-No.: 29419000

Storage: 2-8°C

Specification:

Assay (active antibiotic) . . . 50 mg/ml

Order-No.

A6798,0020

A6798,0050

A6798,0100

Quantity

20 ml

50 ml

100 ml

This product is equivalent to Geneticin® disulfate, a trademark of Gibco Division of Life Technologies

GA₃ see Gibberellic acid *BioChemica* Page 372

Galactitol see Dulcitol *BioChemica* Page 310

D-Galactopyranose see D(+)-Galactose Page 367

4-O-β-D-Galactopyranosyl-D-fructose see Lactulose *BioChemica* Page 479

4-O-β-D-Galactopyranosyl-D-glucitol see Lactitol monohydrate *BioChemica* Page 477

6-O-α-D-Galactopyranosyl-D-glucose see D(+)-Melibiose monohydrate *BioChemica* Page 524

α-D-Galactopyranosyl-1-phosphate see α-D-Galactose-1-phosphate dipotassium salt dihydrate Page 368

D(+)-Galactosamine hydrochloride *BioChemica*

B

D-Chondrosamine hydrochloride, 2-Amino-2-deoxy-D-galactopyranose hydrochloride

$C_6H_{13}NO_3 \cdot HCl$
 $M = 215.64$ g/mol
 CAS-No.: 1772-03-8
 HS-No.: 29329900
 EC-No.: 217-198-1

Storage: RT

Melting range 185 -186°C

Specification:

Assay min. 98 %

α20°C/D; 1 %, H₂O; 24 h . . . +93° - +99°

Residue on ignition max. 3 %

Order-No.

A6859,0001

A6859,0005

A6859,0025

Quantity

1 g

5 g

25 g

D(+)-Galactose *BioChemica*, non animal origin



B

Lactoglucose, D-Galactopyranose

$C_6H_{12}O_6$
 $M = 180.16$ g/mol
 CAS-No.: 59-23-4
 HS-No.: 29400000
 EC-No.: 200-416-4

Storage: RT

LGK: 10 - 13

WGK: nwg

Solubility (20°C) 650 g/L (H₂O)

Specification:

Assay min. 98 %

α20°C/D; 10 %, H₂O +79.0° - +81.0°

Appearance of solution (H₂O)

. clear, colorless

Melting range 162 - 170°C

Sulfated ash max. 0.10 %

Loss on drying . . max. 0.3 %

Order-No.

A7983,0100

A7983,0250

Quantity

100 g

250 g

D(+)-Galactose

Lactoglucose, D-Galactopyranose

$C_6H_{12}O_6$
 $M = 180.16$ g/mol
 CAS-No.: 59-23-4
 HS-No.: 29400000
 EC-No.: 200-416-4

Storage: RT

LGK: 10 - 13

WGK: nwg

Melting point 167 - 170°C (dec.)

Solubility (20°C) 650 g/L (H₂O)

D(+)-Galactose Cell culture grade

B

Specification:

Pyrogen test complies

Assay min. 98 %

α20°C/D; 10 %, H₂O +78° - +81.5°

Heavy metals (as Pb) max. 0.0005 %

pH (10 %; H₂O) 4.5 - 7.0

Water (K.F.) max. 0.3 %

Order-No.

A4073,0100

A4073,0250

A4073,0500

A4073,1000

Quantity

100 g

250 g

500 g

1 kg

D(+)-Galactose *BioChemica*

B

Specification:

Assay min. 98 %

α20°C/D; 10 %, H₂O +78° - +81.5°

Heavy metals (as Pb) max. 0.001 %

Insoluble matter complies

pH (10 %; H₂O) 4.5 - 7.0

Water (K.F.) max. 0.3 %

A (1 cm/0.1 M in H₂O)

260 nm max. 0.05

280 nm max. 0.1

Order-No.

A1131,0100

A1131,0250

A1131,0500

A1131,1000

Quantity

100 g

250 g

500 g

1 kg

Literature: (1) Doudoroff, M. (1962) *Methods Enzymol.* **5**, 339-341

(2) Dahms, A.S. & Anderson, R.L. (1972) *J. Biol. Chem.* **247**, 2222-2227

D-Galactose dehydrogenase from *Pseudomonas saccharophila*.

D-Fucose metabolism in a *Pseudomonad*.

D(+)-Galactose pure Ph. Eur.

C

Specification:

α 20°C/D; 10 %, H₂O +78.0° - +81.5°
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Identity complies
 Microbial contamination max. 100 CFU/g
 Sulfated ash max. 0.1 %
 Water (K.F.) max. 1.0 %

Ba complies
 Pb max. 0.00005 %

Order-No.	Quantity
A3609,0100	100 g
A3609,0250	250 g
A3609,0500	500 g
A3609,1000	1 kg
A3609,10006	6 x 1 kg
A3609,5000	5 kg

α -D-Galactose-1-phosphate dipotassium salt dihydrate

B

α -D-Galactopyranosyl-1-phosphate
 synthetic

C₆H₁₁K₂O₉P · 2H₂O
 M = 372.36 g/mol
 CAS-No.: 19046-60-7
 HS-No.: 29400000

Storage: 2-8°C

Specification:

Assay min. 99 %
 α 20°C/D; 1.5 %, H₂O +99° ± 1°
 Ba-, Li-, Na-, CHA salts max. 0.01 %
 Solubility (1 %; H₂O; 21°C) clear, colorless

free phosphate max. 0.1 %

Order-No.	Quantity
A6823,0100	100 mg
A6823,0500	500 mg
A6823,0001	1 g

Galactin see rHu Galectin-1 Page 368

recombinant Human Galectin-1 see rHu Galectin-1 Page 368

rHu Galectin-1

B

recombinant Human Galectin-1, BHL,
 Galaptin, L-14
 lyophilized from 10 mM sodium
 phosphate, pH 7.5
 from *E. coli*

M = 14.5 kDa
 HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
 Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8281,0010	10 µg
A8281,0050	50 µg
A8281,1000	1 mg

Comment: Human Galectin-1 belongs to a large family of carbohydrate-binding proteins that contain structural similarities in their carbohydrate recognition domains. Galectin-1, also known as L-14, BHL or galaptin, can be either monomeric or homodimeric, and is found in a wide variety of cells and tissue types. Galectin-1 controls cell growth and proliferation and induces apoptosis of activated T cells. It can also modulate cytokine secretion or inhibit pro-inflammatory cytokine production. Galectin-1 plays an important role in acute and chronic inflammation. Galectin-1 is comprised of 134 amino acids with a molecular weight of 14.5 kDa.

(-)-Galocatechin HPLC grade

B

Galocatechol
 from *Camellia sinensis*

C₁₅H₁₄O₇
 M = 306.27 g/mol
 CAS-No.: 3371-27-5
 HS-No.: 29182900

Storage: 2-8°C
 LGK: 10 - 13

Warning
 H335-H315-H319
 P305+P351+P338-P261


Specification:

Assay min. 99 %

Order-No.	Quantity
A2057,0010	10 mg
A2057,0010DOC	10 mg
A2057,0020	20 mg
A2057,0020DOC	20 mg
A2057,0050	50 mg
A2057,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Galocatechol see (-)-Galocatechin HPLC grade Page 368

D-GalNAc see N-Acetyl-D-galactosamine Page 49

Gamborg's B5 Plant salts

B

HS-No.: 38210000

Storage: 2-8°C
 LGK: 10 - 13

hygroscopic
 P262

Order-No.	Quantity
A1911,5000	5 L
A1911,9010	10 L
A1911,9050	50 L

rHu G-CSF bioconfident grade

B

Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 20.8 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8748,0010	10 µg
A8748,0050	50 µg
A8748,0100	100 µg
A8748,1000	1 mg

Comment: Recombinant human G-CSF contains 174 amino acids and a 16 amino acid Histidine-based tag for a total length of 190 amino acids and has a predicted molecular mass of 20.8 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 23 kDa in SDS-PAGE.

rHu G-CSF

B

recombinant Human Granulocyte Colony
Stimulating Factor
lyophilized after extensive dialysis
against 10 mM sodium acetate buffer pH
4.0
from *E. coli*

M = 18.8 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8270,0002	2 µg
A8270,0010	10 µg
A8270,0100	100 µg

Comment: A glycoprotein of MW 20 kDa containing internal disulfide bonds. It induces the survival, proliferation, and differentiation of neutrophilic granulocyte precursor cells and functionally activates mature blood neutrophils. Among the family of colony-stimulating factors, G-CSF is the most potent inducer of terminal differentiation to granulocytes and macrophages of leukemic myeloid cell lines. The synthesis of G-CSF can be induced by bacterial endotoxins, TNF, Interleukin-1 and GM-CSF. Prostaglandin E2 inhibits the synthesis of G-CSF. In epithelial, endothelial, and fibroblastic cells secretion of G-CSF is induced by Interleukin-17. Recombinant Human G-CSF is a single, non-glycosylated, polypeptide chain containing 175 amino acids.

rM G-CSF

B

recombinant Mouse Granulocyte-Colony
Stimulating Factor
lyophilized from 10 mM sodium citrate,
pH 3.0
from *E. coli*

M = 19 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8284,0002	2 µg
A8284,0010	10 µg
A8284,0100	100 µg

Comment: A glycoprotein containing internal disulfide bonds. It induces the survival, proliferation, and differentiation of neutrophilic granulocyte precursor cells and functionally activates mature blood neutrophils. Among the family of colony-stimulating factors, G-CSF is the most potent inducer of terminal differentiation to granulocytes and macrophages of leukemic myeloid cell lines. The synthesis of G-CSF can be induced by bacterial endotoxins, TNF, Interleukin-1 and GM-CSF. Prostaglandin E2 inhibits the synthesis of G-CSF. In epithelial, endothelial, and fibroblastic cells secretion of G-CSF is induced by Interleukin-17. Recombinant Mouse G-CSF produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 179 amino acids and having a molecular mass of 19 kDa.

rHu GDF-5

B

recombinant Human Growth and
Differentiation Factor-5
lyophilized without additives
from *E. coli*

M = 26.8 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8308,0010	10 µg
A8308,0050	50 µg

Comment: Recombinant Human GDF-5 produced in *E. coli* is a homodimer, non-glycosylated, polypeptide chain containing 2 x 117 amino acids and having a total molecular mass of 26.8 kDa. To enable bacterial expression of rhGDF-5 we removed the N-terminal sequence Ala-Pro-Leu-Thr and added the Lys.

rHu GDNF bioconfident grade



B

recombinant Human Glial Derived
Neurotrophic Factor
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 17.2 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8756,0010	10 µg
A8756,0050	50 µg
A8756,0100	100 µg
A8756,1000	1 mg

Comment: Recombinant human GDNF contains 134 amino acids and a 16 amino acid histidine-based tag for a total length of 150 amino acids and has a predicted molecular mass of 17.2 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 25 kDa in SDS-PAGE.

rHu GDNF



B

recombinant Human Glial Derived
Neurotrophic Factor
lyophilized after dialysis against 10 mM
sodium citrate and 150 mM NaCl
from *E. coli*

M = 30.36 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8335,0002	2 µg
A8335,0010	10 µg
A8335,0100	100 µg

Comment: This factor was found initially in conditioned medium of the rat B49 glial cell line. GDNF is a disulfide-bonded homodimeric glycosylated protein of 134 amino acids. The proteins contain seven conserved cysteine residues in the same relative spacing found in all members of the TGF-beta superfamily of proteins. The human GDNF gene has been mapped to chromosome 5p13.1-p13.3. Related factors are Neurturin, Persephin, and Artemin. Collectively they are being referred to as GDNF family ligands. Recombinant Human Glial-derived Neurotrophic Factor (GDNF) produced in *E. coli* is a homodimer, non-glycosylated, polypeptide chain containing 2 x 135 amino acids and having a total molecular mass of 30.36 kDa.

Gelatin powdered, pure Ph. Eur., NF

C

CAS-No.: 9000-70-8
HS-No.: 35030010
EC-No.: 232-554-6

Storage: RT
LGK: 10 - 13

Specification:

Appearance (powder) yellowish to yellow-
ish-brown
Conductivity (1 %, H₂O, 30°C)
..... max. 1 mS/cm
Gelatinising capacity complies
Heavy metals (as Pb) max. 0.005 %
Identity complies

Loss on drying max. 15 %
Microbiological test max. 1000 CFU/g
Odor/H₂O-insol. subst. complies
Residue on ignition max. 2.0 %
pH (1 %; H₂O) 3.8 - 7.6
Peroxides max. 0.001 %
Residual solvents complies

Sulfur dioxide max. 0.004 %
As max. 0.00008 %
Cr max. 0.001 %
Fe max. 0.003 %
Zn max. 0.003 %

Order-No.	Quantity
A1693,0500	500 g
A1693,1000	1 kg
A1693,10006	6 x 1 kg
A1693,5000	5 kg

- Literature:** (1) Heussen, C. & Dowdle, E.B. (1980) *Anal. Biochem.* **102**, 196-202
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*. 2nd Edition page 18.44. Cold Spring Harbor Laboratory Press. Cold Spring Harbor, N.Y.
(3) Kleiner, D.E. & Stettin-Stevenson, W.G. (1994) *Anal. Biochem.* **218**, 325-329
(4) Hassel, M. et al. (1996) *Anal. Biochem.* **242**, 274-275
(5) Jones, B.L. et al. (1998) *Anal. Biochem.* **263**, 214-220
(6) Stommel, J.R. et al. (1997) *BioTechniques* **22**, 1064-1066
- Electrophoretic analysis of the plasminogen activator in polyacrylamide gels.
Quantitative zymography: detection of gelatinase in picogram quantities.
Extraction of proteins from protease-rich tissue without proteolysis.
Improved endoproteinase assay with gelatin or azogelatin.
Effect of gelatin and BSA in the PCR to increase RAPD.



Geldanamycin BioChemica

B

from *Streptomyces hygroscopicus* var.
Geldanus

C₂₉H₄₀N₂O₉
M = 560.64 g/mol
CAS-No.: 30562-34-6
HS-No.: 29419000

Storage: -20°C
protected from light

Melting point 265 - 268°C

Specification:

Assay min. 98 %
λ_{max} (MeOH) 255, 304 nm

Solubility (10 mg/ml Dichloromethane)
..... clear, yellow

Order-No. Quantity
A7659,0001 1 mg

- Literature:** (1) Stebbins, C.E. *et al.* (1997) *Cell* **89**, 239-250
(2) Tikhomirov, O. & Carpenter, G. (2000) *J. Biol. Chem.* **275**, 26625-26631
(3) Suttitanamongkol, S. *et al.* (2000) *Biochem. J.* **345**, 307-314
(4) Malhotra, V. *et al.* (2001) *Am. J. Respir. Cell Mol. Biol.* **25**, 92-97
(5) Dikalov, S. *et al.* (2002) *J. Biol. Chem.* **277**, 25480-25485
(6) Lerdup, M. *et al.* (2006) *J. Cell Sci.* **119**, 85-95

Crystal Structure of an Hsp90-Geldanamycin Complex.
Geldanamycin Induces Erb-2 Degradation by Proteolytic Fragmentation.
Geldanamycin disrupts platelet-membrane structure, leading to membrane permeabilization and inhibition of platelet aggregation.
Geldanamycin Inhibits NF-κB Activation and Interleukin-8 Gene Expression in Cultured Human Respiratory Epithelium.
Geldanamycin Leads to Superoxide Formation by Enzymatic and Non-enzymatic Redox Cycling.
Geldanamycin stimulates internalization of ErbB2 in a proteasome-dependent way.

Comment: Geldanamycin belongs to the group of ansamycin antibiotics, which are characterized by a planar, aromatic benzoquinone system (benzoquinone ansamycin). The most popular property of Geldanamycin is its specific binding to the heat shock protein Hsp 90 (1) and the subsequent physiological effects. This includes the formation of superoxides (5). In addition it frequently is applied as a tyrosine kinase inhibitor (e.g. ErbB2; ref. 2, 6). Besides, Geldanamycin disrupts the platelet-membrane structure, leading to a permeabilization (3). Moreover, the antibiotic seems to prevent direct binding of NF-κB to DNA and thereby blocking the expression of e.g. the Interleukin-8 gene (4).
Solubility and Stability: Geldanamycin is soluble in DMSO and Methanol. The working concentration is 1 - 10 µg/ml [1 µg/ml (NF-κB inhibition) 10 µg/ml (Superoxide formation) 3 µM (= 1.68 µg/ml ErbB2 degradation)]. A stock solution in DMSO has to be as concentrated that the concentration is reduced to a maximum of 0.1 % by dilution in e.g. medium. Geldanamycin is stable if stored protected from light at -20°C. It is shipped at ambient temperature. For long-term storage, solutions are stored at -20°C and short-term (approx. 2 weeks) at +4°C protected from light.

Gel Filtration Column for Protein Purification see DextraSEC PRO10 Page 271
Gel Filtration Dye Terminator Removal see DextraSEC 96W Page 271
Gel Filtration Matrix Dextran-based see AppliXchange-G25 M Page 116
Gel Filtration Nucleic Acids see DextraSEC NA2 Page 270
Gel Filtration Nucleic Acids see DextraSEC NA10 Page 271
Gel Filtration Protein see DextraSEC PRO2 Page 271

Gellan gum

B

Agar substitute gelling agent

CAS-No.: 71010-52-1
HS-No.: 39139000
EC-No.: 275-117-5

Storage: RT

Specification:

Loss on drying max. 15 %

Order-No. Quantity
A5345,0100 100 g
A5345,0250 250 g
A5345,0500 500 g
A5345,1000 1 kg

Comment: Gellan gum is a naturally-derived gelling agent, which can be used in place of agar. It produces clear gels in aqueous systems and may be used in microbiological applications and in plant tissue culture. It can be autoclaved. Please note that Gellan gum autoclaved in deionized water won't form a gel! Gelation requires cations, of which magnesium (usually added as magnesium sulfate) gives best results. PBS may be used as well. The Gellan gum concentration may be reduced by half in comparison to agar. The working concentration may be as low as 6 - 8 g/L.

GelSave

B

Solution for the treatment of glass plates
supplied in a 'spray bottle'

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1993
Danger
H225-H336-H319
P262-P305+P351+P338



Specification:

Solvent 2-Propanol

Order-No. Quantity
A2574,0100 100 ml
A2574,0250 250 ml

Comment: GelSave is a non-toxic substitute for the commonly used dimethyldichlorosilane (silanizing solution). It is used for the treatment of glass plates, to prevent the sticking of polyacrylamide to the glass. GelSave may be used for all applications in gel electrophoresis. The solvent is isopropanol. Therefore, treatment of the glass plates can be performed outside a fume hood. Avoid direct contact with skin and eyes. It is highly flammable.

Instructions: Clean the glass plates thoroughly from dust and fat. Remove residual dimethyldichlorosilane by cleaning with ethanol or isopropanol. Apply to the clean glass plate (approx. 20 x 20 cm) 1.5 - 2 ml of GelSave and wipe with a fluff-free paper towel until the solvent is evaporated. Wash with water or isopropanol. Repeat the treatment, if the glass plates have been used up to three times. Treat only one plate.

Genistein BioChemica

B

4',5,7-Trihydroxyisoflavone

$C_{15}H_{10}O_5$
 $M = 270.23$ g/mol
 CAS-No.: 446-72-0
 HS-No.: 29329900
 EC-No.: 207-174-9

Storage: -20°C
 LGK: 10 - 13

Specification:

Assay min. 98 %
 Solubility clear, colorless (1 %, $CHCl_3$: MeOH 1:1)

Order-No.	Quantity
A2202,0025	25 mg
A2202,0050	50 mg
A2202,0100	100 mg

Literature: (1) Ogawara, H. et al. (1986) *J. Antibiotics* **39**, 606-608
 (2) Akiyama, T. et al. (1987) *J. Biol. Chem.* **262**, 5592-5595
 (3) Okura, A. et al. (1988) *Biochem. Biophys. Res. Com.* **157**, 183-189
 (4) Markovits, J. et al. (1989) *Cancer Res.* **49**, 5111-5117
 (5) Abler, A. et al. (1992) *J. Biol. Chem.* **267**, 3946-3951

Genistein: A specific tyrosine protein kinase inhibitor from *Pseudomonas*.
 Genistein: A specific inhibitor of tyrosine-specific protein kinases.
 Genistein inhibits the topoisomerase activity and the growth of Ha-ras transformed cells.
 Genistein inhibits topoisomerase II activity in mammalian cells.
 Genistein inhibits the post receptor effects of insulin without inhibiting the insulin receptor kinase.

Gentamicin sulfate see Gentamycin sulfate Page 372

Gentamycin sulfate

Gentamicin sulfate

$C_{19-21}H_{39-43}N_5O_7 \cdot 2.5H_2SO_4$
 $M = 694.75 - 723.75$ g/mol
 CAS-No.: 1405-41-0
 HS-No.: 29419000
 EC-No.: 215-778-9

Storage: RT
 LGK: 10 - 13

WGK: 1
 Danger
 H317-H334
 P280-P261-P342+P311

**Gentamycin sulfate BioChemica**

B

Specification:

Activity (anhydrous subst.) approx. 600 I.U./mg
 $\alpha 20^\circ C/D$; 10 %, H_2O +107° - +121°
 pH (4 %; H_2O) 3.5 - 5.5
 Water (K.F.) max. 15 %
 Sulfate 32 - 35 %

Order-No.	Quantity
A1492,0001	1 g
A1492,0005	5 g
A1492,0010	10 g
A1492,0025	25 g

Comment: Gentamycin is an aminoglycoside antibiotic and was isolated from *Micromonospora* species (actinomycetales). The sulfate salt is soluble in water, formamide, ethylene glycol, 0.1 N NaOH or 0.1 N HCl at a concentration of > 20 mg/ml. It is insoluble in methanol, ethanol, acetone, benzene or chloroform.
 In solutions Gentamycin is very stable at -20°C to 37°C. Short autoclaving is possible. It may be employed in the pH range from 2.2 and 10 without loss of activity.

Gentamycin sulfate pure Ph. Eur.

C

Specification:

Activity (anhydrous substance) min. 590 I.U./mg	Identity complies	Methanol max. 1.0 %
Appearance of solution complies	Spec. rotation (10 %; H_2O ; anhydrous substans) +107° - +121°	Water (K.F.) max. 15 %
Bacterial endotoxins complies	Sulfated ash max. 1.0 %	Sulfate (anhydrous substans) 32.0 - 35.0 %
Composition complies	pH (4 %; H_2O) 3.5 - 5.5	

Order-No.	Quantity
A4854,0001	1 g
A4854,0005	5 g
A4854,0010	10 g
A4854,0025	25 g

Gentian violet see Crystal violet (C.I. 42555) Page 247

 β -D-Gentiobiose

B

6-O- β -D-Glucopyranosyl-D-glucose, Amygdalose

$C_{12}H_{22}O_{11}$
 $M = 342.30$ g/mol
 CAS-No.: 554-91-6
 HS-No.: 29400000
 EC-No.: 209-074-0

Storage: RT

WGK: 3

Specification:

Assay min. 99 %
 $\alpha 20^\circ C/D$; 2 %, H_2O +8.5° - +10.5°
 Identity complies
 pH (1 %, H_2O) 6.0 - 7.0

Water (K.F.) max. 1 %

Order-No.	Quantity
A7087,0250	250 mg
A7087,0001	1 g
A7087,0005	5 g

5-Geranyloxypsoralen see Bergamottin HPLC grade Page 136

Gibberellic acid BioChemica

B

GA₃, Gibberellin

$C_{19}H_{22}O_6$
 $M = 346.38$ g/mol
 CAS-No.: 77-06-5
 HS-No.: 29322985
 EC-No.: 201-001-0

Storage: RT
 LGK: 10-13
 Disposal: 4

WGK: 1

Specification:

Assay approx. 90 %
 $\alpha 20^\circ C/D$; 2 %, MeOH +71° - +81°
 Identity (IR) complies

Order-No.	Quantity
A4586,0001	1 g
A4586,0005	5 g

Gibberellin see Gibberellic acid *BioChemica* Page 372**Giemsa stain**

C

CAS-No.: 51811-82-6
HS-No.: 38220000
EC-No.: 257-438-2Storage: RT
LGK: 10-13WGK: 2
Warning
H319
P305+P351+P338**Specification:** λ max. 1 (MeOH) 635 - 653 nm
 λ max. 2 (MeOH) 520 - 527 nm
Loss on drying (105°C) max. 10 %
Melting point 300°C

UV/VIS spectrum complies

Order-No.	Quantity
A0909,0010	10 g
A0909,0025	25 g
A0909,0100	100 g

Giemsa - Solution Microscopy grade

C

HS-No.: 38220000

Storage: RT
LGK: 3 AClass / PG: 3(6.1)/II
UN1992
WGK: 1
Danger
H370-H225-H301-H331-H311
P302+P352-P210-P280**Specification:**

UV spectrum complies to reference

Order-No.	Quantity
A0885,0100	100 ml
A0885,0250	250 ml
A0885,0500	500 ml
A0885,1000	1 L
A0885,10006	6 x 1 L
A0885,2500	2.5 L
A0885,25004	4 x 2.5 L

[6]-Gingerol HPLC grade

B

from *Zingiber officinale* $C_{17}H_{26}O_4$
 $M = 294.39$ g/mol
CAS-No.: 23513-14-6
HS-No.: 29420000Storage: 2-8°C
LGK: 10 - 13Danger
H315-H319-H301-H335
P305+P351+P338-P280-P261-
P332+P313-P301+P310**Specification:**

Assay min. 98 %

Order-No.	Quantity
A3408,0010	10 mg
A3408,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**[8]-Gingerol HPLC grade**

B

from *Zingiber officinale* $C_{19}H_{30}O_4$
 $M = 322.44$ g/mol
CAS-No.: 23513-08-8
HS-No.: 29420000Storage: 2-8°C
LGK: 10 - 13Warning
H317-H315-H335-H413
P301+P312-P280-P305+P351+P338**Specification:**

Assay min. 98 %

Order-No.	Quantity
A4509,0010	10 mg
A4509,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**Ginkgolic acids RN pure**

B

from *Ginkgo biloba* $C_{20-24}H_{32-36}O_3$
 $M = 320.50 - 374.60$ g/mol
HS-No.: 29420000

Storage: 2-8°C

Warning
H319-H335-H315
P261-P305+P351+P338**Specification:**

Assay min. 90 %

Order-No.	Quantity
A6760,0005	5 mg
A6760,0010	10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Ginkgolide A HPLC grade

B

from <i>Ginkgo biloba</i>	$C_{20}H_{24}O_9$	Storage: 2-8°C
	$M = 408.41\text{ g/mol}$	LGK: 10 - 13
	CAS-No.: 15291-75-5	
	HS-No.: 29420000	
Specification:		
Assay	 min. 98 %	
		Order-No.
		A6753,0010
		A6753,0020
		Quantity
		10 mg
		20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Ginkgolide B HPLC grade

B

1-Hydroxyginkgolide A from <i>Ginkgo biloba</i>	$C_{20}H_{24}O_{10}$	Storage: 2-8°C
	$M = 424.40\text{ g/mol}$	LGK: 10 - 13
	CAS-No.: 15291-77-7	
	HS-No.: 29420000	
Specification:		
Assay	 min. 99 %	
		Order-No.
		A3389,0010
		A3389,0020
		Quantity
		10 mg
		20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Ginkgolide C HPLC grade

B

1,7-Dihydroxyginkgolide A from <i>Ginkgo biloba</i>	$C_{20}H_{24}O_{11}$	Storage: 2-8°C
	$M = 440.40\text{ g/mol}$	LGK: 10 - 13
	CAS-No.: 15291-76-6	
	HS-No.: 29420000	
Specification:		
Assay	 min. 95 %	
		Order-No.
		A6756,0010
		A6756,0020
		Quantity
		10 mg
		20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Glasgow - MEM (BHK 21)

HS-No.: 38210000	Storage: 2-8°C	hygroscopic
	LGK: 10 - 13	P262

Glasgow - MEM (BHK 21)

B

without L-Glutamine	Order-No.	Quantity
without Tryptose/Phosphate-Bouillon	A2024,1000	1 L
without Sodium hydrogen carbonate	A2024,5000	5 L
	A2024,9010	10 L
	A2024,9050	50 L

Glasgow - MEM (BHK 21)

B

with L-Glutamine	Order-No.	Quantity
without Tryptose/Phosphate-Bouillon	A1320,1000	1 L
without Sodium hydrogen carbonate	A1320,5000	5 L
	A1320,9010	10 L
	A1320,9050	50 L

Glasgow - MEM (BHK 21)

B

without L-Glutamine	Order-No.	Quantity
with Tryptose/Phosphate-Bouillon	A2025,1000	1 L
without Sodium hydrogen carbonate	A2025,5000	5 L
	A2025,9010	10 L
	A2025,9050	50 L

Glasgow - MEM (BHK 21)

B

with L-Glutamine	Order-No.	Quantity
with Tryptose/Phosphate-Bouillon	A1321,1000	1 L
without Sodium hydrogen carbonate	A1321,5000	5 L
	A1321,9010	10 L
	A1321,9050	50 L

D-GlcNAc see N-Acetyl-D-glucosamine *BioChemica* Page 49
recombinant Human Glial Derived Neurotrophic Factor see rHu GDNF bioconfident grade Page 370
rekombinant Human Glial Derived Neurotrophic Factor see rHu GDNF Page 370

Gliotoxin BioChemica

B

from *Gliocladium fimbriatum*

$C_{13}H_{14}N_2O_4S_2$
 $M = 326.04$ g/mol
 CAS-No.: 67-99-2
 HS-No.: 29419000

Storage: 2-8°C
 protected from light

Class / PG: 6.1/III
 UN3462
 Danger
 H301
 P301+P310



Melting point 200 - 202°C

Specification:

Assay (TLC) min. 97 %
 λ_{max} 272 nm
 Solubility (10 mg/ml MeOH) clear, colorless

Order-No.	Quantity
A7665,0005	5 mg
A7665,0025	25 mg

- Literature:** (1) Trown, P.W. & Bilello, J.A. (1972) *Antimicrob. Ag. Chemother.* **2**, 261-266
 (2) Müllbacher, A. et al. (1987) *Proc. Natl. Acad. Sci. USA* **84**, 3822-3825
 (3) Waring, P. et al. (1988) *J. Biol. Chem.* **263**, 18493-18499
 (4) Sutton, P. et al. (1994) *Infect. Immun.* **62**, 1192-1198
 (5) Rodriguez, P.L. & Carrasco, L. (1992) *J. Virol.* **66**, 1971-1976
 (6) Pahl, H.L. et al. (1996) *J. Exp. Med.* **183**, 1829-1840
 (7) Zhou, X. et al. (2000) *Toxicol. Sci.* **54**, 194-202

Mechanism of Action of Gliotoxin: Elimination of Activity by Sulfhydryl Compounds. Selective resistance of bone marrow-derived hemopoietic progenitor cells to gliotoxin. Gliotoxin Induces Apoptosis in Macrophages Unrelated to Its Antiphagocytic Properties. In Vivo Immunosuppressive Activity of Gliotoxin, a Metabolite Produced by Human Pathogenic Fungi. Gliotoxin: Inhibitor of Poliovirus RNA Synthesis That Blocks the Viral RNA Polymerase 3D^{pol}. The Immunosuppressive Fungal Metabolite Gliotoxin Specifically Inhibits Transcription Factor NF- κ B. Gliotoxin-Induced Cytotoxicity Proceeds via Apoptosis and Is Mediated by Caspases and Reactive Oxygen Species in LLC-PK1 Cells.

Comment: Gliotoxin is a mycotoxin of the epipolythiodioxopiperazine class (sulfur-containing antibiotic) produced by several unrelated species of human pathogenic fungi. In the early fifties and sixties the antitumor and antiviral activities were observed (antitumor: Mason & Kidd (1951) *J. Immunol.* **66**, 99-106. antiviral: Rightsel et al. (1964) *Nature* **204**, 1333-1334). In the meantime, several other physiological effects were described. The mechanism of the antiviral activity is based on an inactivation of the viral RNA polymerase by Gliotoxin. In different cell types, Gliotoxin induces apoptosis, inhibits phagocytosis and showing immunosuppressive activity *in vivo*. The latter may be attributed to the inhibition of transcription factors NF- κ B. The mechanism probably involves the inhibition of degradation of I κ B- α , the inhibitory subunit of NF- κ B.
Solubility and Stability: Gliotoxin is soluble in DMSO, DMF, pyridine, chloroform, and ethanol. A stock solution in ethanol (e.g. 1 mg/ml; ref. 1,2) may be stored indefinitely at +4°C or -20°C. The working concentration varied from 0.05 μ g/ml (1) to 1 μ g/ml (6).

Glucagon 1-37

B

Oxyntomodulin (porcine), H-His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Lys-Tyr-Leu-Asp-Ser-Arg-Arg-Ala-Gln-Asp-Phe-Val-Gln-Trp-Leu-Met-Asn-Thr-Lys-Arg-Asn-Lys-Asn-Asn-Ile-Ala-OH

$C_{192}H_{235}N_{59}O_{61}S$
 $M = 4421.88$ g/mol
 CAS-No.: 16941-32-5
 HS-No.: 29371900
 EC-No.: 232-708-2

Storage: -20°C

Specification:

Assay approx. 90 %

Order-No.	Quantity
A1997,0500	500 μ g

Glucagon Fragment 30-37

B

C-terminal Fragment of Glucagon 1-37 (Oxyntomodulin) H-Lys-Arg-Asn-Lys-Asn-Asn-Ile-Ala-OH

$C_{39}H_{72}N_{16}O_{12}$
 $M = 957.10$ g/mol
 CAS-No.: 81117-26-2
 HS-No.: 29371900

Storage: -20°C

Specification:

Assay min. 97 %

Order-No.	Quantity
A0411,0001	1 mg

1,4- α -D-Glucan-glucanohydrolase see α -Amylase from Saliva, human Page 109
 D-Glucitol see D(-)-Sorbitol Page 758
 N-(D-Glucityl)-N-methylnonanamide see MEGA-9 Page 524

Glucobrassicin HPLC grade



B

3-Indolylmethylglucosinolate potassium salt
 from *Brassica oleracea*

$C_{16}H_{18}KN_2O_5S_2$
 $M = 486.26$ g/mol
 CAS-No.: 4356-52-9
 HS-No.: 29349990

Storage: 2-8°C

Specification:

Assay min. 97 %

Order-No.	Quantity
A8692,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Glucochloralose see α -Chloralose Page 200

Glucoerucin HPLC grade



B

4-Methylthiobutylglucosinolate
potassium salt
from *Eruca sativa*

$C_{12}H_{22}KNO_9S_3$
 $M = 459.61 \text{ g/mol}$
CAS-No.: 21973-56-8
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.	Quantity
A8978,0010	10 mg
A8978,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Glucoiberin HPLC grade



B

3-(Methylsulfonyl)propylglucosinolate
potassium salt
from *Iberis amara*

$C_{11}H_{20}KNO_{10}S_3$
 $M = 461.56 \text{ g/mol}$
CAS-No.: 554-88-1
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.	Quantity
A8982,0010	10 mg
A8982,0020	20 mg
A8982,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Glucoluteolin see Luteolin-7-glucoside HPLC grade Page 498
6-C-Glucoluteolin see Homoorientin HPLC grade Page 410
8-C-Glucoluteolin, Lutexin see Orientin HPLC grade Page 586

Gluconapin HPLC grade



B

3-Butenylglucosinolate potassium salt
from *Brassica napus*

$C_{11}H_{18}KNO_9S_2$
 $M = 411.48 \text{ g/mol}$
CAS-No.: 19041-09-9
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.	Quantity
A8986,0010	10 mg
A8986,0020	20 mg
A8986,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Gluconasturtiin HPLC grade



B

Phenylethylglucosinolate potassium salt
from *Nasturtium officinale*

$C_{15}H_{20}KNO_9S_2$
 $M = 461.16 \text{ g/mol}$
CAS-No.: 499-30-9
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 95 %

Order-No.	Quantity
A8695,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

D-Gluconate-6-phosphate trisodium salt see 6-Phosphogluconic acid trisodium salt *BioChemica* Page 623
D-Gluconic acid calcium salt monohydrate see Calcium gluconate monohydrate pure Ph. Eur., USP Page 180

Gluconic acid potassium salt

B

Potassium gluconate

$C_6H_{11}KO_7$
 $M = 234.25 \text{ g/mol}$
CAS-No.: 299-27-4
HS-No.: 29181600
EC-No.: 206-074-2

Storage: RT
LGK: 10-13

WGK: nwg

Solubility (H₂O) soluble

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 3 %

Order-No.	Quantity
A3133,0100	100 g
A3133,0250	250 g
A3133,0500	500 g

Gluconic acid sodium salt see Sodium gluconate pure USP Page 733
O-α-D-Glucopyranosyl-(1→3)-β-D-fructofuranosyl-α-D-glucopyranoside see D(+)-Melezitose monohydrate *BioChemica* Page 524
8-Glucopyranosylapigenin see Vitexin HPLC grade Page 857
3-O-α-D-Glucopyranosyl-D-fructose see D(+)-Turanoose *BioChemica* Page 846
α-D-Glucopyranosyl-D-fructose monohydrate see Maltulose - Monohydrat *BioChemica* Page 512
α-D-Glucopyranosyl-α-D-glucopyranoside see D(+)-Trehalose dihydrate *BioChemica* Page 828
4-O-α-D-Glucopyranosyl- D-glucose see D(+)-Maltose monohydrate Page 511

6-O-β-D-Glucopyranosyl-D-glucose see β-D-Gentiobiose Page 372

D(+)-Glucosamine hydrochloride *BioChemica*

B

Chitosamin hydrochloride, 2-Amino-2-deoxy-D-glucose hydrochloride

C₆H₁₃NO₅ · HCl
M = 215.64 g/mol
CAS-No.: 66-84-2
HS-No.: 29329900
EC-No.: 200-638-1

Storage: RT

Melting point 190 - 194°C

Specification:

Assay min. 99 %
α20°C/D; 2 %, H₂O +72.5° ± 1°

Order-No.	Quantity
A6872,0250	250 g
A6872,0500	500 g
A6872,1000	1 kg

D(+)-Glucose anhydrous

Corn sugar, Dextrose

C₆H₁₂O₆
M = 180.16 g/mol
CAS-No.: 50-99-7
HS-No.: 17023050
EC-No.: 200-075-1

Storage: RT
LGK: 10 - 13

WGK: nwg

Melting point 146°C

D(+)-Glucose anhydrous Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay min. 99 %
α20°C/D; 10 %, H₂O +52.5° - +53.3°
Sulfated ash max. 0.1 %

Water (K.F.) max. 0.2 %
Chloride max. 0.01 %
Sulfate max. 0.02 %
Sulfite max. 0.001 %

As max. 0.0001 %
Ca max. 0.02 %
Pb max. 0.00005 %

Order-No.	Quantity
A3666,0500	500 g
A3666,1000	1 kg
A3666,5000	5 kg

D(+)-Glucose anhydrous Cell culture grade

B

Specification:

Pyrogen test complies
Assay min. 99 %
α20°C/D; 10 %, H₂O +52.5° - +53.3°
Heavy metals (as Pb) max. 0.0005 %

Sulfated ash max. 0.1 %
Water (K.F.) max. 0.02 %
Chloride max. 0.01 %
Sulfate max. 0.02 %

As max. 0.0001 %

Order-No.	Quantity
A0883,0500	500 g
A0883,1000	1 kg
A0883,5000	5 kg

D(+)-Glucose anhydrous *BioChemica*

B

Specification:

Assay min. 99 %
α20°C/D; 10 %, H₂O +52.5° - +53.3°
Heavy metals (as Pb) max. 0.0005 %
Insoluble matter complies
pH (10 %; H₂O) 5.0 - 7.0

Water (K.F.) max. 1 %
Chloride max. 0.01 %
Sulfate max. 0.02 %

A (1 cm/1 M in H₂O)
260 nm max. 0.03
280 nm max. 0.03

Order-No.	Quantity
A1422,0500	500 g
A1422,1000	1 kg
A1422,5000	5 kg
A1422,9010	10 kg

D(+)-Glucose anhydrous pure Ph. Eur.

C

Specification:

α20°C/D; 10 %, H₂O +52.5° - +53.3°
Acidic/alkaline react. subst. complies
Appearance of solution complies
Identity complies
Sulfated ash max. 0.1 %
Foreign carbohydrates, dextrins, soluble starch complies

Water (K.F.) max. 1 %
Chloride max. 0.0125 %
Sulfate max. 0.02 %
Sulfite max. 0.0015 %
As max. 0.0001 %
Ba complies
Ca max. 0.02 %

Pb max. 0.00005 %

Order-No.	Quantity
A3594,0500	500 g
A3594,1000	1 kg
A3594,10006	6 x 1 kg
A3594,5000	5 kg
A3594,9010	10 kg
A3594,9025	25 kg

D(+)-Glucose monohydrate

Corn sugar, Dextrose

C₆H₁₂O₆ · H₂O
M = 198.17 g/mol
CAS-No.: 14431-43-7
HS-No.: 17023050
EC-No.: 200-075-1

Storage: RT
LGK: 10 - 13

WGK: nwg

Melting point 83°C

Solubility (20°C) 470 g/L (H₂O)

D(+)-Glucose monohydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay min. 99 %
α20°C/D; 10 %, H₂O +52.5° - +53.3°
Sulfated ash max. 0.1 %

Water (K.F.) 7.0 - 9.5 %
Chloride max. 0.01 %
Sulfate max. 0.02 %
Sulfite max. 0.001 %

As max. 0.0001 %
Ca max. 0.02 %
Pb max. 0.00005 %

Order-No.	Quantity
A3730,0500	500 g
A3730,1000	1 kg

D(+)-Glucose monohydrate *BioChemica*

B

Specification:

Assay min. 99 %
α20°C/D; 10 %, H₂O +52.5° - +53.3°
Heavy metals (as Pb) max. 0.0005 %
Insoluble matter complies
pH (10 %; H₂O) 5.0 - 7.0

Water (K.F.) 7.0 - 9.5 %
Chloride max. 0.01 %
Sulfate max. 0.02 %

A (1 cm/0.5 M in H₂O)
260 nm max. 0.05
280 nm max. 0.05

Order-No.	Quantity
A1349,1000	1 kg
A1349,10006	6 x 1 kg
A1349,5000	5 kg
A1349,9010	10 kg

D(+)-Glucose monohydrate pure Ph. Eur.

C

Specification:

α 20°C/D; 10 %, H₂O +52.5° - +53.3°
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Identity complies
 Sulfated ash max. 0.1 %
 Foreign carbohydrates, dextrins, soluble starch

complies
 Water (K.F.) 7.0 - 9.5 %
 Chloride max. 0.0125 %
 Sulfate max. 0.02 %
 Sulfite max. 0.0015 %
 As max. 0.0001 %

Ba complies
 Ca max. 0.02 %
 Pb max. 0.00005 %

Order-No.	Quantity
A3617,1000	1 kg
A3617,10006	6 x 1 kg
A3617,5000	5 kg
A3617,9010	10 kg
A3617,9025	25 kg

L(-)-Glucose BioChemica

B

C₆H₁₂O₆
 M = 180.16 g/mol
 CAS-No.: 921-60-8
 HS-No.: 17023050
 EC-No.: 213-068-3

Storage: RT

Specification:

Assay min. 99 %
 α 20°C/D; 4 %, H₂O -53° ± 2°

Order-No.	Quantity
A6860,0250	250 mg
A6860,0001	1 g

D-Glucose dehydrogenase, bacterial Technical grade

B

[EC 1.1.1.47]
 supplied liquid in 20 % glycerol
 of bacterial origin

M = ~126 kDa
 HS-No.: 35079090

Storage: -20°C
 Shipment: wet ice

T_{opt.} 50°C
 pH_{opt.} 8.5

Specification:

Activity min. 500 U/ml

Order-No.	Quantity
A7921,0001	1 KU
A7921,0010	10 KU
A7921,0100	100 KU

Comment: The bacterial D-Glucose dehydrogenase is used in the regeneration of the cofactors NADH and NADPH.

Unit definition: One unit is the amount of enzyme required to metabolize 1 μ mol substrate per minute in 75 mM Tris buffer, pH 8.0 at 30°C. This technical enzyme grade is intended for use in chemical synthesis.

Glucose Oxidase from *Aspergillus niger*, low catalase

B

[E.C. 1.1.3.4], β -D-Glucose : oxygen 1-
 oxidoreductase

M = ~186000 g/mol
 CAS-No.: 9001-37-0
 HS-No.: 35079090

Storage: -20°C

Specification:

Glucose oxidase 4000 - 6000 U/ml
 Catalase not detectable
 Specific gravity 1.18 ± 0.01
 pH (20°C) 5.1 - 5.4

Order-No.	Quantity
A4669,0001	1 ml
A4669,0005	5 ml
A4669,0010	10 ml

β -D-Glucose : oxygen 1-oxidoreductase see Glucose Oxidase from *Aspergillus niger* Page 378

α -D-Glucose 1-phosphate disodium salt hydrate BioChemica

B

α -D-Glycopyranose 1-phosphate, Cori
 ester

C₆H₁₁Na₂O₉P · xH₂O
 M = 304.1 g/mol · xH₂O
 CAS-No.: 56401-20-8
 HS-No.: 29389090

Storage: -20°C

Specification:

Assay min. 97 %
 α 20°C/D; c = 1, H₂O +76° - +80°
 Heavy metals (as Pb) max. 0.002 %

pH (2 %; H₂O) 8.3 - 9.3 (20°C)
 Water (K.F.) 17.5 - 19.5 %
 Na min. 11.6 %

Order-No.	Quantity
A4703,0001	1 g
A4703,0010	10 g

Glucose-6-phosphate disodium salt dihydrate

B

C₆H₁₁Na₂O₉P · 2H₂O
 M = 340.13 g/mol
 CAS-No.: 3671-99-6
 HS-No.: 29400000
 EC-No.: 222-938-1

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

WGK: 1

Specification:

Assay (enzym.) min. 98 %
 Water (K.F.) 8.5 - 12.5 %

Order-No.	Quantity
A3789,0001	1 g
A3789,0005	5 g
A3789,0010	10 g

7-Glucosylapigenin see Apigenin-7-glucoside Page 113

Glucotropaeolin HPLC grade

B

Benzylglucosinolate
from *Tropaeolum majus*

$C_{14}H_{18}KNO_9S_2$
 $M = 447.52$ g/mol
CAS-No.: 5115-71-9
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.

A5300,0020

A5300,0050

Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

D-Glucuronic acid sodium salt monohydrate *BioChemica*

B

Sodium-D-glucuronate

$C_6H_9NaO_7 \cdot H_2O$
 $M = 234.14$ g/mol
CAS-No.: 207300-70-7
HS-No.: 29329900
EC-No.: 239-065-7

Storage: RT

WGK: 1

Melting point approx. 138°C
(dec.)

Specification:

Assay (titr.) min. 99 %
 α 20°C/D; 2 %, H_2O ; 2 h ... +20° - +22°

Order-No.

A7741,0010

A7741,0025

A7741,0050

Quantity

10 g

25 g

50 g

D(+)-Glucuronic acid- γ -lactone *BioChemica*

B

D-(+)-Glucurono-6,3-lactone,
Glucuronolactone

$C_6H_8O_6$
 $M = 176.12$ g/mol
CAS-No.: 32449-92-6
HS-No.: 29322985
EC-No.: 251-053-3

Storage: RT

WGK: 2

Melting point approx. 175°C
(dec.)

Specification:

Assay (titr.) min. 98 %
 α 20°C/D; 10 %, H_2O ; 24 h; ... +17.5° - +19.5°

Order-No.

A7754,0050

A7754,0100

A7754,0250

Quantity

50 g

100 g

250 g

D-(+)-Glucurono-6,3-lactone see D-Glucuronic acid- γ -lactone *BioChemica* Page 379
Glucuronolactone see D-Glucuronic acid- γ -lactone *BioChemica* Page 379

Glutamate Oxaloacetate Transaminase (GOT), human

GOT, *Aspartate Aminotransferase*

CAS-No.: 9000-97-9
HS-No.: 35079090

Glutamate Oxaloacetate Transaminase (GOT), human lyophilized

B

Glutamic-oxalacetic transaminase, *L-*
Aspartate : 2-Oxoglutarate
Aminotransferase
[EC 2.6.1.1]
lyophilized
from human heart

Storage: -20°C

Specification:

Activity 50 - 80 U/mg

Order-No.

A6954,0010

A6954,0025

Quantity

10 U

25 U

Comment: **Unit Definition:** One unit will catalyze the transamination of one micromole of L-aspartate to α -ketoglutarate forming L-glutamate and oxaloacetate per minute at 37°C and pH 7.8. Measured at 340 nm as one equimolar amount of NAD produced by a coupled reaction.

CERTIFICATION: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Glutamate-Oxaloacetate-Transaminase (GOT), human Suspension

B

SGOT, ASAT, Aspartate Transaminase,
Serum glutamic oxaloacetic
transaminase (SGOT), AST
[EC 2.6.1.1]

Storage: 2-8°C

Ammonium sulfate suspension

Specification:

Activity typically 50 U/ml
Protein typically >2 mg pro-
tein/ml

Order-No.	Quantity
A7413,0025	25 U
A7413,0100	100 U

Comment: Two SGOT/AST isoenzymes are present in humans. They have high similarity. GOT1, the cytosolic isoenzyme derives mainly from red blood cells and heart. GOT2, the mitochondrial isoenzyme is predominantly present in liver. This product is prepared from human heart.

Uni definition: One unit will catalyze the transamination of one micromole of L-aspartate to alpha-ketoglutarate forming L-glutamate and oxaloacetate per minute at 37°C and pH 7.8. Measured at 340 nm as one equimolar amount of NAD produced by a coupled reaction.

Certification: Human Source material from which this product was derived was found negative for HIV1, HIV2, HCV antibodies, HIV-1 Antigen, HBsAg and Syphilis by current FDA approved methods. Since no test method can offer complete assurance that an infectious agent is absent, all blood products should be treated as potentially infectious. This product is offered for Research, Laboratory or Further Manufacturing Use Only. Final determination of suitability of this product is the sole responsibility of the user.

Glutamate Pyruvate Transaminase (GPT), human

B

L-Alanine : 2-Oxoglutarate
Aminotransferase, Alanin-
Aminotransferase, GPT
[EC 2.6.1.2]

CAS-No.: 9000-86-6
HS-No.: 35079090

Storage: -20°C

lyophilized from 10 mM Tris · HCl, pH
7.0, 100 mM NaCl, 1 mM EDTA, 1 mM
DTE, 10 mM α-Ketoglutarate, 20 mg/L
Pyridoxal-5-phosphate
from human heart

Specification:

Activity (37°C) min. 1 U/mg powder
Protein approx. 0.4 mg pro-
tein/mg

Order-No.	Quantity
A6964,0005	5 U
A6964,0020	20 U

Comment: **Unit Definition:** One unit will catalyze the transamination of one micromole of L-alanine to alpha-ketoglutarate, forming L-glutamate and pyruvate per minute at 37°C and pH 7.8. Measured at 340 nm as one equimolar amount of NAD produced by a coupled reaction.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

L-Glutamic acid

L-2-Aminoglutaric acid

C₅H₉NO₄
M = 147.13 g/mol
CAS-No.: 56-86-0
HS-No.: 29224200
EC-No.: 200-293-7

Storage: RT
LGK: 10 - 13

WGK: nwg

Solubility (25°C) 11 g/L (H₂O)**L-Glutamic acid Cell culture grade**

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
α20°C/D; 10 %, 1 M HCl +30.5° - +32°
pH (0.5 %; H₂O) 3.0 - 3.5

Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.02 %

As max. 0.0001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A3723,0250	250 g
A3723,0500	500 g
A3723,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamic acid BioChemica

B

Specification:

Assay (titr.) min. 99 %
α20°C/D; 10 %, 1 M HCl +30.5° - +32°
Insoluble matter complies
pH (0.5 %; H₂O) 3.0 - 3.5

Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.02 %

A (1 cm/1 M in HCl)
260 nm max. 0.15
280 nm max. 0.15

Order-No.	Quantity
A3712,0250	250 g
A3712,0500	500 g
A3712,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamic acid pure Ph. Eur.

C

Specification:

Assay (titr.) 98.5 - 100.5 %
α20°C/D; 10 %, 1 M HCl +30.5° - +32.5°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on drying max. 0.5 %

Sulfated ash max. 0.1 %
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.03 %
Fe max. 0.001 %

Order-No.	Quantity
A1704,0250	250 g
A1704,0500	500 g
A1704,1000	1 kg
A1704,10006	6 x 1 kg
A1704,5000	5 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamic acid monopotassium salt monohydrate

Potassium L-glutamate monohydrate

$C_5H_8KNO_4 \cdot H_2O$
 $M = 203.24 \text{ g/mol}$
 CAS-No.: 19473-49-5
 HS-No.: 29224200
 EC-No.: 243-094-0

Storage: RT

WGK: 1

L-Glutamic acid monopotassium salt monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Ammonium max. 0.02 %
 Chloride max. 0.01 %

Sulfate max. 0.01 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %

Pb max. 0.0005 %
 Zn max. 0.0005 %

Order-No.
A3881,0100
A3881,0500

Quantity
 100 g
 500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamic acid monopotassium salt monohydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 α 20°C/D; 5 %, 5 M HCl +22° - +24°
 Heavy metals (as Pb) max. 0.05 %
 Sulfated ash max. 0.05 %

Other amino acids max. 0.5 %
 Ammonium max. 0.05 %
 Chloride max. 0.02 %
 As max. 0.0001 %

Fe max. 0.001 %

Order-No.
A1679,0100
A1679,0250
A1679,0500

Quantity
 100 g
 250 g
 500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamic acid sodium salt monohydrate pure

C

Sodium L-glutamate monohydrate, (S)-
 2-Aminopentanedioic acid sodium salt

$C_5H_8NNaO_4 \cdot H_2O$
 $M = 187.13 \text{ g/mol}$
 CAS-No.: 6106-04-3
 HS-No.: 29224200
 EC-No.: 205-538-1

Storage: RT

WGK: 1

Melting point 225 - 240°C

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.002 %
 Loss on drying (100°C) max. 0.5 %
 pH (5 %; H_2O) 6.7 - 7.2
 Chloride max. 0.2 %

As max. 0.0003 %
 Cu max. 0.001 %
 Pb max. 0.0002 %
 Zn max. 0.001 %

Order-No.
A0443,0500
A0443,1000
A0443,10006
A0443,5000

Quantity
 500 g
 1 kg
 6 x 1 kg
 5 kg

◆ All amino acids from AppliChem are of non-animal origin!

Glutamic-oxalacetic transaminase see Glutamate Oxaloacetate Transaminase (GOT), human Page 379
 stable Glutamine see L-Alanyl-L-glutamine Cell culture grade Page 75

L-Glutamine

L-2-Aminoglutaric acid-5-amide

$C_5H_{10}N_2O_3$
 $M = 146.15 \text{ g/mol}$
 CAS-No.: 56-85-9
 HS-No.: 29241900
 EC-No.: 200-292-1

Storage: RT
 LGK: 10 - 13

WGK: nwg

Solubility (40°C) 100 g/L (H_2O)

L-Glutamine Cell culture grade

B

Specification:

Pyrogen test complies
 Assay (titr.) min. 99 %
 α 20°C/D; 10 %, 7 % HCl +31.5° - +33.0°
 Other amino acids max. 0.5 %
 Ammonium max. 0.1 %

Chloride max. 0.02 %
 Sulfate max. 0.02 %
 As max. 0.0001 %
 Fe max. 0.001 %
 Pb max. 0.001 %

Order-No.
A3704,0100
A3704,0250
A3704,0500
A3704,1000

Quantity
 100 g
 250 g
 500 g
 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamine BioChemica

B

Specification:

Assay (titr.) min. 99 %
 α 20°C/D; 10 %, 7 % HCl +31.5° - +33.0°
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 Other amino acids max. 0.5 %

Ammonium max. 0.1 %
 Chloride max. 0.02 %
 Sulfate max. 0.02 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.01
 280 nm max. 0.01

Order-No.
A3734,0100
A3734,0250
A3734,0500
A3734,1000

Quantity
 100 g
 250 g
 500 g
 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Glutamine pure DAB, USP

C

Specification:

Assay (titr.) 99.0 - 101.0 %
 α 20°C/D; 10 %, 2 M HCl +31.5° - +33.0°
 α 20°C/D; 4 %, H₂O +6.3° - +7.3°
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies

Loss on drying max. 0.3 %
 Organic vol. impurities complies
 Residual solvents complies
 Sulfated ash max. 0.1 %
 pH (25 g/L; H₂O) 4.0 - 6.0
 Other amino acids max. 0.5 %

Ammonium max. 0.1 %
 Chloride max. 0.02 %
 Sulfate max. 0.02 %
 Fe max. 0.001 %

Order-No.	Quantity
A1420,0100	100 g
A1420,0250	250 g
A1420,0500	500 g
A1420,1000	1 kg

♦ All amino acids from AppliChem are of non-animal origin!

γ -L-Glutamyl-L-cysteinyl-glycine see L-Glutathione reduced BioChemica Page 383

Glutaraldehyde - Solutions

Glutardialdehyde, Pentane-1,5-dial
 aqueous solution

C₅H₈O₂
 $M = 100.12$ g/mol
 CAS-No.: 111-30-8
 HS-No.: 29121990
 EC-No.: 203-856-5

Storage: 2-8°C
 under argon
 LGK: 6.1 B
 Disposal: 7

Danger
 H317-H334-H331-H314-H400
 P403+P233-P308+P313-
 P305+P351+P338-P273



Density (d 20°C/4°C) .. 1.13 (50 %)
 Melting point -21°C (50 %)

Glutaraldehyde - Solution 50 % EM grade

B

Class / PG: 8(6.1)/II
 UN2922
 WGK: 2

Specification:

Assay (titr.) approx. 50 %

Order-No.	Quantity
A3166,0010	10 ml
A3166,0025	25 ml
A3166,0100	100 ml

Glutaraldehyde - Solution 50 % pure

C

Class / PG: 8(6.1)/II
 UN2922
 WGK: 2

Specification:

Assay (titr.) approx. 50 %

Order-No.	Quantity
A4393,0500	500 ml
A4393,1000	1 L
A4393,10006	6 x 1 L
A4393,2500	2.5 L
A4393,25004	4 x 2.5 L

Glutaraldehyde - Solution 25 % EM grade

B

Class / PG: 6.1(8)/II
 UN2927
 WGK: 2

Specification:

Assay (titr.) approx. 25 %

Order-No.	Quantity
A0589,0010	10 ml
A0589,0025	25 ml
A0589,0100	100 ml
A0589,0250	250 ml

Glutaraldehyde - Solution 25 % pure

C

Class / PG: 6.1(8)/II
 UN2927
 WGK: 2

Specification:

Assay (titr.) approx. 25 %
 Appearance of solution colorless to yellow-
 ish

Order-No.	Quantity
A5252,1000	1 L
A5252,10006	6 x 1 L
A5252,2500	2.5 L
A5252,25004	4 x 2.5 L
A5252,5000	5 L

Glutaraldehyde - Solution 2 % pure

C

Pentane-1,5-dial, Glutardialdehyde
aqueous solution

C₅H₈O₂
M = 100.12 g/mol
CAS-No.: 111-30-8
HS-No.: 38220000
EC-No.: 203-856-5

Storage: 2-8°C
under argon
LGK: 6.1 B
Disposal: 7

WGK: 2
Danger
H315-H334-H317-H318-H332
P305+P351+P338-P280

**Specification:**

Assay (titr.) approx. 2 %

Order-No.	Quantity
A4316,1000	1 L
A4316,10006	6 x 1 L
A4316,2500	2.5 L
A4316,25004	4 x 2.5 L
A4316,5000	5 L

Glutardialdehyde see Glutardialdehyde - Solutions Page 382

L-Glutathione oxidized BioChemica

B

GSSG

C₂₀H₃₂N₆O₁₂S₂
M = 612.64 g/mol
CAS-No.: 27025-41-8
HS-No.: 29309099
EC-No.: 248-170-7

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %
α20°C/D; 2 %, H₂O -96° - -106°
Loss on drying max. 5 %
Solubility (5 %; H₂O) clear, colorless

Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A2243,0001	1 g
A2243,0005	5 g
A2243,0025	25 g

Literature: (1) Meister, A. & Anderson, M.E. (1983) *Ann. Rev. Biochem.* **52**, 711-760

Review: Glutathione.

L-Glutathione reduced BioChemica

B

γ-L-Glutamyl-L-cysteinyl-glycine, GSH

C₁₀H₁₇N₃O₆S
M = 307.33 g/mol
CAS-No.: 70-18-8
HS-No.: 29309099
EC-No.: 200-725-4

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point 182 - 185°C
Solubility (20°C) approx. 100 g/L
(H₂O)

Specification:

Assay min. 97 %
α20°C/D; 2 %, H₂O -16° - -19°
Heavy metals max. 0.0005 %
Solubility (5 %; H₂O) clear, colorless

Order-No.	Quantity
A2084,0005	5 g
A2084,0025	25 g
A2084,0100	100 g

Comment: Solutions of Glutathione reduced are stable for approximately 2 months at -20°C.

Glutathionesulfonic acid BioChemica

B

C₁₀H₁₇N₃O₆S
M = 355.32 g/mol
CAS-No.: 3773-07-7
HS-No.: 29241900

Storage: 2-8°C

WGK: 3

Specification:

Assay (TLC) min. 98 %
¹H-NMR, ¹³C NMR spectrum complies

Solubility (50 mg/ml; H₂O) clear, colorless

Order-No.	Quantity
A7716,0100	100 mg
A7716,9001	1 g

Glycerol anhydrous

from plants (non-animal origin!)

C₃H₈O₃
M = 92.10 g/mol
CAS-No.: 56-81-5
HS-No.: 29054500
EC-No.: 200-289-5

Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1

Density (d 20°C/4°C) .. 1.256 - 1.261
Melting point 18°C
n 20°C/D 1.4740

Glycerol anhydrous Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (HPLC) min. 99.5 %
Organic chlorine max. 0.0005 %
pH (5 M; H₂O) 5.5 - 8.0
Fatty acids max. 0.02 %
Water (K.F.) max. 0.5 %

Chloride max. 0.0001 %
Sulfate max. 0.001 %
As max. 0.0001 %
Fe max. 0.0005 %
Pb max. 0.0001 %

Order-No.	Quantity
A2926,0100	100 ml
A2926,0500	500 ml
A2926,1000	1 L
A2926,10006	6 x 1 L
A2926,2500	2.5 L

Glycerol anhydrous Cell culture grade

B

Specification:

Pyrogen test	 complies	Water (K.F.)	 max. 0.5 %	Fe	 max. 0.0005 %
Assay (HPLC)	 min. 99.5 %	Chloride	 max. 0.0001 %	Pb	 max. 0.0001 %
Organic chlorine	 max. 0.0005 %	Sulfate	 max. 0.001 %		
Fatty acids	 max. 0.02 %	As	 max. 0.0001 %		

Order-No.	Quantity
A3092,0100	100 ml
A3092,0250	250 ml
A3092,0500	500 ml

Glycerol anhydrous BioChemica

B

1,2,3-Propanetriol

Specification:

Assay (titr.)	 min. 99.0 %	A (1 cm/5 M in H ₂ O)	
Heavy metals (as Pb)	 max. 0.0005 %	260 nm	 max. 0.05
Insoluble matter	 complies	280 nm	 max. 0.05
Organic chlorine	 max. 0.0005 %		
pH (5 M; H ₂ O)	 5.5 - 8.0		
Fatty acids	 max. 0.02 %		
Water (K.F.)	 max. 0.5 %		
Chloride	 max. 0.0001 %		
Sulfate	 max. 0.001 %		

Order-No.	Quantity
A1123,0500	500 ml
A1123,1000	1 L
A1123,10006	6 x 1 L
A1123,2500	2.5 L
A1123,25004	4 x 2.5 L
A1123,5000	5 L
A1123,9010	10 L

Literature: (1) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87

Overview about the gel electrophoresis of DNA and RNA with recipes for buffers and solutions.

(2) Miller, H. (1987) *Methods Enzymol.* **152**, 145-170

Preparation of phage- and plasmid-DNA for storage as pure culture.

(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989)

Molecular Cloning: A Laboratory Manual, 2nd Edition. Page 16.32-35 (Glycerol shock); Cold Spring Harbor Laboratory Press. Cold Spring Harbor, New York.

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 9.1.7 (Glycerol shock); Suppl. 36. Greene Publishing & Wiley-Interscience, New York.

(5) Wilson, S.P. & Smith, L.A. (1997) *Anal. Biochem.* **246**, 148-150

Addition of glycerol during DNA incubation increases the transfection efficiency.

Comment: Glycerol is a component of several buffers, media or reagents in biological research. It is supplied as glycerol anhydrous or 87 %, the latter containing 13 % water. Both glycerols are from the same quality, the 87 % glycerol has the advantage of a lower viscosity. Anhydrous glycerol can be pipetted with difficulty only, especially at low temperatures. Glycerol is sterilized by autoclaving (20 minutes, liquid cycle). At concentrations above 5 % it interferes with protein assays and above 40 % at 280 nm, respectively.

After the calcium phosphate transfection of mammalian cells, a glycerol or DMSO shock can be included to improve the transfection efficiency (3, 4). Both substances are toxic for the cells and the time of incubation has to be determined for each cell type. In a further development of the calcium phosphate method it is recommended to add glycerol during the DNA incubation (5). Another application is the purification of bacteriophage λ with glycerol as separation medium (ref. 3, page 2.78).

Freezing and storage of eukaryotic cells: Glycerol may be used instead of DMSO for the freezing of eukaryotic cells. It prevents the formation of ice crystals and prevents damage of the cells. Glycerol is used at a concentration of 10 %. It is highly toxic for the cells! Therefore, the 'freezing medium' should be cooled on ice. The freezing medium is either the 'normal' culture medium with the addition of 10% glycerol or 90 % serum plus 10 % glycerol, which increases the viability. Most of the cell types are not directly transferred to the liquid nitrogen. They have to be cooled down slowly (refrigerator, -70°C freezer well packed, liquid nitrogen). Thawing of cells has to be done as quick as possible. It is recommended to wash the cells once with medium before plating or change the medium two days after thawing.

Freezing and storage of bacteria (2): Depending on the technique, glycerol is used at a concentration ranging from 15 - 50 %. Method I: 0.15 volume of sterile glycerol is added to 0.85 volume of liquid culture (e. g. in LB medium). The mixture is frozen in an ethanol/dry ice bath or liquid nitrogen. Store the frozen stock at -70°C. Method II: One colony is removed from an agar plate or the pelett of an over night culture is thoroughly mixed with TM buffer (10 mM Tris · HCl (pH 7.4), 10 mM MgSO₄, 50 % glycerol) and frozen as described above. For recultivation of bacteria do not thaw the complete vial. It is sufficient to scratch with a steril tooth pick over the surface of the frozen stock to inoculate culture medium.

Glycerol anhydrous p. A.

C

Specification:

Assay (HPLC)	 min. 99.5 %
Organic chlorides	 max. 0.0005 %
Fatty acids	 max. 0.02 %
Water (K.F.)	 max. 0.5 %
Chloride	 max. 0.0001 %
Sulfate	 max. 0.001 %
As	 max. 0.0001 %
Fe	 max. 0.0005 %
Pb	 max. 0.0001 %

Order-No.	Quantity
A3552,0100	100 ml
A3552,0500	500 ml
A3552,1000	1 L
A3552,10006	6 x 1 L
A3552,2500	2.5 L
A3552,25004	4 x 2.5 L
A3552,5000	5 L
A3552,9010	10 L
A3552,9025	25 L

Glycerol anhydrous pure Ph. Eur., USP

C

Specification:

Assay (titr.)	 99.0 - 101.0 %	Carbohydrates	 complies
Acidic/alk. react. subst.	 complies	Fatty acids and ester	 complies
Aldehydes	 max. 0.001 %	Halogen compounds	 max. 0.003 %
Appearance of solution	 complies	Water (K.F.)	 max. 2.0 %
Density (d 20°C/4°C)	 min. 1.249	Chloride	 max. 0.001 %
Heavy metals (as Pb)	 max. 0.0005 %	Diethylene glycol & rel. subst.	 complies
Identity	 complies	Sulfate	 max. 0.002 %
Organic vol. impurities	 complies		
Refractive index	 1.470 - 1.475		
Sulfated ash	 max. 0.01 %		

Order-No.	Quantity
A2364,0500	500 ml
A2364,1000	1 L
A2364,10006	6 x 1 L
A2364,2500	2.5 L
A2364,25004	4 x 2.5 L
A2364,5000	5 L
A2364,9010	10 L
A2364,9025	25 L

Glycerol 99 % for synthesis

C

Specification:

Assay (HPLC)	 min. 99 %
Organic chlorides	 max. 0.05 %
Fatty acids	 max. 0.05 %
Water (K.F.)	 max. 0.5 %
Chloride	 max. 0.01 %
As	 max. 0.05 %
Fe	 max. 0.05 %
Pb	 max. 0.01 %

Order-No.	Quantity
A4443,1000	1 L
A4443,10006	6 x 1 L
A4443,2500	2.5 L
A4443,25004	4 x 2.5 L
A4443,5000	5 L
A4443,9010	10 L
A4443,9025	25 L

Glycerol 99 % Technical grade

C

Specification:

Assay (HPLC) min. 99 %
 Water (K.F.) max. 0.5 %

Order-No.	Quantity
A2957,5000	5 L
A2957,9010	10 L
A2957,9025	25 L

Glycerol 87 %*from plants (non-animal origin!)*

$C_3H_8O_3$
 $M = 92.10$ g/mol
 CAS-No.: 56-81-5
 HS-No.: 29054500
 EC-No.: 200-289-5

Storage: RT
 LGK: 10 - 13
 Disposal: 1

WGK: 1

Density (d 20°C/4°C) .. 1.221 - 1.231
 Melting point -10°C
 n 20°C/D 1.4490 - 1.4550

Glycerol 87 % Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable Pb max. 0.0001 %
 Assay (titr.) 86.0 - 88.0 %
 Aldehyde max. 0.05 %
 Water (K.F.) approx. 13 %
 Chloride max. 0.0001 %
 Fe max. 0.0005 %

Order-No.	Quantity
A3739,0100	100 ml
A3739,0500	500 ml
A3739,1000	1 L
A3739,10006	6 x 1 L
A3739,2500	2.5 L

Glycerol 87 % BioChemica

B

Specification:

Assay (titr.) 85.0 - 88.0 %
 Heavy metals (as Pb) max. 0.0001 %
 Insoluble matter complies
 Aldehyde max. 0.05 %
 Water (K.F.) approx. 13 %
 Chloride max. 0.0001 %

Order-No.	Quantity
A0970,0500	500 ml
A0970,1000	1 L
A0970,10006	6 x 1 L
A0970,2500	2.5 L
A0970,5000	5 L

Comment: Literature and comment see Glycerol anhydrous**Glycerol 87 % p. A.**

C

Specification:

Assay (titr.) 86.0 - 88.0 %
 Aldehydes max. 0.001 %
 Water (K.F.) ca. 14 %
 Chloride max. 0.0001 %
 Sulfate max. 0.0005 %
 Fe max. 0.0005 %
 Pb max. 0.0001 %

Order-No.	Quantity
A3561,0500	500 ml
A3561,1000	1 L
A3561,10006	6 x 1 L
A3561,2500	2.5 L
A3561,25004	4 x 2.5 L
A3561,5000	5 L
A3561,9010	10 L
A3561,9025	25 L

Glycerol 87 % pure Ph. Eur.

C

*1,2,3-Propantriol***Specification:**

Assay (titr.) 83.5 - 88.5 %
 Acidic/alkaline react. subst. complies
 Aldehydes max. 0.001 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.0005 %
 Identity complies
 Refractive index 1.449 - 1.455
 Sulfated ash max. 0.01 %
 Ester complies

Halogen compounds max. 0.003 %
 Sugar complies
 Water (K.F.) 12.0 - 16.0 %
 Chloride max. 0.001 %
 Diethylene glycol & rel. subst. complies

Order-No.	Quantity
A0567,0500	500 ml
A0567,1000	1 L
A0567,10006	6 x 1 L
A0567,2500	2.5 L
A0567,25004	4 x 2.5 L
A0567,5000	5 L
A0567,9010	10 L

Glycerol 87 % for synthesis

C

Specification:

Assay (titr.) 86 - 88 %
 Refractive index (n_{20°C/D}) .. 1.447 - 1.458

Order-No.	Quantity
A7013,2500	2.5 L
A7013,25004	4 x 2.5 L
A7013,5000	5 L
A7013,9010	10 L

Glycerol 87 % Technical grade

C

Specification:

Assay (titr.) 86 - 88 %

Order-No.	Quantity
A2796,5000	5 L
A2796,9010	10 L
A2796,9025	25 L

Glycerol 50 % / Methyl green 0.6 %

C

aqueous solution

HS-No.: 29054500

Storage: RT
LGK: 10 - 13
Disposal: 3**Composition:**Glycerol anhydrous 500 g/L
Methyl green 6 g/L

Order-No.	Quantity
A3498,0100	100 ml
A3498,0500	500 ml

rac-Glycerol 1-monooleate see rac.-1-Oleoyl-glycerol *BioChemica* Page 584Glycerol-2-phosphate disodium salt hydrate see β -Glycerol phosphate disodium salt hydrate *BioChemica* Page 386**DL- α -Glycerol phosphate magnesium salt hydrate pure**

B

Glycero-3-phosphate magnesium
salt/Magnesium glycerophosphateC₃H₇MgO₆P · xH₂O
M = 194.36 g/mol · xH₂O
CAS-No.: 927-20-8
HS-No.: 29199000
EC-No.: 213-149-3

Storage: RT

Specification:Assay (titr.) approx. 85 %
Heavy metals (as Pb) max. 0.001 %
Residue on ignition (800°C) 47 - 52 %

As max. 0.0003 %

Order-No.	Quantity
A4558,0250	250 g
A4558,1000	1 kg

 β -Glycerol phosphate disodium salt hydrate *BioChemica*

B

Glycerol-2-phosphate disodium salt
hydrate, Disodium glycerol-2-phosphate
hydrateC₃H₇Na₂O₆P · xH₂O
M = 216.04 g/mol · xH₂O
CAS-No.: 819-83-0
HS-No.: 29199000
EC-No.: 212-464-3Storage: 2-8°C
LGK: 10 - 13
Disposal: 3**Specification:**Assay (total) min. 99 %
Heavy metals max. 0.002 %
Solubility (5 %; H₂O) clear, colorless
 α -Glycerophosphate max. 2 %Loss on drying 26 - 33 %
Chloride max. 0.01 %
Free phosphate max. 0.01 %
Sulfate max. 0.01 %As max. 0.0005 %
Ca max. 0.005 %

Order-No.	Quantity
A2253,0100	100 g
A2253,0500	500 g

Literature: (1) Heppel, L.A. (1955) *Methods Enzymol.* 2, 530-533

Intestinal Phosphomonoesterases.

Comment: β -Glycerophosphate is a substrate for phosphatases (1). It is commonly added in a concentration ranging from 10 to 80 mM to lysis buffers, if phosphoproteins are isolated from cells (concentration 50 mM, pH 7.2 or 7.3).**Glyceryl triacetate**

C

Glycerol triacetate, Triacetin

C₉H₁₄O₆
M = 218.23 g/mol
CAS-No.: 102-76-1
HS-No.: 29153900
EC-No.: 203-051-9Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1

Specification:Assay (HPLC) min. 97 %
Density (d 20°C/4°C) 1.150 - 1.160
Refractive index 1.430 - 1.433
Water (K.F.) max. 0.1 %

Order-No.	Quantity
A4683,1000	1 L
A4683,10006	6 x 1 L
A4683,5000	5 L

Glycerol triacetate see Glycerol triacetate Page 386

Glyceryl tributyrate see Tributyrin *BioChemica* Page 828**Glycine**

Aminoacetic acid, Glycocoll

C₂H₅NO₂
M = 75.07 g/mol
CAS-No.: 56-40-6
HS-No.: 29224985
EC-No.: 200-272-2Storage: RT
LGK: 10 - 13

WGK: nwg

Melting point 232°C (dec.)
Solubility (25°C) 225 g/L (H₂O)**Glycine Molecular biology grade**

B

Specification:DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
Loss on drying max. 0.1 %
pH (5 %; H₂O) 5.9 - 6.4
Other amino acids max. 0.1 %
Ammonium max. 0.02 %Chloride max. 0.004 %
Sulfate max. 0.005 %
As max. 0.0001 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A1067,0500	500 g
A1067,1000	1 kg
A1067,10006	6 x 1 kg
A1067,5000	5 kg
A1067,9010	10 kg

♦ All amino acids from AppliChem are of non-animal origin!

Glycine Cell culture grade

B

Specification:

Pyrogen test	complies	Ammonium	max. 0.02 %	Fe	max. 0.001 %
Assay (titr.)	min. 99.8 %	Chloride	max. 0.004 %	Pb	max. 0.001 %
Loss on drying	max. 0.1 %	Sulfate	max. 0.005 %		
Other amino acids	max. 0.1 %	As	max. 0.0001 %		

Order-No.	Quantity
A3741,0500	500 g
A3741,1000	1 kg
A3741,5000	5 kg

◆ All amino acids from AppliChem are of non-animal origin!

Glycine BioChemica

B

Specification:

Assay (titr.)	min. 99.5 %	Chloride	max. 0.005 %	A (1 cm/1 M in 1 M HCl)	
Heavy metals (as Pb)	max. 0.001 %	Sulfate	max. 0.005 %	260 nm	max. 0.02
Insoluble matter	complies			280 nm	max. 0.02
Loss on drying	max. 0.1 % (110°C)				
Other amino acids	max. 0.1 %				
Ammonium	max. 0.02 %				

Order-No.	Quantity
A3707,0500	500 g
A3707,1000	1 kg
A3707,10006	6 x 1 kg
A3707,5000	5 kg
A3707,9010	10 kg

◆ All amino acids from AppliChem are of non-animal origin!

Literature: (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685
(2) Jagus, R. (1987) *Methods Enzymol.* **152**, 296-304

Cleavage of structural proteins during the assembly of the head of Bacteriophage T4.
Characterization of *in vitro* translation products.

Comment: One of the most commonly used buffer in the polyacrylamide gel electrophoresis for proteins is based on the work of Laemmli (1). The electrode buffer (pH 8.3) consists of 0.1 % SDS, 0.025 M Tris and 0.192 M Glycine. Many variations exist, e. g. 0.250 M Glycine instead of 0.192 M (2).

Glycine p. A.

C

Specification:

Assay (titr.)	min. 99.5 %	Fe	max. 0.0005 %
Loss on drying (110°C)	max. 0.1 %	Pb	max. 0.0005 %
Other amino acids	max. 0.1 %		
Ammonium	max. 0.02 %		
Chloride	max. 0.005 %		
Sulfate	max. 0.005 %		
As	max. 0.0001 %		

Order-No.	Quantity
A1377,0500	500 g
A1377,1000	1 kg
A1377,10006	6 x 1 kg
A1377,5000	5 kg
A1377,9010	10 kg
A1377,9025	25 kg

◆ All amino acids from AppliChem are of non-animal origin!

Glycine pure Ph. Eur., USP

C

Specification:

Assay (titr.)	98.5 - 101.0 %	Sulfated ash	max. 0.1 %
Appearance of solution	complies	pH (5 %; H ₂ O)	6.9 - 6.4
Heavy metals (as Pb)	max. 0.001 %	Chloride	max. 0.007 %
Hydrolysable substances	complies	Sulfate	max. 0.0065 %
Identity	complies		
Loss on drying	max. 0.2 %		
Organic vol. impurities	complies		

Order-No.	Quantity
A4554,0500	500 g
A4554,1000	1 kg
A4554,10006	6 x 1 kg
A4554,5000	5 kg
A4554,9010	10 kg
A4554,9025	25 kg

◆ All amino acids from AppliChem are of non-animal origin!

Glycine for synthesis

C

Specification:

Assay (titr.)	min. 98 %	Sulfate	max. 0.05 %
Heavy metals (as Pb)	max. 0.01 %		
Other amino acids	max. 0.5 %		
Ammonium	max. 0.1 %		
Chloride	max. 0.05 %		

Order-No.	Quantity
A4444,1000	1 kg
A4444,10006	6 x 1 kg
A4444,5000	5 kg
A4444,9010	10 kg

◆ All amino acids from AppliChem are of non-animal origin!

Glycocholic acid sodium salt see Sodium glycocholate *BioChemica* Page 734

Glycocoli see Glycine Page 386

Glycol see Ethylene glycol Page 341

Glycol ethylether see 1,4-Dioxane Page 289

Glycolic acid - Solutions

Hydroxyacetic acid - Solution

CAS-No.: 79-14-1
HS-No.: 29181998
EC-No.: 201-180-5

Storage: RT
LGK: 8 B
Disposal: 4

Class / PG: 8/III
UN3265
Danger
H302-H314
P280-P305+P351+P338-
P301+P330+P331



Glycolic acid - Solution 70 % for synthesis

C

Specification:

Assay (titr.)	min. 70 %
Heavy metals (as Pb)	max. 0.001 %
Sulfate	max. 0.05 %

Order-No.	Quantity
A3543,1000	1 L
A3543,10006	6 x 1 L
A3543,2500	2.5 L
A3543,25004	4 x 2.5 L
A3543,5000	5 L

Glycolic acid - Solution 57 % for synthesis

C

Specification:

Assay (titr.)	min. 57 %
Heavy metals (as Pb)	max. 0.001 %
Sulfate	max. 0.005 %

Order-No.	Quantity
A3600,1000	1 L
A3600,2500	2.5 L

α -D-Glycopyranose 1-phosphate see α -D-Glucose 1-phosphate disodium salt hydrate *BioChemica* Page 378

Glycylglycine

Melting range 220 - 240°C

C₄H₈N₂O₃
M = 132.12 g/mol
CAS-No.: 556-50-3
HS-No.: 29241900
EC-No.: 209-127-8

Storage: RT
LGK: 10 - 13

WGK: 1

Glycylglycine Cell culture grade

B

Specification:

Pyrogen test	complies	Loss on drying	max. 0.5 %
Assay (titr.)	min. 99.5 %	pH (1 %; H ₂ O)	5.5 - 5.9
Heavy metals (as Pb)	max. 0.001 %	Chloride	max. 0.005 %

Order-No.	Quantity
A4753,0100	100 g
A4753,0250	250 g

Glycylglycine Buffer grade

B

Specification:

Assay (titr.)	min. 99.5 %	A (1 cm/10 % in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %	260 nm	max. 0.2
Loss on drying	max. 0.5 %	280 nm	max. 0.1
pH (1 %; H ₂ O)	5.5 - 5.9	405 nm	max. 0.02
Chloride	max. 0.0025 %		

Order-No.	Quantity
A1068,0100	100 g
A1068,0250	250 g
A1068,0500	500 g

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
(2) Janknecht, R. *et al.* (1995) *Oncogene* **10**, 1209-1216

Hydrogen ion buffers for biological research.
SAP1a is a nuclear target of signaling cascades involving ERKs.

Comment: The assay buffer for the determination of the luciferase activity is made of 25 mM Glycylglycine, 15 mM MgSO₄, 5 mM ATP (2). It is set up without ATP, autoclaved and stored at room temperature. Add ATP from a 100 mM stock solution (stored at -20°C) just before use. See also the comment ATP (A1348).

Glycylglycine hydrochloride Buffer grade

B

Diglycine hydrochloride

C₄H₈N₂O₃ · HCl
M = 168.60 g/mol
CAS-No.: 23273-91-8
HS-No.: 29241900

Storage: RT
LGK: 10 - 13

Melting point 142 - 144°C

Specification:

Assay (titr., anhydr. subst.)	min. 99.0 %
Water (K.F.)	approx. 10 %

Order-No.	Quantity
A1137,0100	100 g
A1137,0250	250 g

Gly-Gly see Glycylglycine Page 388

Glyoxal - Solution 40 % Molecular biology grade

B

Ethanedial, Oxalaldehyde

C₂H₂O₂
M = 58.04 g/mol
CAS-No.: 107-22-2
HS-No.: 29121990
EC-No.: 203-474-9

Storage: 2-8°C
LGK: 10 - 13
Disposal: 7

WGK: 1
Warning
H319-H317-H315-H341-H332
P342+P311-P302+P352-P280



Specification:

DNases/RNases/Proteases	not detectable	Fe	max. 0.001 %
Assay (titr.)	approx. 40 %	Pb	max. 0.001 %
Chloride	max. 0.01 %		
Sulfate	max. 0.01 %		

Order-No.	Quantity
A2169,0025	25 ml
A2169,0050	50 ml
A2169,0100	100 ml

Literature: (1) McMaster, G. & Carmichael, G. (1977) *Proc. Natl. Acad. Sci. USA* **74**, 4835-4838 Analysis of single and double stranded nucleic acids.
(2) Thomas, P.S. (1980) *Proc. Natl. Acad. Sci. USA* **77**, 5201-5205 Hybridisation of denatured RNA and small DNA fragments on nitrocellulose.
(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Cold Spring Harbor Laboratory Press. Cold Spring Harbor, NY.

Glyoxalin see Imidazole Page 445

Glyoxylic acid diureide see Allantoin *BioChemica* Page 81

Glyoxylic acid sodium salt monohydrate see Sodium glyoxylate monohydrate *BioChemica* Page 734

GMBS

B

N-(γ -Maleimidobutyryloxy) succinimide ester

$C_{12}H_{12}N_2O_6$
 $M = 280.20$ g/mol
CAS-No.: 80307-12-6
HS-No.: 29280090

Storage: 2-8°C

Melting point 123 - 125°C

Specification:

Assay min. 98 %
Identity (NMR) complies

Order-No.	Quantity
A7819,0025	25 mg
A7819,0050	50 mg
A7819,0100	100 mg

Comment: GMBS is a non-cleavable, water-insoluble, aliphatic heterobifunctional reagent with a spacer arm longer than BMPS. It reacts toward sulfhydryl and primary amine groups. The NHS ester reacts with primary amines at pH 7 - 9, while maleimide reacts with thiols at pH 6.5 - 7.5.

recombinant Mouse GM-CSF see rM GM-CSF Page 389

rHu GM-CSF



B

recombinant Human Granulocyte Macrophage Colony Stimulating Factor lyophilized after extensive dialysis against 2 mM sodium phosphate buffer pH 7.4±0.1 from *E. coli*

$M = 17.48$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8341,0002	2 µg
A8341,0010	10 µg
A8341,0100	100 µg

Comment: Granulocyte Macrophage Colony Stimulating Factor is produced in response to a number of inflammatory mediators by mesenchymal cells present in the hemopoietic environment and at peripheral sites of inflammation. Granulocyte Macrophage-CSF is able to stimulate the production of neutrophilic granulocytes, macrophages, and mixed granulocyte-macrophage colonies from bone marrow cells and can stimulate the formation of eosinophil colonies from fetal liver progenitor cells. GM-CSF can also stimulate some functional activities in mature granulocytes and macrophages. GM-CSF receptor shows significant homologies with other receptors for hematopoietic growth factors, including IL2-beta, IL-3, IL-6, IL-7, EPO and the Prolactin receptors. Recombinant Human Granulocyte Macrophage CSF produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 127 amino acids and having a molecular mass of 14.48 kDa.

rM GM-CSF bioconfident grade



B

Sterile filtered through a 0.2 µm filter. Lyophilized from PBS, pH 7.2. from *Hordeum vulgare*

$M = 16.2$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin max. 0.05 EU/µg
Pyrogen test complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8930,0010	10 µg
A8930,0050	50 µg
A8930,0100	100 µg
A8930,1000	1 mg

Comment: Recombinant mouse GM-CSF contains 124 amino acids and a 16 amino acid histidine-based tag for a total length of 140 amino acids and has a predicted molecular mass of 16.2 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 17 - 22 kDa in SDS-PAGE.

rM GM-CSF



B

recombinant Mouse Granulocyte Macrophage-Colony Stimulating Factor, recombinant Mouse GM-CSF lyophilized from 10 mM acetic acid from *E. coli*

$M = 14.29$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8233,0002	2 µg
A8233,0010	10 µg
A8233,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Mouse GM-CSF is produced in response to a number of inflammatory mediators by mesenchymal cells present in the hemopoietic environment and at peripheral sites of inflammation. GM-CSF is able to stimulate the production of neutrophilic granulocytes, macrophages, and mixed granulocyte-macrophage colonies from bone marrow cells and can stimulate the formation of eosinophil colonies from fetal liver progenitor cells. GM-CSF can also stimulate some functional activities in mature granulocytes and macrophages. GM-CSF receptors show significant homologies with other receptors for hematopoietic growth factors, including IL2-β, IL-3, IL-6, IL-7, EPO and the Prolactin receptors. Recombinant murine GM-CSF is a single, non-glycosylated, polypeptide chain containing 125 amino acids.

GMP disodium salt see Guanosine 5'-monophosphoric acid disodium salt *BioChemica* Page 394

Gold(III) chloride trihydrate see Tetrachlorauric(III) acid trihydrate Page 804

Gold Orange see Methyl orange (C.I. 13025) Page 540

Gossypetin-8-glucoside see Gossypin HPLC grade Page 390

Gossypin HPLC grade

B

Gossypetin-8-glucoside
from *Hibiscus vitifolius*

C₂₁H₂₀O₁₃
M = 480.38 g/mol
CAS-No.: 652-78-8
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Warning
H319-H335-H315
P305+P351+P338-P280



Specification:

Assay min. 99 %

Order-No.	Quantity
A3431,0010	10 mg
A3431,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

GOT see Glutamate Oxaloacetate Transaminase (GOT), human Page 379
GPT see Glutamate Pyruvate Transaminase (GPT), human Page 380

Grace's - Insect medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Grace's - Insect medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A2023,1000	1 L
A2023,5000	5 L
A2023,9010	10 L
A2023,9050	50 L

Grace's - Insect medium

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1529,1000	1 L
A1529,5000	5 L
A1529,9010	10 L
A1529,9050	50 L

Gramicidin

B

Mixture of Gramicidin A, B, C and D

CAS-No.: 1405-97-6
HS-No.: 29419000
EC-No.: 215-790-4

Storage: RT

Specification:

Assay min. 95 % (Mixture
of isomeres) Loss on drying max. 1 %
Ash max. 0.1 %

Order-No.	Quantity
A2170,0250	250 mg
A2170,0500	500 mg

Literature: (1) Bakker, E.P. (1975) Ionophore Antibiotics in *Antibiotics* Vol. III, p. 67-97; (J.W. Corcoran & F.E. Hahn eds.) Springer-Verlag.

recombinant Human Granulocyte Colony Stimulating Factor see rHu G-CSF Page 369
recombinant Mouse Granulocyte-Colony Stimulating Factor see rM G-CSF Page 369
recombinant Human Granulocyte Macrophage Colony Stimulating Factor see rHu GM-CSF Page 389
recombinant Mouse Granulocyte Macrophage-Colony Stimulating Factor see rM GM-CSF Page 389

Griess-Ilosvay's Nitrite Reagent



C

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/III
UN2790
P280-P305+P351+P338

Order-No.	Quantity
A8091,0100	100 ml
A8091,0250	250 ml

Comment: GRIESS-ILOSVAY's reagent reacts with nitrite to form a red diazo dye. The intensity of the colour is proportional to the quantity of nitrite formed. In case of microorganisms which produce large amounts of nitrite, the initial red coloration changes to yellow.

recombinant Human GRO-β see rHu GRO-β Page 391

rHu GRO-β

B

GRO-beta, recombinant Human GRO-β
lyophilized without additives
from *E. coli*

M = 7.91 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8289,0002	2 µg
A8289,0010	10 µg
A8289,0100	100 µg

Comment: Three human MGSA/GRO genes encode 3 highly related chemokines, MGSA/GRO α, -β and -γ. All 3 MGSA/GRO proteins bind to the same receptors, but with differing affinities, and stimulate a number of biological responses including chemotaxis, angiogenesis, and growth regulation. Recombinant Human GRO-beta produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 73 amino acids and having a molecular mass of 7.91 kDa.

GRO-beta see rHu GRO-β Page 391

AC-GROW hi (50X)

B

HS-No.: 38220000

Storage: -20°C

Specification:

Cell Culture complies
Sterility complies

Order-No.	Quantity
A8325,0002	2 ml
A8325,0010	10 ml
A8325,0020	20 ml
A8325,0100	100 ml

Comment: In addition to our line of ready-to-use serum-free media products, we have developed AC-GROW hi (50X) Concentrate and AC-GROW lo (50X) Concentrate (A8330) for those customers who prefer to prepare final media on their own. The AC-GROW hi (50X) Concentrate contains serum albumin.

Applications include:

- Culture of murine myeloma cells (NS-1, NS-0/1, SP2)
- Culture of mouse-mouse hybridoma cells (from NS-1, NS-0/1, SP2, X63-Aag8-653, BW-S147)
- Culture of rat-mouse, rat-rat, and human-human hybridomas
- Monoclonal antibody production
- Culture of other human, murine and avian lymphocytes
- Viral production (such as HEV virus from Turkey B-lymphoblastoid cell lines)
- Culture of various anchorage-dependent cells (such as human osteosarcoma, human epithelial, and thyroid cells)
- Maintenance of most anchorage-dependent cells during long production periods

Method of use: The AC-GROW hi (50X) Concentrate is a 50 fold concentrate and therefore is recommended for use at a concentration of 2 % (although in some cases 1 % may be sufficient). DMEM : F-12 (1:1) has found to be most generally effective as the basal media, but many cell lines grow well with RPMI, DMEM or Iscove's. Glutamine and antibiotics should be added to the final formulation.

AC-GROW lo (50X)

B

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice

Specification:

Cell Culture complies
Sterility complies
pH 7.5 - 7.7

Order-No.	Quantity
A8330,0002	2 ml
A8330,0010	10 ml
A8330,0020	20 ml
A8330,0100	100 ml

Comment: In addition to our line of ready-to-use serum-free media products, we have developed AC-GROW lo (50X) Concentrate and AC-GROW hi (50X) Concentrate (A8325) for those customers who prefer to prepare final media on their own. The AC-GROW lo (50X) formulation is totally free of serum albumin, and the concentration of total protein is therefore less than 18 µg per ml in the final media.

Applications include:

- Culture of murine myeloma cells (NS-1, NS-0/1, SP2)
- Culture of mouse-mouse hybridoma cells (from NS-1, NS-0/1, SP2, X63-Aag8-653, BW-S147)
- Culture of rat-mouse, rat-rat, and human-human hybridomas
- Monoclonal antibody production
- Culture of other human, murine and avian lymphocytes
- Viral production (such as HEV virus from Turkey B-lymphoblastoid cell lines)
- Culture of various anchorage-dependent cells (such as human osteosarcoma, human epithelial, and thyroid cells)
- Maintenance of most anchorage-dependent cells during long production periods

Method of use: The AC-GROW lo (50X) Concentrate is a 50 fold concentrate and therefore is recommended for use at a concentration of 2 % (although in some cases 1 % may be sufficient). DMEM : F-12 (1:1) has found to be most generally effective as the basal media, but many cell lines grow well with RPMI, DMEM or Iscove's. Glutamine and antibiotics should be added to the final formulation.

recombinant Human Growth and Differentiation Factor-5 see rHu GDF-5 Page 369

Growth Differentiation Factor-8 see rHu Myostatin Page 555

Growth Factor Mixture (Supplement) see Supplements for Microbiological Media Page 786

GSH see L-Glutathione reduced *BioChemica* Page 383

GSSG see L-Glutathione oxidized *BioChemica* Page 383

GTP disodium salt see Guanosine 5'-triphosphoric acid disodium salt *BioChemica* Page 394

GuaHCl see Guanidine hydrochloride Page 392

Guanidine hydrochloride

Melting point 183 - 188°C
Solubility (20°C) 2000 g/L (H₂O)

CH₅N₃ · HCl
M = 95.53 g/mol
CAS-No.: 50-01-1
HS-No.: 29252900
EC-No.: 200-002-3

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H319-H315-H302
P302+P352-P305+P351+P338



Guanidine hydrochloride Molecular biology grade

B

GuaHCl, Guanidinium chloride

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
pH (6 M; H₂O; 25°C) 4.5 - 6.0
Dicyandiamide max. 0.05 %
Melamine max. 0.01 %

Loss on drying max. 0.5 %
Ammonium max. 0.05 %
Sulfate max. 0.005 %
Cu max. 0.0001 %
Fe max. 0.0001 %

Pb max. 0.0001 %

Order-No.	Quantity
A1106,0100	100 g
A1106,0250	250 g
A1106,0500	500 g
A1106,1000	1 kg

Guanidine hydrochloride ultrapure

B

Specification:

Assay (titr.) min. 99.5 %
pH (6 M; H₂O) 4.5 - 6.0 (25°C)
Dicyandiamide max. 0.05 %
Melamine max. 0.01 %
Loss on drying max. 0.5 %

Ammonium max. 0.05 %
Sulfate max. 0.005 %
Cu max. 0.0001 %
Fe max. 0.0001 %
Pb max. 0.0001 %

Order-No.	Quantity
A3240,0250	250 g
A3240,0500	500 g
A3240,1000	1 kg
A3240,5000	5 kg

Guanidine hydrochloride BioChemica

B

Specification:

Assay (titr.) min. 99 %
Insoluble matter complies
pH (5 %; H₂O; 25°C) 4.0 - 6.0
Loss on drying max. 0.5 %
Ammonium max. 0.05 %

Fe max. 0.0005 %
Pb max. 0.0005 %

A (1 cm/50 % in water HPLC grade)
260 nm max. 0.1
280 nm max. 0.05

Order-No.	Quantity
A1499,0250	250 g
A1499,0500	500 g
A1499,1000	1 kg
A1499,10006	6 x 1 kg

Literature: (1) MacDonald, R.J. et al. (1987) *Methods Enzymol.* **152**, 219-227
(2) Cockle, S.A. et al. (1978) *J. Biol. Chem.* **253**, 8019-8026

Isolation of RNA using guanidinium salts.
Resistance of lipophilin, a hydrophobic myelin protein, to denaturation by urea and guanidinium salts.

Comment: Guanidine hydrochloride denatures proteins and inhibits nucleases. It is applied at high concentrations for the isolation of non-degraded RNA (e. g. stock solution 7.5 M; ref. 1). β-Mercaptoethanol or DTT increase the denaturing activity of guanidine hydrochloride, since they break intramolecular disulfide bonds. Guanidine thiocyanate acts even stronger than guanidine hydrochloride as a denaturant and is used for 'valuable' samples/assays. Strongly hydrophobic proteins, like the membrane protein lipophilin will not be denatured by guanidine hydrochloride (2).

Guanidine hydrochloride pure

C

Specification:

Assay min. 98 %
pH (5 %; H₂O) 3.5 - 6.5 (20°C)
Water (K.F.) max. 1 %
Ammonium max. 0.1 %
Fe max. 0.005 %
Pb max. 0.01 %

Order-No.	Quantity
A4014,1000	1 kg
A4014,10006	6 x 1 kg
A4014,5000	5 kg
A4014,9010	10 kg
A4014,9025	25 kg

Guanidine hydrochloride pure (with anti-caking-agent)

C

Specification:

Assay (titr.) min. 97 %
pH (5 %; H₂O) 3.5 - 6.5 (20°C)
Water (K.F.) max. 2 %
Ammonium max. 0.1 %
Fe max. 0.005 %

Pb max. 0.005 %

Order-No.	Quantity
A4478,1000	1 kg
A4478,5000	5 kg
A4478,9010	10 kg
A4478,9025	25 kg

Guanidine hydrochloride - Solutions

HS-No.: 29252900

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H302-H319-H315
P302+P352-P305+P351+P338



Guanidine hydrochloride - Solution (8 M) BioChemica

B

Composition:

GuaHCl (A1499) 764.24 g/L

Specification:

pH (20°C) 5.0 - 6.0

A (1 cm/8 M in H₂O)
280 nm max. 0.25

Order-No.	Quantity
A0860,0100	100 ml
A0860,0250	250 ml
A0860,0500	500 ml

Guanidine hydrochloride - Solution (4 M) BioChemica

B

Composition:

GuaHCl (A1499) 382.12 g/L

Specification:

pH (20°C) 5.0 - 6.0

A (1 cm/4 M in H₂O)
280 nm max. 0.25

Order-No.	Quantity
A2608,0100	100 ml
A2608,0250	250 ml
A2608,0500	500 ml

Guanidine isothiocyanate see Guanidine thiocyanate Page 393
Guanidine rhodanide see Guanidine thiocyanate Page 393

Guanidine thiocyanate

Guanidine isothiocyanate, *GuaSCN*,
Guanidine rhodanide

$C_2H_6N_4S$
 $M = 118.16 \text{ g/mol}$
CAS-No.: 593-84-0
HS-No.: 29252900
EC-No.: 209-812-1

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 2
Warning
EUH032-H312-H302-H412-H332
P302+P352-P273



Melting point 118 - 121°C
Solubility (20°C) 1420 g/L (H₂O)

Guanidine thiocyanate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr) min. 99 %
pH (1 M) 4.7 - 7.0
Loss on drying max. 0.3 %
Ammonium max. 0.1 %

Fe max. 0.0001 %

A (1 cm/6 M in water HPLC grade)
280 nm max. 0.6
300 nm max. 0.1

Order-No.	Quantity
A1107,0100	100 g
A1107,0250	250 g
A1107,0500	500 g
A1107,1000	1 kg

Literature: (1) Chirgwin, J.M. et al. (1979) *Biochemistry* **18**, 5294-5299227
(2) MacDonald, R.J. et al. (1987) *Methods Enzymol.* **152**, 219-227
(3) Lizardi, P.M. (1983) *Methods Enzymol.* **96**, 24-38
(4) Chomczynski, P. & Sacchi, N. (1987) *Anal. Biochem.* **162**, 156-159

(5) Goda, S.K. & Minton, N.P. (1995) *Nucleic Acids. Res.* **23**, 3357-3358

Isolation of biologically active ribonucleic acid from sources enriched in ribonuclease.
Isolation of RNA using guanidinium salts.
Methods of the preparation of messenger RNA.
Single-step method of RNA isolation by acid guanidinium thiocyanate-phenol-chloroform extraction.
A simple procedure for gel electrophoresis and Northern blotting of RNA.

Comment: Reference (1) describes the original protocol for the guanidine thiocyanate (GuaSCN) / β -mercaptoethanol method for the isolation of non-degraded RNA from RNase-rich tissues (e. g. pancreas). There are many variations from this method published (e. g. ref. 3, 4).
As an **alternative** to the toxic formaldehyde, guanidine thiocyanate may be applied for Northern blotting (5). A final concentration of 20 mM is sufficient to denature RNA in the agarose gel (5).

Guanidine thiocyanate BioChemica

B

Specification:

Assay (titr) min. 99 %
Sulfated ash max. 0.05 %
pH (1 M) 5.0 - 7.0
Loss on drying max. 0.3 %
Fe max. 0.0001 %

A (1 cm/33 % in H₂O)
280 nm max. 0.4
300 nm max. 0.05

Order-No.	Quantity
A4335,0250	250 g
A4335,0500	500 g
A4335,1000	1 kg

Guanidine thiocyanate pure

B

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.0005 %
Sulfated ash max. 0.05 %
Loss on drying max. 0.3 %
Fe max. 0.0001 %

Order-No.	Quantity
A4756,0100	100 g
A4756,0250	250 g
A4756,0500	500 g
A4756,1000	1 kg

Guanidine thiocyanate - Solutions Molecular biology grade

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 2
EUH032-H302-H332-H412-H312
P301+P312-P280-P304+P340



Guanidine thiocyanate - Solution (6 M in 0.1 M Tris; pH 7.5) Molecular biology grade

B

Composition:

GuaSCN (A1107) 708.96 g/L
Tris (A2264) 12.11 g/L

Specification:

DNases/RNases/Proteases
..... not detectable

Order-No.	Quantity
A0703,0100	100 ml
A0703,0250	250 ml
A0703,1000	1 L

Guanidine thiocyanate - Solution (4 M in 0.1 M Tris; pH 7.5) Molecular biology grade

B

Composition:

GuaSCN (A1107) 472.64 g/L
Tris (A2264) 12.11 g/L

Specification:

DNases/RNases/Proteases
..... not detectable

Order-No.	Quantity
A0861,0100	100 ml
A0861,0250	250 ml
A0861,0500	500 ml
A0861,1000	1 L

Comment: Solution in 0.1 M Tris (pH 7.5). Guanidine thiocyanate may precipitate. Dissolve in a water bath at 30 - 40°C!

Guanidinium chloride see Guanidine hydrochloride Page 392

Guanine BioChemica

B

2-Amino-6-hydroxypurine, 2-
Aminohypoxanthine

$C_5H_5N_5O$
 $M = 151.13$ g/mol
CAS-No.: 73-40-5
HS-No.: 29335995
EC-No.: 200-799-8

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H315-H335-H319
P305+P351+P338-P261



Melting point 360°C (dec.)
pK₁ (25°C) approx. 3.3
pK₂ (25°C) approx. 9.2
pK₃ (25°C) approx. 12.3

Specification:

Assay min. 99 %
Heavy metals max. 0.001 %

Order-No.	Quantity
A0702,0010	10 g
A0702,0025	25 g

Guanine-9-β-D-ribofuranoside see Guanosine BioChemica Page 394

Guanine hydrochloride BioChemica

B

2-Amino-6-hydroxypurine hydrochloride

$C_5H_5N_5O \cdot HCl$
 $M = 187.59$ g/mol
CAS-No.: 635-39-2
HS-No.: 29335995
EC-No.: 220-867-0

Storage: 2-8°C

Warning
H315-H319-H335
P261-P305+P351+P338



Melting point > 300°C

Specification:

Assay (titr.) min. 98 %
Heavy metals (as Pb) max. 0.005 %
Loss on drying max. 2 %

Order-No.	Quantity
A4303,0005	5 g
A4303,0010	10 g

Guanosine BioChemica

B

Guanine-9-β-D-ribofuranoside

$C_{10}H_{13}N_5O_5$
 $M = 283.24$ g/mol
CAS-No.: 118-00-3
HS-No.: 29349990
EC-No.: 204-227-8

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point 250°C (dec.)
pK₁ (25°C) approx. 1.6
pK₂ (25°C) approx. 9.2
pK₃ (25°C) approx. 12.4

Specification:

Assay min. 98 %
Heavy metals max. 0.001 %

Order-No.	Quantity
A0701,0010	10 g
A0701,0025	25 g
A0701,0100	100 g

Guanosine 5'-monophosphoric acid disodium salt BioChemica

B

GMP disodium salt

$C_{10}H_{12}N_5Na_2O_8P$
 $M = 407.18$ g/mol
CAS-No.: 5550-12-9
HS-No.: 29349990
EC-No.: 226-914-1

Storage: 2-8°C

WGK: 1

Specification:

Assay min. 98 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying approx. 20 %

Order-No.	Quantity
A3758,0001	1 g
A3758,0010	10 g

Guanosine 5'-triphosphoric acid disodium salt BioChemica

B

GTP disodium salt

$C_{10}H_{14}Na_2N_5O_{14}P_3$
 $M = 567.15$ g/mol
CAS-No.: 56001-37-7
HS-No.: 29349990
EC-No.: 252-847-2

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 90 %
GDP (HPLC) max. 7 %
GMP (HPLC) max. 3 %
Loss on drying max. 8 %

Order-No.	Quantity
A1803,0100	100 mg
A1803,0250	250 mg
A1803,0500	500 mg
A1803,0001	1 g

N-Guanyl-N-methylglycine monohydrate see Creatine monohydrate BioChemica Page 246

GuaSCN see Guanidine thiocyanate Page 393

H₃PO₂ see Hypophosphorous acid 50 % Page 431

H₃PO₃ see Phosphorous acid ≤ 50 % Page 627

H₃PO₄ see ortho-Phosphoric acid (concentrations ≥ 25 %) Page 624

H₂SO₄ see Sulfuric acid 10 % Page 783

H₂SO₄ - Standard volumetric solutions see Sulfuric acid - Standard volumetric solution (6 M) Page 784

H-7 BioChemica

B

1-(5-Isoquinolinylsulfonyl)-2-methylpiperazine dihydrochloride

C₁₄H₁₇N₃O₂S · 2HCl
M = 364.29 g/mol
CAS-No.: 140663-38-3
HS-No.: 29335995

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.
A2215,0005
A2215,0010

Quantity
5 mg
10 mg

Literature: (1) Hidaka, H. *et al.* (1984) *Biochemistry* **23**, 5036-5041

Isoquinolinesulfonamides, novel and potent inhibitors of cyclic nucleotide dependent Protein kinase and Protein kinase C.

H-8 BioChemica

B

N-[2-(Methylamino)-ethyl]-5-isoquinoline sulfonamide dihydrochloride

C₁₂H₁₅N₃O₂S · 2HCl
M = 338.30 g/mol
CAS-No.: 84478-11-5
HS-No.: 29339980

Storage: RT

Specification:

Assay (TLC) min. 99 %
Solubility (2 %; EtOH) clear, colorless

Order-No.
A2276,0005
A2276,0010

Quantity
5 mg
10 mg

Literature: (1) Hidaka, H. *et al.* (1984) *Biochemistry* **23**, 5036-5041

(2) Hagiwara, M. *et al.* (1987) *Mol. Pharmacol.* **31**, 523-528

(3) Goodman, H.M. *et al.* (1990) *Endocrinol.* **126**, 441-450

(4) Dubois, M.-F. *et al.* (1994) *J. Biol. Chem.* **269**, 13331-13336

Isoquinolinesulfonamides, novel and potent inhibitors of cyclic nucleotide dependent protein kinase and protein kinase C.
Specific binding of a novel compound, N-[2-(Methylamino)ethyl]-5-isoquinolinesulfonamide (H-8) to the active site of cAMP-dependent protein kinase.
The Isoquinoline sulfonamide inhibitors of protein phosphorylation, H-7, H-8, and HA-1004, also inhibit RNA synthesis: Studies on response of Adipose tissue to Growth hormone.
Inhibitors of transcription such as 5,6-Dichloro-1-β-D-ribofuranosylbenzimidazole and Isoquinoline sulfonamide derivatives (H-8 and H-7) promote dephosphorylation of the carboxyl-terminal domain of RNA Polymerase II largest subunit.

H-9 BioChemica

B

N-(2-Aminoethyl)-isoquinoline-5-sulfonamide hydrochloride

C₁₁H₁₃N₃O₂S · HCl
M = 287.76 g/mol
CAS-No.: 116970-50-4
HS-No.: 29339980

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %
Solubility (5 %; MeOH) clear, colorless

Order-No.
A2256,0005
A2256,0010

Quantity
5 mg
10 mg

Literature: (1) Hidaka, H. *et al.* (1984) *Biochemistry* **23**, 5036-5041

(2) Inagaki, M. *et al.* (1985) *J. Biol. Chem.* **260**, 2922-2925

Isoquinolinesulfonamides, novel and potent inhibitors of cyclic nucleotide dependent protein kinase and Protein kinase C.
N-(2-Aminoethyl)-5-isoquinolinesulfonamide, a newly synthesized protein kinase inhibitor, functions as a ligand in affinity chromatography.

Haines reagent



C

for dedection of reducing groups

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN1814
WGK: 1
P313-P280-P305+P351+P338

Composition:

CuSO₄ · 5H₂O (A1034) 12.5 g/L
Glycerol anhydrous (A3552) 94 g/L
Potassium hydroxide - Solution 10 % (A3337) 469 g/L

Order-No.
A8101,0100
A8101,0500
A8101,1000

Quantity
100 ml
500 ml
1 L

Ham's F10 - Medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Ham's F10 - Medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.
A1970,1000
A1970,5000
A1970,9010
A1970,9050

Quantity
1 L
5 L
10 L
50 L

Ham's F10 - Medium			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1525,1000	1 L	
	A1525,5000	5 L	
	A1525,9010	10 L	
	A1525,9050	50 L	

Ham's F10 - Medium			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1989,1000	1 L	
without Sodium hydrogen carbonate	A1989,5000	5 L	
	A1989,9010	10 L	
	A1989,9050	50 L	

Ham's F10 - Medium			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1982,1000	1 L	
without Sodium hydrogen carbonate	A1982,5000	5 L	
	A1982,9010	10 L	
	A1982,9050	50 L	

Ham's F10 - Medium			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2026,1000	1 L	
with 1.2 g/L Sodium hydrogen carbonate	A2026,5000	5 L	
	A2026,9010	10 L	
	A2026,9050	50 L	

Ham's F10 - Medium			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1952,1000N	1 L	
with 1.2 g/L Sodium hydrogen carbonate	A1952,5000	5 L	
	A1952,9010	10 L	
	A1952,9050	50 L	

Ham's F12 - Medium			
	HS-No.: 38210000	Storage: 2-8°C	hygroscopic
		LGK: 10 - 13	P262

Ham's F12 - Medium			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1948,1000	1 L	
	A1948,5000	5 L	
	A1948,9010	10 L	
	A1948,9050	50 L	

Ham's F12 - Medium			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1526,1000	1 L	
	A1526,5000	5 L	
	A1526,9010	10 L	
	A1526,9050	50 L	

Ham's F12 - Medium			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1969,1000	1 L	
without Sodium hydrogen carbonate	A1969,5000	5 L	
	A1969,9010	10 L	
	A1969,9050	50 L	

Ham's F12 - Medium			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1953,1000	1 L	
without Sodium hydrogen carbonate	A1953,5000	5 L	
	A1953,9010	10 L	
	A1953,9050	50 L	

Ham's F12K - Medium

HS-No.: 38210000	Storage: 2-8°C LGK: 10 - 13	hygroscopic P262

Ham's F12K - Medium				B
without L-Glutamine		Order-No.	Quantity	
without Sodium hydrogen carbonate		A1963,1000	1 L	
		A1963,5000	5 L	
		A1963,9010	10 L	
		A1963,9050	50 L	

Ham's F12K - Medium				B
with L-Glutamine		Order-No.	Quantity	
without Sodium hydrogen carbonate		A1927,1000	1 L	
		A1927,5000	5 L	
		A1927,9010	10 L	
		A1927,9050	50 L	

Hamamelitannin

from <i>Hamamelis virginiana</i>	C ₂₀ H ₂₀ O ₁₄ M = 484,37 g/mol CAS-No.: 469-32-9 HS-No.: 29420000	Storage: 2-8°C

Hamamelitannin HPLC grade				B
Specification:		Order-No.	Quantity	
Assay min. 99 %		A6754,0020	20 mg	
		A6754,0100	100 mg	

Comment: Documents included: HPLC-DAD with UV spectrum.

Hamamelitannin pure				B
Specification:		Order-No.	Quantity	
Assay min. 96 %		A6908,0050	50 mg	
		A6908,0100	100 mg	

Comment: Documents included: HPLC-DAD with UV spectrum.

Hanks' balanced salts (HBSS)

HS-No.: 38210000	Storage: 2-8°C LGK: 10 - 13	hygroscopic P262

Hanks' balanced salts (HBSS)				B
with 1.0 g/L D(+)-Glucose		Order-No.	Quantity	
with Phenol red		A1711,5000	5 L	
without Sodium hydrogen carbonate		A1711,9010	10 L	
		A1711,9050	50 L	

Hanks' balanced salts (HBSS)				B
with 1.0 g/L D(+)-Glucose		Order-No.	Quantity	
without Phenol red		A3140,5000	5 L	
without Sodium hydrogen carbonate		A3140,9010	10 L	
		A3140,9050	50 L	

Hanks' balanced salts (HBSS)				B
with 1.0 g/L D(+)-Glucose		Order-No.	Quantity	
without Calcium and Magnesium		A2729,5000	5 L	
with Phenol red		A2729,9010	10 L	
without Sodium hydrogen carbonate		A2729,9050	50 L	

Hanks' balanced salts (HBSS)

B

with 1.0 g/L D(+)-Glucose
without Calcium and Magnesium
without Phenol red
without Sodium hydrogen carbonate

Order-No.	Quantity
A2512,5000	5 L
A2512,9010	10 L
A2512,9050	50 L

Haptoglobin, human

B

lyophilized
from human serum

CAS-No.: 9087-69-8
HS-No.: 30021091

Storage: 2-8°C

Specification:
Assay min. 70 %

Order-No.	Quantity
A6957,0100	100 µg
A6957,0500	500 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Harden-Young - Ester see D-Fructose-1,6-diphosphate trisodium salt octahydrate *BioChemica* Page 364

Harpagide HPLC grade

B

from *Harpagophytum procumbens*

C₁₅H₂₄O₁₀
M = 364.34 g/mol
CAS-No.: 6926-08-5
HS-No.: 29420000

Storage: 2-8°C

Specification:
Assay min. 99 %

Order-No.	Quantity
A5299,0010	10 mg
A5299,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Harpagoside HPLC grade

B

8-Cinnamoylharpagid
from *Harpagophytum procumbens*

C₂₄H₃₀O₁₁
M = 494.48 g/mol
CAS-No.: 19210-12-9
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:
Assay min. 99 %

Order-No.	Quantity
A3392,0020	20 mg
A3392,0020DOC	20 mg
A3392,0050	50 mg
A3392,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

rHu HB-EGF bioconfident grade



B

Sterile filtered through a 0.2 µm filter.
Lyophilized from 50 mM potassium
phosphate, 500 mM NaCl pH 7.4.
from *Hordeum vulgare*

M = 11.5 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8898,0010	10 µg
A8898,0050	50 µg
A8898,0100	100 µg
A8898,1000	1 mg

Comment: Recombinant human HB-EGF contains 83 amino acids and a 16 amino acid histidine-based tag for a total length of 99 amino acids and has a predicted molecular mass of 11.5 kDa including his-tag. The recombinant protein migrates with an apparent molecular mass of 18 kDa in SDS-PAGE.

HBGF-2 see rHu bFGF (155) Page 349
HBGH-2 see rHu bFGF (155) Page 349
HBr see Hydrobromic acid 48 % Page 411
hCG see Chorionic Gonadotropin (hCG), human Page 210
β-hCG see Chorionic Gonadotropin β-subunit, human Page 210
HCl see Hydrochloric acid (concentrations: ≥ 25%) Page 411
HCl (1 M) see Hydrochloric acid (1 M) Molecular biology grade Page 416
HCl - Standard volumetric solutions see Hydrochloric acid - Standard volumetric solutions ≤ 2.5 M (aqueous solutions) Page 417
HClO₄ see Perchloric acid Page 605
HDL see Lipoprotein, high density (HDL), human Page 490
Heating bath liquid see Oil bath filling Page 583

HECAMEG BioChemica

B

6-O-(*N*-Heptylcarbamoyl)-methyl- α -D-glucopyranoside

$C_{15}H_{29}NO_7$
 $M = 335.39$ g/mol
 CAS-No.: 115457-83-5
 HS-No.: 29329970

Storage: 2-8°C
 LGK: 10 - 13

CMC (25°C) 19.5 mM
 Classification: nonionic detergent
 Melting point 100 - 102°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A1384,0001	1 g
A1384,0005	5 g
A1384,0010	10 g

Literature: (1) Plusquellec, D. et al. (1989) *Anal. Biochem.* **179**, 145-153

Synthesis and characterization of HECAMEG, a new surfactant for membrane studies.

Comment: HECAMEG is a mild, non-denaturing detergent with a high water-solubility (at 0°C; 0.2 M). Its high CMC allows the easy removal by dialysis. For the isolation of bacteriorhodopsin from *H. halobium* HECAMEG was applied in a concentration of 75 mM and for spiralin from *S. melliferum* of 60 - 65 mM, respectively (1).

Hederacoside C

Hederasaponin C
 from *Hedera helix*

$C_{59}H_{96}O_{26}$
 $M = 1221.39$ g/mol
 CAS-No.: 27013-76-9
 HS-No.: 29389090

Storage: 2-8°C
 LGK: 10 - 13

Hederacoside C HPLC grade

B

Specification:

Assay min. 99 %

Order-No.	Quantity
A2059,0020	20 mg
A2059,0020DOC	20 mg
A2059,0050	50 mg
A2059,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Hederacosid C pure



B

Specification:

Assay min. 95 %

Order-No.	Quantity
A8700,0100	100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hederagenin

3,23-Dihydroxyolean-12-en-28-acid
 from *Hedera helix*

$C_{30}H_{48}O_4$
 $M = 472.73$ g/mol
 CAS-No.: 465-99-6
 HS-No.: 29181998

Storage: 2-8°C
 LGK: 10 - 13

Class / PG: 6.1/III
 UN2811

Hederagenin HPLC grade

B

Specification:

Assay min. 98 %

Order-No.	Quantity
A3722,0020	20 mg
A3722,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hederagenin pure

B

Specification:

Assay min. 90 %

Order-No.	Quantity
A7226,0100	100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hederasaponin C see Hederacoside C Page 399

α-Hederin HPLC grade

B

Helixine
from *Hedera helix*

$C_{41}H_{66}O_{12}$
 $M = 750.97$ g/mol
CAS-No.: 27013-91-8
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A2060,0010	10 mg
A2060,0010DOC	10 mg
A2060,0020	20 mg
A2060,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Hektoen Enteric Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Acid fuchsin 0.1 g/L
Agar 15.0 g/L
Bile salts 9.0 g/L
Bromothymol blue 0.065 g/L
Ferric citrate 1.5 g/L
Lactose 12.0 g/L

Peptones 15.3 g/L
Salicin 2.0 g/L
Sodium chloride 5.0 g/L
Sodium thiosulfate 5.0 g/L
Sucrose 12.0 g/L

Specification:

pH before autoclaving
..... approx. 7.5 (20°C)

Order-No.	Quantity
A5750,0500	500 g
A5750,5000	5 kg

Literature: (1) King & Metzger (1968) *Appl. Microbiol.* **16**, 577.

Comment: This selective and differential medium is used for the isolation of enteric microorganisms, especially *Salmonella* and some *Shigella* species.

Direction: Suspend 77 g in 1 L of distilled water and heat with frequent agitation until the medium boils. Cool quickly. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Store the prepared medium at 2-8°C.

Helianthine see Methyl orange (C.I. 13025) Page 540
Helicocerin see Cerulenin *BioChemica* Page 192
Helixin C see Nigericin sodium salt *BioChemica* Page 567
Helixine see α-Hederin HPLC grade Page 400

Hematoxylin monohydrate (C.I. 75290) Microscopy grade

B

Natural Black 1

$C_{16}H_{14}O_6 \cdot H_2O$
 $M = 320.29$ g/mol
CAS-No.: 517-28-2
HS-No.: 32030010
EC-No.: 208-237-3

Storage: RT
LGK: 10 - 13

WGK: 2

Melting point approx. 140°C
Solubility (H₂O) soluble (90°C)

Specification:

λ_{max} (Acetonitrile) 290 - 292 nm
pH (1 %; H₂O; 25°C) 4.5 - 7.0
Loss on drying max. 6.0 %

Order-No.	Quantity
A3865,0010	10 g
A3865,0025	25 g
A3865,0100	100 g

Hemin chloride see Hemin porcine Page 400

Hemin porcine

B

Ferriprotoporphyrine IX chloride, Hemin
chloride

$C_{34}H_{31}FeN_4O_4 \cdot HCl$
 $M = 652.00$ g/mol
CAS-No.: 16009-13-5
HS-No.: 29339980

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay (photometr.) approx. 98 %
Water (K.F.) max. 2 %
Fe min. 7 %

Order-No.	Quantity
A0942,0005	5 g
A0942,0025	25 g
A0942,0100	100 g

Literature: (1) Ikariyama, Y. & Suzuki, S. (1982) *Anal. Chem.* **54**, 1126-1129

Luminescence immunoassay of human serum albumin with hemin as labeling catalyst.

Heparin sodium salt

B

from porcine mucosa

$M = 8000 - 25000$ g/mol
CAS-No.: 9041-08-1
HS-No.: 30019091

Storage: RT

WGK: 1
Warning
H302
P301+P310-P305+P351+P338-P280



Specification:

Assay min. 150 I.U. / mg
Heavy metals (as Pb) max. 0.003 %
Loss on drying max. 8 %
Solubility (1 %; H_2O) clear, colorless
Sulfated ash 30.0 - 43.0 %

pH (1 %; H_2O) 5.5 - 8.0 (20°C)
Na 9.5 - 12.5 %

Order-No.	Quantity
A3004,0250	250 mg
A3004,0500	500 mg
A3004,0001	1 g
A3004,0005	5 g

recombinant Human Hepatocyte Growth Factor see rHu HGF Page 408

HEPES

N-(2-Hydroxyethyl)-piperazine-*N'*-2-ethanesulfonic acid, 4-(2-Hydroxyethyl)-1-piperazine-1-ethanesulfonic acid

$C_8H_{18}N_2O_4S$
 $M = 238.31$ g/mol
CAS-No.: 7365-45-9
HS-No.: 29335995
EC-No.: 230-907-9

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point 210 - 215°C
Useful pH range pH 6.8 - 8.2
 pK_a (20°C) 7.55

HEPES Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay min. 99.5 %
pH (1 %; H_2O) 4.7 - 6.0
Loss on drying max. 0.25 %
Chloride max. 0.005 %

Sulfate max. 0.005 %
As max. 0.0001 %
Fe max. 0.001 %
Pb max. 0.001 %
A (1 cm/0.1 M water HPLC grade)
260 nm max. 0.1
280 nm max. 0.05

Order-No.	Quantity
A3724,0100	100 g
A3724,0250	250 g
A3724,0500	500 g
A3724,1000	1 kg

HEPES Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99.5 %
Sulfated ash max. 0.1 %
pH (1 %; H_2O) 4.7 - 6.0
Loss on drying max. 0.5 %

Chloride max. 0.005 %
Sulfate max. 0.05 %
As max. 0.0001 %
Fe max. 0.0005 %
Pb max. 0.001 %

Order-No.	Quantity
A3268,0100	100 g
A3268,0250	250 g
A3268,0500	500 g
A3268,1000	1 kg

HEPES Buffer grade

B

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
pH (1 %; H_2O) 4.7 - 6.0
Loss on drying max. 0.5 %
Chloride max. 0.05 %
Sulfate max. 0.05 %

Order-No.	Quantity
A1069,0100	100 g
A1069,0250	250 g
A1069,0500	500 g
A1069,1000	1 kg
A1069,10006	6 x 1 kg
A1069,5000	5 kg
A1069,9010	10 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
(2) Shipman, C. (1969) *Proc. Soc. Exp. Biol. Med.* **130**, 305-310
(3) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
(4) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310
(5) Liu, Q. & Sommer, S.S. (1998) *Biotechniques* **25**, 50-56

Hydrogen ion buffers for biological research.
Evaluation of HEPES as a tissue culture buffer.
Hydrogen ion buffers.
Hydrogen ion buffers for biological research.
The SSCP-Phenomenon: Addition of HEPES influences the electrophoretal mobility.

Comment: HEPES is a widely used buffer in biological studies. There is only one restriction in the use of this buffer, because it interferes with the Folin protein assay. In cell culture media, it is employed as a substitute for the bicarbonate buffer at a concentration of 25 mM or as a supplement to the bicarbonate buffer (concentration 10 - 15 mM). The addition of 20 mM HEPES to TBE buffer improves the migration behaviour of certain samples in the SSCP analysis (single-strand conformation polymorphism), with a higher resolution especially if small differences in the sequences between certain bands are wanted (5).

HEPES buffer (1 M)

aqueous Solution

HS-No.: 38220000

Storage: RT

HEPES buffer pH 8.0 (1 M) sterile

B

Composition:

HEPES (A1069) 238.31 g/L (1 M)

Specification:

pH (20°C; adjusted with NaOH)
..... 8.0 ± 0.2

Order-No.	Quantity
A6906,0125	125 ml
A6906,0250	250 ml

HEPES buffer pH 7.5 (1 M) sterile

B

Composition:	Specification:
HEPES (A1069) 238.31 g/L (1 M)	pH (20°C; adjusted with NaOH) 7.5 ± 0.2

Order-No.	Quantity
A6916,0125	125 ml
A6916,0250	250 ml

HEPES - balanced salts

B

HS-No.: 38210000	Storage: 2-8°C LGK: 10 - 13	hygroscopic P262

Order-No.	Quantity
A0629,1000	1 L
A0629,5000	5 L
A0629,9010	10 L

HEPES hemisodium salt Buffer grade



B

C ₉ H _{17.5} N ₂ NaO _{5.5} S M = 249.30 g/mol CAS-No.: 103404-87-1 HS-No.: 29335995	Storage: RT

Specification:	A (1 cm/0.1 M in H ₂ O)	Order-No.	Quantity
Assay (titr.) min. 99 %	260 nm max. 0.1	A8062,0025	25 g
Heavy metals (as Pb) max. 0.0005 %	280 nm max. 0.05	A8062,0050	50 g
Loss on drying (105°C; 2 h) max. 3.0 %		A8062,0100	100 g
pH (1 %; H ₂ O) 7.2 - 7.6			

HEPES sodium salt

Useful pH range pH 6.8 - 8.2 pK _a (20°C) 7.55	C ₉ H ₁₇ N ₂ NaO ₄ S M = 260.28 g/mol CAS-No.: 75277-39-3 HS-No.: 29335995 EC-No.: 278-169-7	Storage: RT LGK: 10 - 13 Disposal: 3	WGK: 1

HEPES sodium salt Molecular biology grade

B

Specification:	A (1 cm/0.1 M in H ₂ O)	Order-No.	Quantity
DNases/RNases/Proteases not detectable	260 nm max. 0.1	A4592,0025	25 g
Assay min. 99 %	280 nm max. 0.05	A4592,0050	50 g
Heavy metals (as Pb) max. 0.0005 %		A4592,0100	100 g
Loss on drying max. 3 %		A4592,0500	500 g

HEPES sodium salt Buffer grade

B

Specification:	A (1 cm/0.1 M in H ₂ O)	Order-No.	Quantity
Assay (titr.) min. 99 %	260 nm max. 0.1	A1070,0050	50 g
Heavy metals (as Pb) max. 0.001 %	280 nm max. 0.05	A1070,0100	100 g
Water (K.F.) max. 3 %		A1070,0500	500 g

HEPPS Buffer grade

B

N-(2-Hydroxyethyl)-piperazine-N'-3-propanesulfonic acid, 4-(2-Hydroxyethyl)-piperazine-1-propanesulfonic acid, EPPS	C ₉ H ₂₀ N ₂ O ₄ S M = 252.33 g/mol CAS-No.: 16052-06-5 HS-No.: 29335995 EC-No.: 240-198-8	Storage: RT LGK: 10 - 13 Disposal: 3	WGK: 3*
Melting point 237 - 239°C (dec.)			
Useful pH range pH 7.3 - 8.7			
pK _a (20°C) 8.1			

Specification:	A (1 cm/0.1 M in H ₂ O)	Order-No.	Quantity
Assay (titr.) min. 99 %	260 nm max. 0.05	A1071,0025	25 g
Heavy metals (as Pb) max. 0.001 %	280 nm max. 0.05	A1071,0100	100 g
Loss on drying max. 1 %		A1071,0500	500 g

Literature: (1) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
(2) Ferguson, W.J. et al. (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers.
Hydrogen ion buffers for biological research.

Comment: HEPPS has many properties similar to Hepes. Because of its high buffer range, it is suited for studies on phosphorylation reactions, especially if tricine (binds metal ions!) cannot be applied. HEPPS interferes with the Folin protein assay, but not with the Biuret assay.

HEPPSO Buffer grade

B

4-(2-Hydroxyethyl)-piperazine-1-(2-hydroxy)-propanesulfonic acid

C₉H₂₀N₂O₅S
M = 268.33 g/mol
CAS-No.: 68399-78-0
HS-No.: 29335995
EC-No.: 269-990-1

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H335-H315-H319
P262-P260



Melting point 158 - 160°C
Useful pH range pH 7.1 - 8.5
pK_a (20°C) 7.9

Specification:

Assay (titr.)	 min. 99 %	A (1 cm/0.1 M in H ₂ O)
Heavy metals (as Pb)	 max. 0.0005 %	260 nm max. 0.1
Loss on drying	 max. 7 %	280 nm max. 0.05

Order-No.	Quantity
A1072,0025	25 g
A1072,0100	100 g

Literature: (1) Ferguson, W.J. et al. (1980) *Anal. Biochem.* **104**, 300-310
(2) Vasconcelos, M.T.S.D. et al. (1998) *Anal. Biochem.* **265**, 193-201

Hydrogen ion buffers for biological research.
Copper(II) complexation by DIPSO and HEPPSO

Comment: HEPPSO interferes with the Lowry protein assay and strongly complexes copper(II) ions.

n-Heptane

Boiling point 98°C
Density (d 20°C/4°C) .. 0.683
Melting point -90°C
n 20°C/D 1.3877

C₇H₁₆
M = 100.21 g/mol
CAS-No.: 142-82-5
HS-No.: 29011000
EC-No.: 205-563-8

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1206
WGK: 2
Danger
H304-H315-H410-H336-H225
P331-P302+P352-P301+P310-P273-
P210-P403+P235



n-Heptane Peptide sequencing grade

B

Specification:

Assay (HPLC)	 min. 95 %	A (1cm/Water HPLC grade)
Non-volatile matter	 max. 0.0005 %	210 nm max. 0.30
Oxid. substances	 complies	225 nm max. 0.10
Aldehyde	 complies	245 nm max. 0.01
Loss on drying	 max. 0.005 %	

Order-No.	Quantity
A0568,1000	1 L
A0568,2500	2.5 L

n-Heptane Residue analysis grade

C

Specification:

Assay (HPLC)	 min. 95 %
Acidity/Alkalinity	 max. 0.0005 meq/g
Non-volatile matter	 max. 0.0005 %
Water (K.F.)	 max. 0.3 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard)	 max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard)	 max. 10 ng/L

Order-No.	Quantity
A1618,2500	2.5 L
A1618,25004	4 x 2,5 L

n-Heptane HPLC grade

C

Specification:

Assay (HPLC)	 min. 95 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	 max. 0.0005 meq/g	210 nm max. 0.2
Non-volatile matter	 max. 0.0005 %	220 nm max. 0.1
Water (K.F.)	 max. 0.01 %	230 nm max. 0.02
		240 nm max. 0.01
		250 nm max. 0.005

Order-No.	Quantity
A1619,1000	1 L
A1619,10006	6 x 1 L
A1619,2500	2.5 L
A1619,25004	4 x 2,5 L

n-Heptane Fluorescence grade

C

Specification:

Assay (HPLC)	 min. 95 %	A (1 cm/water HPLC grade)	Fluorescence (Quinine)
Acidity/Alkalinity	 max. 0.0005 meq/g	210 nm max. 0.2	254 nm max. 1 ppb
Non-volatile matter	 max. 0.0005 %	220 nm max. 0.1	365 nm max. 1 ppb
Water (K.F.)	 max. 0.01 %	230 nm max. 0.02	

Order-No.	Quantity
A2372,1000	1 L
A2372,2500	2.5 L

n-Heptane p. A.

C

Specification:

Assay (HPLC)	 min. 99 %	Mg	 max. 0.000005 %
Acidity/Alkalinity	 max. 0.0001 meq/g	Na	 max. 0.00005 %
Bromine number	 max. 0.5	Pb	 max. 0.000002 %
Non-volatile matter	 max. 0.001 %	Zn	 max. 0.00002 %
Total P	 max. 0.00001 %		
Total S	 max. 0.001 %		
Total Si	 max. 0.000005 %		
Water (K.F.)	 max. 0.02 %		
Ca	 max. 0.00005 %		
Cu	 max. 0.000002 %		
Fe	 max. 0.000001 %		

Order-No.	Quantity
A0619,0500	500 ml
A0619,1000	1 L
A0619,10006	6 x 1 L
A0619,2500	2.5 L
A0619,25004	4 x 2,5 L
A0619,5000	5 L
A0619,9010	10 L
A0619,9025BK	25 L
A0619,9025PE	25 L

n-Heptane pure

Specification:

Assay (HPLC) min. 99 %

Order-No.	Quantity
A0656,1000	1 L
A0656,10006	6 x 1 L
A0656,2500	2.5 L
A0656,25004	4 x 2,5 L
A0656,5000	5 L
A0656,9010	10 L
A0656,9025BK	25 L
A0656,9025PE	25 L

C

n-Heptane Technical grade

Specification:

Assay min. 98 %

Order-No.	Quantity
A4568,2500	2.5 L
A4568,25004	4 x 2,5 L
A4568,5000	5 L
A4568,9010	10 L
A4568,9025BK	25 L
A4568,9025PE	25 L

C

1-Heptanesulfonic acid sodium salt anhydrous IPC grade

C

Sodium heptylsulfonate

 $C_7H_{15}NaO_3S$
 $M = 202.25$ g/mol

CAS-No.: 22767-50-6

HS-No.: 29041000

EC-No.: 245-210-5

Storage: RT

LGK: 10 - 13

Disposal: 28

WGK: 3*

Specification:

Assay (titr.) min. 99 %
Alkylbromide max. 0.01 %
Loss on drying max. 1 %
Solubility (5 %; H_2O) clear, colorless

A (1 cm/0.005 M in water HPLC grade)
200 nm max. 0.15
220 nm max. 0.15

Order-No.	Quantity
A3708,0005	5 g
A3708,0010	10 g
A3708,0025	25 g

Literature: (1) Hancock, W.S. & Harding, D.R.K. (1982) *J. Chromatogr.* **228**, 273-278

Rapid analysis of 3-methylhistidine in urine, plasma, muscle and amniotic fluid with a single HPLC system but with different ion-pair reagents.

1-Heptanesulfonic acid sodium salt monohydrate IPC grade

C

Sodium heptylsulfonate monohydrate

 $C_7H_{15}NaO_3S \cdot H_2O$
 $M = 220.27$ g/mol

CAS-No.: 22767-50-6

HS-No.: 29041000

EC-No.: 245-210-5

Storage: RT

LGK: 10 - 13

Disposal: 28

WGK: 3*

Specification:

Assay (titr.) min. 99 %
Alkylbromide max. 0.01 %
Solubility (5 %; H_2O) clear, colorless

A (1 cm/0.005 M in water HPLC grade)
200 nm max. 0.15
220 nm max. 0.06

Order-No.	Quantity
A1015,0005	5 g
A1015,0010	10 g
A1015,0025	25 g

Literature: (1) Hancock, W.S. & Harding, D.R.K. (1982) *J. Chromatogr.* **228**, 273-278

Rapid analysis of 3-methylhistidine in urine, plasma, muscle and amniotic fluid with a single HPLC system but with different ion-pair reagents.

6-O-(*N*-Heptylcarbamoyl)-methyl- α -D-glucopyranoside see HECAMEG BioChemica Page 399

n-Heptyl- β -D-glucopyranoside BioChemica

B

n-Heptyl- β -D-glucoside

 $C_{13}H_{26}O_6$
 $M = 278.35$ g/mol

CAS-No.: 78617-12-6

HS-No.: 29389090

Storage: 2-8°C

CMC (20°C) 79 mM

Classification: nonionic detergent

Specification:

Assay min. 99 %
 α 20°C/D: 1 %, H_2O -31° ± 0.5°
pH (1 %; H_2O) 6.0 - 7.0
Water (K.F.) max. 0.2 %

A (1 cm/1 % in water HPLC grade)
260 nm max. 0.03

Order-No.	Quantity
A6807,0250	250 mg
A6807,0001	1 g
A6807,0005	5 g

n-Heptyl- β -D-glucoside see *n*-Heptyl- β -D-glucopyranoside BioChemica Page 404
recombinant Human Heregulin- β -2 see rHu NRG-1 bioconfident grade Page 578

Hesperetin HPLC grade

B

Cyanidanon-4'-methyl ether
from *Citrus sinensis*

$C_{16}H_{14}O_6$
 $M = 302.28$ g/mol
CAS-No.: 520-33-2
HS-No.: 29420000

Storage: 2-8°C

Warning
H302
P260-P308+P313



Specification:

Assay min. 98 %

Order-No.	Quantity
A5298,0020	20 mg
A5298,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hesperetin-7-rutinoside, Cirantin see Hesperidin HPLC grade Page 405

Hesperidin HPLC grade

B

Hesperetin-7-rutinoside, Cirantin
from *Citrus sinensis*

$C_{28}H_{34}O_{15}$
 $M = 610.57$ g/mol
CAS-No.: 520-26-3
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A5302,0020	20 mg
A5302,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

1-Hexadecanol see Cetyl alcohol for synthesis Page 193
N-Hexadecylpyridinium bromide see Cetylpyridinium bromide *BioChemica* Page 193
Hexadecylpyridinium chloride monohydrate see Cetylpyridinium chloride monohydrate *BioChemica* Page 194
Hexadecyltrimethylammonium bromide see Cetyltrimethylammonium bromide Page 194
2,4-Hexadienoic acid see Sorbic acid pure Ph. Eur., NF Page 758
Hexahydrobenzene see Cyclohexane Page 250
Hexahydrophenol see Cyclohexanol for synthesis Page 251
Hexahydrotoluene see Methylcyclohexane for synthesis Page 537
Hexaline see Cyclohexanol for synthesis Page 251

1,1,1,3,3,3-Hexamethyldisilazane GC grade

C

Bis-(trimethylsilyl)-amine, HMDS

$C_6H_{19}NSi_2$
 $M = 161.40$ g/mol
CAS-No.: 999-97-3
HS-No.: 29310099
EC-No.: 213-668-5

Storage: RT
LGK: 3 A
Disposal: 3

Class / PG: 3(6.1)(8)/II
UN3286
WGK: 2
Danger
H314-H302-H225-H331-H311
P403+P235-P301+P330+P331-
P305+P351+P338-P280-P302+P352-
P304+P340-P210



Boiling point 126°C
Density (d 20°C/4°C) .. 0.7740
Melting point -82°C
n 20°C/D 1.4071

Specification:

Assay (HPLC) min. 97.5 %
Identity complies

Order-No.	Quantity
A1662,0025	25 ml
A1662,0100	100 ml

Comment: Versatile silylating agent. For the silylation of glass columns and glass surfaces, often used in combination with TMCs.

1,1'-Hexamethylene bis-[5-(4-chloro-phenyl)-biguanide] diacetate see Chlorhexidine diacetate monohydrate *BioChemica* Page 203
Hexamethylene pararosaniline chloride see Crystal violet (C.I. 42555) Page 247

Hexaminecobalt(III) chloride Molecular biology grade

B

Cobalthexammine trichloride

$Cl_3CoH_{18}N_6$
 $M = 267.48$ g/mol
CAS-No.: 10534-89-1
HS-No.: 28273930
EC-No.: 234-103-9

Storage: RT

Warning
H319-H315-H335
P305+P351+P338-P261



Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
pH (0.1 M; H₂O; 25°C) 3 - 6
Phosphatases not detectable

Order-No.	Quantity
A3492,0005	5 g
A3492,0010	10 g
A3492,0025	25 g

Literature: (1) Hanahan, D. (1983) *J. Mol. Biol.* **166**, 557-580

Examination of the transformation of *E. coli* with plasmids.

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*. 2nd Edition. Page 1.76-81. Cold Spring Harbor Laboratory Press. Cold Spring Harbor, New York.

iso-Hexane (*n*-Hexane < 5 %)**2-Methyl pentane**

Boiling point 60°C
 Density (d 20°C/4°C) .. 0.65
 Melting point -154°C

C_6H_{14}
 $M = 86.18$ g/mol
 CAS-No.: 107-83-5
 HS-No.: 29011000
 EC-No.: 203-523-4

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1208
 WGK: 1
 Danger
 H336-H315-H304-H411-H225
 P301+P310-P273-P302+P352-P233-
 P331-P403+P235

**iso-Hexane Residue analysis grade**

C

Specification:

Assay (HPLC) min. 95 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.01 %
 GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
 GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1765,2500	2.5 L
A1765,25004	4 x 2,5 L

iso-Hexane HPLC grade

C

Specification:

Assay (HPLC) min. 95 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.01 %

A (1 cm/water HPLC grade)
 210 nm max. 0.3
 220 nm max. 0.15
 230 nm max. 0.1
 240 nm max. 0.05

Order-No.	Quantity
A1766,1000	1 L
A1766,10006	6 x 1 L
A1766,2500	2.5 L
A1766,25004	4 x 2,5 L

iso-Hexane Fluorescence grade

C

Specification:

Assay (HPLC) min. 95 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.01 %

A (1 cm/water HPLC grade)
 210 nm max. 0.3
 220 nm max. 0.15
 230 nm max. 0.1

Fluorescence (Quinine)
 254 nm max. 1ppb
 365 nm max. 1ppb

Order-No.	Quantity
A2365,1000	1 L
A2365,2500	2.5 L

iso-Hexane p. A.

C

Specification:

Purity C_6H_{14} -Isomers (GC) min. 95 %
 Assay max. 0.0005 meq/g
 Non-volatile matter max. 0.001 %
 Aromates (as Benzene) max. 0.01 %
 Sulfur compounds (as S) max. 0.0005 %

n-Hexane (GC) max. 5 %
 Water (K.F.) max. 0.01 %
 Ca max. 0.00002 %
 Cu max. 0.000002 %
 Fe max. 0.00001 %

K max. 0.00001 %
 Mg max. 0.000005 %
 Na max. 0.00001 %
 Pb max. 0.000002 %
 Zn max. 0.00001 %

Order-No.	Quantity
A4201,0500	500 ml
A4201,1000	1 L
A4201,2500	2.5 L
A4201,5000	5 L

iso-Hexane pure

C

Specification:

Assay min. 95 %
 n-Hexane max. 5 %
 Cu max. 0.00001 %
 Fe max. 0.00001 %
 Pb max. 0.00001 %
 Water (K.F.) max. 0.05 %

Zn max. 0.00001 %

Order-No.	Quantity
A2820,1000	1 L
A2820,10006	6 x 1 L
A2820,2500	2.5 L
A2820,25004	4 x 2,5 L
A2820,5000	5 L

n-Hexane

Boiling point 68°C
 Density (d 25°C/4°C) .. 0.657
 Melting point -94°C
 n 20°C/D 1.375

C_6H_{14}
 $M = 86.18$ g/mol
 CAS-No.: 110-54-3
 HS-No.: 29011000
 EC-No.: 203-777-6

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1208
 Danger
 H315-H336f-H304-H373-H411-H225-
 H336
 P331-P210-P403+P235-P302+P352-
 P301+P310-P240-P273

**n-Hexane Residue analysis grade (95 % n-Hexane)**

C

Specification:

Assay (HPLC) min. 95 %
 Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.0005 %
 Water (K.F.) max. 0.02 %
 GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
 GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1621,2500	2.5 L
A1621,25004	4 x 2,5 L

***n*-Hexane HPLC grade (95 % *n*-Hexan)**

C

Specification:

Specification.			
Assay (HPLC)	min. 95 %	A (1 cm/water HPLC grade)	
Acidity/Alkalinity	max. 0.0005 meq/g	200 nm	max. 0.3
Non-volatile matter	max. 0.0005 %	210 nm	max. 0.15
Water (K.F.)	max. 0.01 %	220 nm	max. 0.05
		230 nm	max. 0.01
		240 nm	max. 0.005

Order-No.	Quantity
A1623,1000	1 L
A1623,10006	6 x 1 L
A1623,2500	2.5 L
A1623,25004	4 x 2,5 L

***n*-Hexane Fluorescence grade (95 % *n*-Hexane)**

C

Specification:

Assay (HPLC)	min. 95 %	A (1 cm/water HPLC grade)	Fluorescence (Quinine)
Acidity/Alkalinity	max. 0.0005 meq/g	200 nm	max. 1ppb
Non-volatile matter	max. 0.0005 %	210 nm	max. 1ppb
Water (K.F.)	max. 0.01 %	230 nm	max. 0.01

Order-No.	Quantity
A1764,1000	1 L
A1764,2500	2.5 L

***n*-Hexane dried, p. A.**

C

Specification:

Assay (HPLC)	min. 95 %
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.005 %

Order-No.	Quantity
A2382,0500	500 ml
A2382,1000	1 L
A2382,10006	6 x 1 L

◆ This product contains molecular sieve as a drying agent!

***n*-Hexane p. A.**

C

Specification:

Assay (HPLC)	min. 95 %	K	max. 0.00001 %
Acidity/Alkalinity	max. 0.0005 meq/g	Mg	max. 0.000005 %
Non-volatile matter	max. 0.001 %	Na	max. 0.00001 %
Total P	max. 0.00001 %	Pb	max. 0.000002 %
Total S	max. 0.001 %	Zn	max. 0.00001 %
Total Si	max. 0.000005 %		
Aromatic hydrocarbons	max. 0.01 %		
Water (K.F.)	max. 0.02 %		
Ca	max. 0.00002 %		
Cu	max. 0.000002 %		
Fe	max. 0.00001 %		

Order-No.	Quantity
A1620,0500	500 ml
A1620,1000	1 L
A1620,10006	6 x 1 L
A1620,2500	2.5 L
A1620,25004	4 x 2,5 L
A1620,5000	5 L
A1620,9010	10 L
A1620,9025BK	25 L
A1620,9025PE	25 L

***n*-Hexane pure**

C

Specification:

Assay (HPLC)	min. 95 %
Water (K.F.)	max. 0.1 %

Order-No.	Quantity
A0657,1000	1 L
A0657,10006	6 x 1 L
A0657,2500	2.5 L
A0657,25004	4 x 2,5 L
A0657,5000	5 L
A0657,9010	10 L
A0657,9025BK	25 L
A0657,9025PE	25 L

Hexanedioic acid see Adipic acid for synthesis Page 68

(2R,3R,4R,5R)-Hexane-1,2,3,4,5,6-hexol see D(-)-Mannitol Page 515

1-Hexanesulfonic acid sodium salt anhydrous IPC grade

C

$C_6H_{13}NaO_3S$	Storage: RT
$M = 188.22$ g/mol	LGK: 10 - 13
CAS-No.: 2832-45-3	Disposal: 28
HS-No.: 29041000	
EC-No.: 220-601-3	

Specification:

Assay (titr.)	min. 99 %	A (1 cm/0.005 M in water HPLC grade)	
Alkylbromide	max. 0.01 %	200 nm	max. 0.15
Loss on drying	max. 1 %	220 nm	max. 0.06
Solubility (5 %; H ₂ O)	clear, colorless		

Order-No.	Quantity
A3729,0005	5 g
A3729,0010	10 g
A3729,0025	25 g

Literature: (1) Hancock, W.S. et al. (1978) *J. Chromatogr.* **161**, 291-298(2) Hancock, W.S. & Harding, D.R.K. (1982) *J. Chromatogr.* **228**, 273-278

Amino acids analysis by HPLC and Hexane sulfonate.

Amino acids analysis by HPLC and different ion pair reagents.

1-Hexanesulfonic acid sodium salt monohydrate IPC grade

C

$C_6H_{13}NaO_3S \cdot H_2O$
 $M = 206.24 \text{ g/mol}$
CAS-No.: 2832-45-3
HS-No.: 29041000
EC-No.: 220-601-3

Storage: RT
LGK: 10 - 13
Disposal: 28

Specification:

Assay (titr.) min. 99 %
Alkylbromide max. 0.01 %
Solubility (5 %; H_2O) clear, colorless

A (1 cm/0.005 M in water HPLC grade)
200 nm max. 0.15
220 nm max. 0.06

Order-No.	Quantity
A1014,0005	5 g
A1014,0010	10 g
A1014,0025	25 g

Literature: (1) Hancock, W.S. *et al.* (1978) *J. Chromatogr.* **161**, 291-298
(2) Hancock, W.S. & Harding, D.R.K. (1982) *J. Chromatogr.* **228**, 273-278

Amino acids analysis by HPLC and Hexane sulfonate.
Amino acids analysis by HPLC and different ion pair reagents.

n-Hexyl-β-D-maltoside BioChemica

B

Classification: nonionic detergent

$C_{18}H_{34}O_{11}$
 $M = 426.40 \text{ g/mol}$
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 99 %
 $\alpha 20^\circ C/D; 1 \%, H_2O$ +62° - +64°
pH (1 %; H_2O) 6.0 - 7.0

A (1 cm/1 % in water HPLC grade)
260 nm max. 0.04

Order-No.	Quantity
A6820,0250	250 mg
A6820,0001	1 g
A6820,0005	5 g

Hexylene glycol see (±)-2-Methyl-2,4-pentandiol BioChemica Page 541

rHu HGF



B

recombinant Human Hepatocyte Growth
Factor
lyophilized without additives
from High-5 Insect cells (BT1-Tn-5B1-4)

HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin (LAL test) max. 1.0 EU/μg
Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8533,0002	2 μg
A8533,0010	10 μg

Comment: Avoid repeated freeze/thaw cycles.

HHDK see Derma-ExitusPlus™ Page 269

High Density Lipoprotein see Lipoprotein, high density (HDL), human Page 490

H-His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Lys-Tyr-Leu-Asp-Ser-Arg-Arg-Ala-Gln-Asp-Phe-Val-Gln-Trp-Leu-Met-Asn-Thr-Lys-Arg-Asn-Lys-Asn-Ile-Ala-OH see Glucagon 1-37 Page 375

Histamine dihydrochloride

2-(4-Imidazolyl) ethylamine
dihydrochloride

$C_8H_{13}N_3 \cdot 2HCl$
 $M = 187.07 \text{ g/mol}$
CAS-No.: 56-92-8
HS-No.: 29332990
EC-No.: 200-298-4

Storage: RT

hygroscopic
Danger
H335-H315-H317-H334-H319
P284-P305+P351+P338-P280-
P302+P350



Melting range 249 - 252°C

Histamine dihydrochloride BioChemica

B

WGK: 2

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 0.5 %
Sulfated ash max. 0.1 %
Sulfate max. 0.1 %

Order-No.	Quantity
A4887,0005	5 g
A4887,0010	10 g
A4887,0025	25 g

Histamine dihydrochloride pure Ph. Eur.

C

WGK: 2

Specification:

Assay (titr.) 98.5 - 101.0 %
Appearance of solution complies
Identity complies
Loss on drying max. 0.5 %
Sulfated ash max. 0.1 %
pH 2.85 - 3.60
Histidine complies
Sulfate max. 0.1 %

Order-No.	Quantity
A5355,0005	5 g
A5355,0025	25 g
A5355,0100	100 g

L-Histidine base

L-2-Amino-3-(imidazolyl-4)-propionic acid, *L*-3-Imidazole-4-yl-alanine

$C_6H_9N_3O_2$
 $M = 155.16$ g/mol
 CAS-No.: 71-00-1
 HS-No.: 29332990
 EC-No.: 200-745-3

Storage: RT
 LGK: 10 - 13

WGK: nwg

Melting point 270 - 275°C (dec.)
 Solubility (25°C) 42 g/L (H₂O)

L-Histidine base Cell culture grade

B

Specification:

Pyrogen test complies
 Assay (titr.) min. 99 %
 α 20°C/D; 10 %, HCl +11.8° - +12.8°
 pH (2 %; H₂O) 7.0 - 8.5

Other amino acids max. 0.5 %
 Ammonium max. 0.1 %
 Chloride max. 0.02 %
 Sulfate max. 0.02 %

As max. 0.0001 %
 Fe max. 0.001 %
 Pb max. 0.001 %

Order-No.	Quantity
A3719,0050	50 g
A3719,0100	100 g
A3719,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Histidine base BioChemica

B

Specification:

Assay (titr.) min. 99 %
 α 20°C/D; 10 %, HCl +11.8° - +12.8°
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 Other amino acids max. 0.5 %

Ammonium max. 0.1 %
 Chloride max. 0.02 %
 Sulfate max. 0.02 %

Order-No.	Quantity
A3738,0050	50 g
A3738,0100	100 g
A3738,0500	500 g
A3738,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Histidine base pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %
 α 20°C/D; 11 %, HCl 120 g/L; calc. on dried subst. +11.4° - +12.4°
 α 25°C/D; 11 %, 6 M HCl; calc. on dried subst. +12.6° - +14.0°
 Appearance of solution complies

Chromatogr. purity complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying max. 0.2 %
 Sulfated ash max. 0.1 %
 pH (2 %; H₂O) 7.0 - 8.5

Other amino acids max. 0.5 %
 Ammonium max. 0.02 %
 Chloride max. 0.02 %
 Sulfate max. 0.03 %
 Fe max. 0.001 %

Order-No.	Quantity
A1341,0050	50 g
A1341,0100	100 g
A1341,0500	500 g
A1341,1000	1 kg
A1341,10006	6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Histidine hydrochloride monohydrate

4-Imidazolyl-*L*-alanine, *L*-2-Amino-3-(imidazolyl-4)-propionic acid hydrochloride monohydrate

$C_6H_9N_3O_2 \cdot HCl \cdot H_2O$
 $M = 209.63$ g/mol
 CAS-No.: 5934-29-2
 HS-No.: 29332990
 EC-No.: 211-438-9

Storage: RT
 LGK: 10 - 13

WGK: nwg

Solubility (25°C) 400 g/L (H₂O)

L-Histidine hydrochloride monohydrate Cell culture grade

B

Specification:

Pyrogen test complies
 Assay (HPLC) min. 99 %
 α 20°C/D; 10 %, HCl +9.2° - +10.6°
 pH (5 %; H₂O) 3.0 - 5.0
 Other amino acids max. 0.5 %

Ammonium max. 0.1 %
 Sulfate max. 0.02 %
 As max. 0.0001 %
 Fe max. 0.001 %
 Pb max. 0.001 %

Order-No.	Quantity
A3726,0050	50 g
A3726,0100	100 g
A3726,0500	500 g
A3726,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Histidine hydrochloride monohydrate BioChemica

B

Specification:

Assay (HPLC) min. 99 %
 α 20°C/D; 10 %, HCl +9.2° - +10.6°
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 Other amino acids max. 0.5 %

Ammonium max. 0.1 %
 Sulfate max. 0.02 %

Order-No.	Quantity
A3733,0050	50 g
A3733,0100	100 g
A3733,0500	500 g
A3733,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Histidine hydrochloride monohydrate pure Ph. Eur.

C

Specification:

Assay (HPLC) 98.5 - 101.0 %
 α 20°C/D; 11 %, HCl 120 g/L; calc. on dried subst. +9.2° - +10.6°
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies

Loss on drying 7.0 - 10.0 %
 Sulfated ash max. 0.1 %
 pH (5 %; H₂O) 3.0 - 5.0
 Other amino acids max. 0.5 %
 Ammonium max. 0.02 %
 Sulfate max. 0.03 %

Fe max. 0.001 %

Order-No.	Quantity
A1591,0050	50 g
A1591,0100	100 g
A1591,0500	500 g
A1591,1000	1 kg
A1591,10006	6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

Hoechst 33342 see Bisbenzimidazole H33342 *BioChemica* Page 146
 Homidium bromide see Ethidium bromide *BioChemica* Page 338
 L-Homoglutamic acid see L-2-Aminoadipic acid *BioChemica* Page 85

Homoorientin HPLC grade

B

Isoorientin, 6-C-Glucoluteolin
 from *Adonis vernalis*

$C_{21}H_{20}O_{11}$
 $M = 448.38$ g/mol
 CAS-No.: 4261-42-1
 HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.
A6755,0005
A6755,0010

Quantity
 5 mg
 10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

HPBCD see 2-Hydroxypropyl- β -cyclodextrin Page 428
 HRP-Stabilizer see Immunoassay Buffer Page 446

HT2 Toxin *BioChemica*

B

semisynthetic from T2 Toxin of Fusarium
tricinctum

$C_{22}H_{32}O_8$
 $M = 424.48$ g/mol
 CAS-No.: 26934-87-2
 HS-No.: 29329900

Storage: -20°C

Class / PG: 6.1/1
 UN3462
 Danger
 H335-H310-H300-H315-H319-H330
 P280-P264-P305+P351+P338-
 P302+P350-P260-P284



Melting point 151 - 152°C

Specification:

Assay approx. 98 %
 Solubility (5 mg/ml Dichloromethane)
 clear, colorless

Order-No.
A7855,0001
A7855,0005

Quantity
 1 mg
 5 mg

Comment: HT2-Toxin is a metabolite of the mycotoxin T2-Toxin, belonging to the group of the Trichothecenes. This metabolite is semisynthetically derived from T2-Toxin. The physiological effects of HT2-Toxin, namely induction of apoptosis, are comparable to T2-Toxin.

Hyaluronidase

[E.C. 3.2.1.35], *Mucinase*
 from ovine testes

CAS-No.: 37326-33-3
 HS-No.: 35079090
 EC-No.: 253-464-3

Storage: -20°C
 LGK: 10 - 13

Hyaluronidase Grade I

B

salt-free, freeze-dried

Specification:

Activity min. 500 U/mg ma-
 terial

Order-No.
A1937,0250
A1937,0001
A1937,0005

Quantity
 250 mg
 1 g
 5 g

Hyaluronidase Grade II

B

salt-free, freeze-dried

Specification:

Activity min. 220 U/mg ma-
 terial
 Microbial count max. 5000/g
 pH (0.3 %, H₂O) approx. 4.0

Order-No.
A7490,0250
A7490,0001
A7490,0005

Quantity
 250 mg
 1 g
 5 g

Hybridization Solution

B

HS-No.: 38220000

Storage: 2-8°C

◆ **Application**

- Southern and Northern blots
- radioactively and non-radioactively labeled samples
- both DNA and oligonucleotide probes
- For rapid (1-2 hrs), high-sensitive hybridization reactions

Order-No.
A3728,0100

Quantity
 100 ml

Literature: (1) Wahl, G.M. *et al.* (1987) *Methods Enzymol.* **152**, 399-407

Molecular hybridization of immobilized nucleic acids.

Comment: The *Hybridization Solution* enables shorter hybridization times and decreases backgrounds. Therefore, low-copy RNA species on Northern blots and single-copy genes on Southern blots can be detected within 1 - 2 hours of hybridization using radioactively or non-radioactively labeled probes (compared to 12 - 24 hours with standard buffers).

Application: The *Hybridization Solution* can be used for Southern blots, Northern blots or colony hybridizations. The only difference between the protocols is the incubation temperature (use 68°C for Northern and 60°C for Southern).

Hydrazide-biotin see (+)-Biotin hydrazide Page 141

Hydrazine - Reagent

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13Warning
H302-H332-H317-H312
P309+P311-P201**Composition:**Copper(II) sulfate · 5H₂O ... 6 mg/L
Hydrazine sulfate ... 600 mg/L

Order-No.	Quantity
A3233,1000	1 L
A3233,10006	6 x 1 L
A3233,2500	2.5 L

Hydrindantin dihydrate pure

B

2,2'-Dihydroxy-(2,2'-bi-indan)-1,1',3,3'-tetrone

C₁₈H₁₀O₆ · 2H₂O
M = 358.30 g/mol
CAS-No.: 5950-69-6
HS-No.: 29144090
EC-No.: 227-713-1Storage: RT
LGK: 10-13
Disposal: 3

WGK: 2

Specification:Assay (from C) min. 99 %
Identity (IR) complies
Loss on drying (105°C) 9.0 - 11.0 %

Order-No.	Quantity
A5368,0010	10 g
A5368,0025	25 g
A5368,0100	100 g

Hydrobromic acid 48 %

HBr

1 L 1.49 kg
Boiling point 126°CBrH
M = 80.92 g/mol
CAS-No.: 10035-10-6
HS-No.: 28111910Storage: RT
LGK: 8 B
Disposal: 12Class / PG: 8/II
UN1788
WGK: 1
Danger
H335-H314
P309+P311-P280-P305+P351+P338-
P403+P233-P301+P330+P331-P273**Hydrobromic acid 48 % p. A.**

C

Specification:Assay (titr.) min. 47 %
Non-volatile matter max. 0.01 %
Chloride max. 0.05 %
Phosphate max. 0.002 %
Sulfate max. 0.01 %Fe max. 0.0005 %
Pb max. 0.001 %

Order-No.	Quantity
A2561,0250	250 ml
A2561,0500	500 ml
A2561,1000	1 L
A2561,10006	6 x 1 L

Hydrobromic acid 48 % pure

C

Specification:Assay (titr.) min. 47 %
Heavy metals (as Pb) max. 0.001 %
Non-volatile matter max. 0.02 %
Chloride max. 0.05 %
Phosphate max. 0.005 %

Sulfate max. 0.02 %

Order-No.	Quantity
A6929,2500	2.5 L
A6929,25004	4 x 2.5 L
A6929,5000	5 L
A6929,9010	10 L

Hydrobromic acid approx. 48 % Technical grade

C

Specification:Assay (titr.) approx. 47 %
Fe max. 0.002 %

Order-No.	Quantity
A6926,5000	5 L
A6926,9010	10 L
A6926,9025	25 L

Hydrochloric acid (concentrations: ≥ 25%)ClH
M = 36.46 g/mol
CAS-No.: 7647-01-0
HS-No.: 28061000
EC-No.: 231-595-7Storage: RT
LGK: 8 B
Disposal: 12Class / PG: 8/II
UN1789
WGK: 1
Danger
H290-H314-H335
P280-P305+P351+P338-
P301+P330+P331**Hydrochloric acid 37 % ultrapure**

C

Specification:Assay (titr.) 36 - 38 %
Total P max. 0.2 ppm
Total S max. 0.5 ppm
Ca max. 0.2 ppm
Cr max. 0.005 ppm
Cu max. 0.01 ppm
Fe max. 0.1 ppmK max. 0.2 ppm
Mg max. 0.02 ppm
Na max. 1 ppm
Ni max. 0.01 ppm
Pb max. 0.005 ppm
Zn max. 0.05 ppm

Order-No.	Quantity
A2427,0250	250 ml
A2427,0500	500 ml
A2427,1000	1 L
A2427,10006	6 x 1 L
A2427,2500	2.5 L
A2427,25004	4 x 2.5 L

Hydrochloric acid 37 % p. A.

C

Specification:

Assay (titr.)	min. 37 %
Bromide	max. 0.005 %
Phosphate	max. 0.00005 %
Sulfate	max. 0.0001 %
Al	max. 0.000005 %
As	max. 0.000001 %
Ca	max. 0.00005 %
Fe	max. 0.00002 %
Na	max. 0.00005 %
Ni	max. 0.000002 %
Pb	max. 0.000002 %
Zn	max. 0.000005 %

Order-No.	Quantity
A0659,1000GL	1 L
A0659,10006GL	6 x 1 L
A0659,1000PE	1 L
A0659,10006PE	6 x 1 L
A0659,2500GL	2.5 L
A0659,25004GL	4 x 2.5 L
A0659,2500PE	2.5 L
A0659,25004PE	4 x 2.5 L
A0659,5000	5 L
A0659,9010	10 L
A0659,9025	25 L

Hydrochloric acid 37 % pure Ph. Eur., NF

C

Specification:

Assay (titr.)	36.5 - 38.0 %	Sulfate	max. 0.002 %
Appearance of substance	complies	Sulfite	complies
Free bromine	complies		
Free chlorine	max. 0.0004 %		
Heavy metals (as Pb)	max. 0.0002 %		
Identity	complies		
Non-volatile matter	max. 0.01 %		
Residue on ignition	max. 0.008 %		
Bromide, Iodide	complies		

Order-No.	Quantity
A0625,1000	1 L
A0625,10006	6 x 1 L
A0625,2500	2.5 L
A0625,25004	4 x 2.5 L
A0625,5000	5 L
A0625,9010	10 L
A0625,9025	25 L

Hydrochloric acid 37 % Technical grade

C

Specification:

Assay (titr.)	approx. 37 %

Order-No.	Quantity
A1437,2500	2.5 L
A1437,25004	4 x 2.5 L
A1437,5000	5 L
A1437,9010	10 L
A1437,9025	25 L

Hydrochloric acid 32 % p. A.

C

Specification:

Assay (titr.)	min. 32 %	Ni	max. 0.000002 %
Bromide	max. 0.005 %	Pb	max. 0.000002 %
Phosphate	max. 0.00005 %	Zn	max. 0.000005 %
Sulfate	max. 0.0001 %		
Al	max. 0.000005 %		
As	max. 0.000001 %		
Ca	max. 0.00005 %		
Fe	max. 0.00002 %		
Na	max. 0.00005 %		

Order-No.	Quantity
A2078,1000	1 L
A2078,10006	6 x 1 L
A2078,2500	2.5 L
A2078,25004	4 x 2.5 L
A2078,5000	5 L
A2078,9010	10 L
A2078,9025	25 L

Hydrochloric acid 32 % pure

C

Specification:

Assay (titr.)	min. 32 %
Free chlorine	max. 0.0004 %
Heavy metals (as Pb)	max. 0.0002 %
Identity	complies
Residue after evaporation	max. 0.01 %
Sulfate	max. 0.002 %
As	max. 0.0002 %

Order-No.	Quantity
A0696,1000	1 L
A0696,10006	6 x 1 L
A0696,2500	2.5 L
A0696,25004	4 x 2.5 L
A0696,5000	5 L
A0696,9010	10 L
A0696,9025	25 L

Hydrochloric acid 32 % Technical grade

C

Specification:

Assay (titr.)	approx. 32 %

Order-No.	Quantity
A1554,2500	2.5 L
A1554,25004	4 x 2.5 L
A1554,5000	5 L
A1554,9010	10 L
A1554,9025	25 L

Hydrochloric acid 30 % ultrapure

C

Specification:

Assay (titr.)	min. 30 %	Fe	max. 0.1 ppm
Total P	max. 0.2 ppm	K	max. 0.2 ppm
Total S	max. 0.5 ppm	Mg	max. 0.02 ppm
Total Si	max. 0.5 ppm	Na	max. 1 ppm
Ca	max. 0.2 ppm	Ni	max. 0.005 ppm
Cr	max. 0.005 ppm	Pb	max. 0.001 ppm
Cu	max. 0.01 ppm	Zn	max. 0.02 ppm

Order-No.	Quantity
A2966,0250	250 ml
A2966,0500	500 ml
A2966,1000	1 L
A2966,10006	6 x 1 L
A2966,2500	2.5 L
A2966,25004	4 x 2.5 L

Hydrochloric acid 30 % p. A.

C

Specification:

Assay (titr.)	min. 30 %	Fe	max. 0.00002 %
Bromide	max. 0.005 %	Na	max. 0.00005 %
Phosphate	max. 0.00005 %	Ni	max. 0.000002 %
Sulfate	max. 0.0001 %	Pb	max. 0.000002 %
Al	max. 0.000005 %	Zn	max. 0.000005 %
As	max. 0.000001 %		
Ca	max. 0.00005 %		

Order-No.	Quantity
A3521,1000	1 L
A3521,10006	6 x 1 L
A3521,2500	2.5 L
A3521,25004	4 x 2,5 L
A3521,5000	5 L
A3521,9010	10 L

Hydrochloric acid 30 % pure

C

Specification:

Assay (titr.)	min. 30 %
Free chlorine	max. 0.0004 %
Heavy metals (as Pb)	max. 0.0002 %
Identity	complies
Residue after evaporation	max. 0.01 %
Sulfate	max. 0.002 %
As	max. 0.0002 %

Order-No.	Quantity
A3190,1000	1 L
A3190,10006	6 x 1 L
A3190,2500	2.5 L
A3190,25004	4 x 2,5 L
A3190,5000	5 L
A3190,9010	10 L
A3190,9025	25 L

Hydrochloric acid approx. 30 % for regeneration of desalination equipment

C

Specification:

Assay (titr.)	approx. 30 %	Fe	max. 0.001 %
Density	approx. 1.15		
Free chlorine	max. 0.002 %		
Org. chlorine compounds	max. 0.002 %		

Order-No.	Quantity
A2648,5000	5 L
A2648,9010	10 L
A2648,9025	25 L

Hydrochloric acid 25 % p. A.

C

Specification:

Assay (titr.)	min. 25 %	Fe	max. 0.00002 %
Bromide	max. 0.005 %	Na	max. 0.00005 %
Phosphate	max. 0.00005 %	Ni	max. 0.000002 %
Sulfate	max. 0.0001 %	Pb	max. 0.000002 %
Al	max. 0.000005 %	Zn	max. 0.000005 %
As	max. 0.000001 %		
Ca	max. 0.00005 %		

Order-No.	Quantity
A0658,1000	1 L
A0658,10006	6 x 1 L
A0658,2500	2.5 L
A0658,25004	4 x 2,5 L
A0658,5000	5 L
A0658,9010	10 L

Hydrochloric acid 25 % pure

C

Specification:

Assay (titr.)	min. 25 %
Free chlorine	max. 0.0004 %
Heavy metals (as Pb)	max. 0.0002 %
Identity	complies
Residue after evaporation	max. 0.01 %
Sulfate	max. 0.002 %
As	max. 0.0002 %

Order-No.	Quantity
A0694,1000	1 L
A0694,10006	6 x 1 L
A0694,2500	2.5 L
A0694,25004	4 x 2,5 L
A0694,5000	5 L
A0694,9010	10 L
A0694,9025	25 L

Hydrochloric acid 25 % Technical grade

C

Specification:

Assay (titr.)	approx. 25 %

Order-No.	Quantity
A5356,5000	5 L
A5356,9010	10 L
A5356,9025	25 L

Hydrochloric acid (concentrations: 10 - < 25 %)

CIH
M = 36.46 g/mol
CAS-No.: 7647-01-0
HS-No.: 28061000
EC-No.: 231-595-7

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/II
UN1789
WGK: 1
Warning
H319-H290-H315-H335
P314-P301+P330+P331-
P305+P351+P338



Hydrochloric acid R1 Ph. Eur.



C

Composition:

HCl	250 g/L

Order-No.	Quantity
A8023,1000	1 L
A8023,2500	2.5 L

Hydrochloric acid 20 % p. A.

C

Specification:

Assay (titr.)	min. 20 %	Ca	max. 0.00005 %
Bromide	max. 0.005 %	Fe	max. 0.00002 %
Phosphate	max. 0.00005 %	Na	max. 0.00005 %
Sulfate	max. 0.0001 %	Ni	max. 0.000002 %
Al	max. 0.000005 %	Pb	max. 0.000002 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A3397,1000	1 L
A3397,10006	6 x 1 L
A3397,2500	2.5 L
A3397,25004	4 x 2,5 L
A3397,5000	5 L

Hydrochloric acid 20 % pure

C

Specification:

Assay (titr.)	min. 20 %	As	max. 0.0002 %
Free chlorine	max. 0.0004 %		
Heavy metals (as Pb)	max. 0.0002 %		
Identity	complies		
Res. after evaporation	max. 0.01 %		
Sulfate	max. 0.002 %		

Order-No.	Quantity
A3169,1000	1 L
A3169,10006	6 x 1 L
A3169,2500	2.5 L
A3169,25004	4 x 2,5 L
A3169,5000	5 L

Hydrochloric acid 18.5 % for regeneration of desalination equipment



C

Specification:

Assay (titr.)	approx. 18.5 %	Fe	max. 0.001 %
Density	approx. 1.09		
Free chlorine	max. 0.002 %		
Org. chlorine compounds	max. 0.002 %		

Order-No.	Quantity
A2615,5000	5 L
A2615,9010	10 L
A2615,9025	25 L

Hydrochloric acid 15 % p. A.

C

Specification:

Assay (titr.)	min. 15 %	As	max. 0.000001 %	Pb	max. 0.000002 %
Bromide	max. 0.005 %	Ca	max. 0.00005 %	Zn	max. 0.000005 %
Phosphate	max. 0.00005 %	Fe	max. 0.00002 %		
Sulfate	max. 0.0001 %	Na	max. 0.00005 %		
Al	max. 0.000005 %	Ni	max. 0.000002 %		

Order-No.	Quantity
A2663,1000	1 L
A2663,2500	2.5 L
A2663,25004	4 x 2,5 L
A2663,5000	5 L

Hydrochloric acid 15 % pure

C

Specification:

Assay (titr.)	min. 15 %	As	max. 0.0002 %
Free chlorine	max. 0.0004 %		
Heavy metals (as Pb)	max. 0.0002 %		
Identity	complies		
Res. after evaporation	max. 0.01 %		
Sulfate	max. 0.002 %		

Order-No.	Quantity
A2483,1000	1 L
A2483,10006	6 x 1 L
A2483,2500	2.5 L
A2483,25004	4 x 2,5 L
A2483,5000	5 L

Hydrochloric acid 10 % p. A.

C

Specification:

Assay (titr.)	min. 10 %	Ca	max. 0.00005 %
Bromide	max. 0.005 %	Fe	max. 0.00002 %
Phosphate	max. 0.00005 %	Na	max. 0.00005 %
Sulfate	max. 0.0001 %	Ni	max. 0.000002 %
Al	max. 0.000005 %	Pb	max. 0.000002 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A2672,1000	1 L
A2672,10006	6 x 1 L
A2672,2500	2.5 L
A2672,25004	4 x 2,5 L
A2672,5000	5 L

Hydrochloric acid 10 % pure Ph. Eur., NF

C

Specification:

Assay (titr.)	9.5 - 10.0 %	Sulfite	max. 0.001 %
Appearance of substance	complies		
Free bromine	complies		
Free chlorine	max. 0.0001 %		
Heavy metals (as Pb)	max. 0.0002 %		
Identity	complies		
Non-volatile matter	max. 0.01 %		
Residue on ignition	max. 0.0002 %		
Sulfate	max. 0.0005 %		

Order-No.	Quantity
A1710,1000	1 L
A1710,10006	6 x 1 L
A1710,2500	2.5 L
A1710,25004	4 x 2,5 L
A1710,5000	5 L
A1710,9010	10 L
A1710,9025	25 L

Hydrochloric acid 10 % Technical grade

C

Specification:

Assay (titr.)	approx. 10 %

Order-No.	Quantity
A2511,2500	2.5 L
A2511,25004	4 x 2,5 L
A2511,5000	5 L
A2511,9010	10 L
A2511,9025	25 L

Hydrochloric acid (concentrations: < 10 %)

CIH
M = 36.46 g/mol
CAS-No.: 7647-01-0
HS-No.: 28061000
EC-No.: 231-595-7

Storage: RT
LGK: 8 B
Disposal: 12

WGK: nwg
Warning
H290
P406-P390



Hydrochloric acid 6 % pure

C

Class / PG: 8/II
UN1789

Specification:

Assay (titr.)	min. 6 %	Al	max. 0.0005 %	Na	max. 0.005 %	Order-No.	Quantity
Bromide	max. 0.01 %	As	max. 0.0001 %	Ni	max. 0.0005 %	A1778,1000	1 L
Phosphate	max. 0.0001 %	Ca	max. 0.001 %	Pb	max. 0.0001 %	A1778,2500	2.5 L
Sulfate	max. 0.0005 %	Fe	max. 0.0002 %	Zn	max. 0.0005 %	A1778,5000	5 L

Hydrochloric acid 5 % p.A.

C

Class / PG: 8/II
UN1789

Specification:

Assay (titr.)	min. 5 %	As	max. 0.000001 %	Pb	max. 0.000002 %	Order-No.	Quantity
Bromide	max. 0.005 %	Ca	max. 0.00005 %	Zn	max. 0.000005 %	A5171,1000	1 L
Phosphate	max. 0.00005 %	Fe	max. 0.00002 %			A5171,10006	6 x 1 L
Sulfate	max. 0.0001 %	Na	max. 0.00005 %			A5171,2500	2.5 L
Al	max. 0.000005 %	Ni	max. 0.000002 %			A5171,5000	5 L

Hydrochloric acid 5 % pure

C

Class / PG: 8/II
UN1789

Specification:

Assay (titr.)	min. 5 %	Al	max. 0.0005 %	Na	max. 0.005 %	Order-No.	Quantity
Bromide	max. 0.01 %	As	max. 0.0001 %	Ni	max. 0.0005 %	A1726,1000	1 L
Phosphate	max. 0.0001 %	Ca	max. 0.001 %	Pb	max. 0.0001 %	A1726,2500	2.5 L
Sulfate	max. 0.0005 %	Fe	max. 0.0002 %	Zn	max. 0.0005 %	A1726,5000	5 L

Hydrochloric acid 3.2 % pure

C

Class / PG: 8/III
UN1789

Specification:

Assay (titr.)	min. 3.2 %	Al	max. 0.0005 %	Na	max. 0.005 %	Order-No.	Quantity
Bromide	max. 0.01 %	As	max. 0.0001 %	Ni	max. 0.0005 %	A2499,1000	1 L
Phosphate	max. 0.00005 %	Ca	max. 0.001 %	Pb	max. 0.0001 %	A2499,2500	2.5 L
Sulfate	max. 0.0005 %	Fe	max. 0.0002 %	Zn	max. 0.0005 %	A2499,5000	5 L

Hydrochloric acid 1.128 % (w/v) p. A.

C

Class / PG: 8/III
UN1789

Specification:

Assay (titr.)	1.126 - 1.130 %	As	max. 0.000001 %	Pb	max. 0.000002 %	Order-No.	Quantity
Bromide	max. 0.005 %	Ca	max. 0.00005 %	Zn	max. 0.000005 %	A2768,1000	1 L
Phosphate	max. 0.00005 %	Fe	max. 0.00002 %			A2768,10006	6 x 1 L
Sulfate	max. 0.0001 %	Na	max. 0.00005 %			A2768,2500	2.5 L
Al	max. 0.000005 %	Ni	max. 0.000002 %			A2768,25004	4 x 2.5 L

Hydrochloric acid 1 % pure

C

Class / PG: 8/III
UN1789

Specification:

Assay (titr.)	min. 1 %	Ca	max. 0.001 %	Order-No.	Quantity
Bromide	max. 0.01 %	Fe	max. 0.0002 %	A1777,1000	1 L
Phosphate	max. 0.0001 %	Na	max. 0.005 %	A1777,10006	6 x 1 L
Sulfate	max. 0.0005 %	Ni	max. 0.0005 %	A1777,2500	2.5 L
Al	max. 0.0005 %	Pb	max. 0.0001 %	A1777,25004	4 x 2.5 L
As	max. 0.0001 %	Zn	max. 0.0005 %	A1777,5000	5 L

Hydrochloric acid 0.5 % pure

C

Class / PG: 8/III
UN1789**Specification:**

Assay (titr.) min. 0.5 %
 Bromide max. 0.01 %
 Phosphate max. 0.0001 %
 Sulfate max. 0.0005 %
 Al max. 0.0005 %

As max. 0.0001 %
 Ca max. 0.001 %
 Fe max. 0.0002 %
 Na max. 0.005 %
 Ni max. 0.0005 %

Pb max. 0.0001 %
 Zn max. 0.0005 %

Order-No.	Quantity
A4078,1000	1 L
A4078,10006	6 x 1 L
A4078,2500	2.5 L
A4078,5000	5 L

Hydrochloric acid (1 M) Molecular biology grade

B

HCl (1 M)

CIH
M = 36.46 g/mol
 CAS-No.: 7647-01-0
 HS-No.: 38220000
 EC-No.: 231-595-7

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/III
 UN1789
 WGK: nwg
 Warning
 H290
 P406-P390

**Specification:**

DNases/RNases/Proteases not detectable
 Assay (titr.) 1 mol/L
 Bromide max. 0.005 %
 Phosphate max. 0.00005 %
 Sulfate max. 0.0001 %

Al max. 0.000005 %
 As max. 0.000001 %
 Ca max. 0.00005 %
 Fe max. 0.00002 %
 Na max. 0.00005 %

Ni max. 0.000002 %
 Pb max. 0.000002 %
 Zn max. 0.000005 %

Order-No.	Quantity
A6578,0500	500 ml
A6578,1000	1 L

Hydrochloric acid D₁ (DCI, 20 % solution in D₂O)

C

Deuterium chloride

CID
M = 37.47 g/mol
 CAS-No.: 7698-05-7
 HS-No.: 28459010
 EC-No.: 231-715-8

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/II
 UN1789
 WGK: 1
 Warning
 H319-H335-H315
 P301+P330+P331-P305+P351+P338-
 P314

**Specification:**

Deuteration degree min. 99 %

Order-No.	Quantity
DS-21,0010	10 ml
DS-21,0050	50 ml

Hydrochloric acid - Standard volumetric solutions 8 M - 10 M (aqueous solutions)

HS-No.: 28061000

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/II
 UN1789
 WGK: 1
 Danger
 H335-H314-H290
 P305+P351+P338-P308+P313-
 P301+P330+P331

**Hydrochloric acid - Standard volumetric solution (10 M)**

C

*10 mol/L (10 N Solution)***Specification:**

Factor limits 0.995 - 1.005

Order-No.	Quantity
A5634,1000	1 L
A5634,10006	6 x 1 L
A5634,5000CT	5 L
A5634,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (8 M)

C

*8 mol/L (8 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4937,1000	1 L
A4937,10006	6 x 1 L
A4937,5000CT	5 L
A4937,5000PE	5 L

Hydrochloric acid - Standard volumetric solutions 3 M - 6 M (aqueous solutions)

HCl - Standard volumetric solutions

HS-No.: 28061000

Storage: RT
LGK: 8 BClass / PG: 8/II
UN1789
WGK: 1
Warning
H335-H315-H319
P301+P330+P331-P314-
P305+P351+P338**Hydrochloric acid - Standard volumetric solution (6 M) - mercury-free**

C

6 mol/L (6 N Solution) - mercury-free

Specification:Factor limits 0.998 - 1.002
Hg max. 0.01 ppm

Order-No.	Quantity
A2771,1000	1 L
A2771,10006	6 x 1 L
A2771,2500	2.5 L

Hydrochloric acid - Standard volumetric solution (6 M)

C

6 mol/L (6 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2538,1000	1 L
A2538,10006	6 x 1 L
A2538,5000CT	5 L
A2538,5000PE	5 L
A2538,9010	10 L

Hydrochloric acid - Standard volumetric solution (5 M)

C

5 mol/L (5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2668,1000	1 L
A2668,10006	6 x 1 L
A2668,5000CT	5 L
A2668,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (4 M)

C

4 mol/L (4 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4179,1000	1 L
A4179,10006	6 x 1 L
A4179,5000CT	5 L
A4179,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (3 M)

C

3 mol/L (3 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2677,1000	1 L
A2677,10006	6 x 1 L
A2677,5000CT	5 L
A2677,5000PE	5 L

Hydrochloric acid - Standard volumetric solutions ≤ 2.5 M (aqueous solutions)

HCl - Standard volumetric solutions

HS-No.: 38220000

Storage: RT
LGK: 8 BWGK: nwg
Warning
H290
P406-P390**Hydrochloric acid - Standard volumetric solution (2.5 M)**

C

2.5 mol/L (2.5 N Solution)

Class / PG: 8/II
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2681,1000	1 L
A2681,10006	6 x 1 L
A2681,5000CT	5 L
A2681,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (2 M)

C

2 mol/L (2 N Solution)

Class / PG: 8/II
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2533,1000	1 L
A2533,10006	6 x 1 L
A2533,5000CT	5 L
A2533,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (1 M)

C

1 mol/L (1 N Solution)

Class / PG: 8/III
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1434,1000	1 L
A1434,10006	6 x 1 L
A1434,5000CT	5 L
A1434,5000PE	5 L
A1434,9010CT	10 L
A1434,9010PE	10 L

Hydrochloric acid - Standard volumetric solution (0.5 M)

C

0.5 mol/L (0.5 N Solution)

Class / PG: 8/III
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2428,1000	1 L
A2428,10006	6 x 1 L
A2428,5000CT	5 L
A2428,5000PE	5 L
A2428,9010CT	10 L
A2428,9010PE	10 L

Hydrochloric acid - Standard volumetric solution (0.25 M)

C

0.25 mol/L (0.25 N Solution)

Class / PG: 8/III
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0534,1000	1 L
A0534,10006	6 x 1 L
A0534,5000CT	5 L
A0534,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (0.2 M)

C

0.2 mol/L (0.2 N Solution)

Class / PG: 8/III
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2434,1000	1 L
A2434,10006	6 x 1 L
A2434,5000CT	5 L
A2434,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Class / PG: 8/III
UN1789**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1305,1000	1 L
A1305,10006	6 x 1 L
A1305,5000CT	5 L
A1305,5000PE	5 L
A1305,9010CT	10 L
A1305,9010PE	10 L

Hydrochloric acid - Standard volumetric solution (0.05 M)

C

0.05 mol/L (0.05 N Solution)

Class / PG: 8/III
UN1789

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2687,1000	1 L
A2687,10006	6 x 1 L
A2687,5000CT	5 L
A2687,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (0.02 M)

C

0.02 mol/L (0.02 N Solution)

Class / PG: 8/III
UN1789

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2818,1000	1 L
A2818,10006	6 x 1 L
A2818,5000CT	5 L
A2818,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

Class / PG: 8/III
UN1789

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2425,1000	1 L
A2425,10006	6 x 1 L
A2425,5000CT	5 L
A2425,5000PE	5 L
A2425,9010CT	10 L
A2425,9010PE	10 L

Hydrochloric acid - Standard volumetric solution (0.005 M)

C

0.005 mol/L (0.005 N Solution)

Class / PG: 8/III
UN1789

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4904,1000	1 L
A4904,10006	6 x 1 L
A4904,5000CT	5 L
A4904,5000PE	5 L

Hydrochloric acid - Standard volumetric solution (0.001 M)

C

0.001 mol/L (0.001 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2527,1000	1 L
A2527,10006	6 x 1 L
A2527,5000CT	5 L
A2527,5000PE	5 L
A2527,9010CT	10 L
A2527,9010PE	10 L

Hydrochloric acid - Alcohol - Mixtures

HS-No.: 38220000

Storage: RT
LGK: 3 A

Class / PG: 3/III
UN1993
Danger
H225
P210



Hydrochloric acid-Alcohol - Mixture (0.75 % HCl)

C

Specification:

Hydrochloric acid 0.75 %

Order-No.	Quantity
A2592,1000	1 L
A2592,10006	6 x 1 L
A2592,5000	5 L

Hydrochloric acid-Alcohol - Mixture (0.25 % HCl)

C

Specification:

Hydrochloric acid 0.25 %

Order-No.	Quantity
A5039,1000	1 L
A5039,10006	6 x 1 L
A5039,5000	5 L

Hydrocortisone BioChemica

B

Cortisol, 4-Pregnene-11 β ,17 α ,21-triol-3,20-dione, 11 β ,17 α ,21-Trihydroxyprogesterone, 17-Hydroxycorticosterone

C₂₁H₃₀O₅
M = 362.42 g/mol
CAS-No.: 50-23-7
HS-No.: 29372100
EC-No.: 200-020-1

Storage: RT

WGK: 2

Melting point 212 - 217°C
Solubility (20°C) 0,28 g/L (H₂O)

Specification:

Assay (UV) 97 - 103 %
 α 20°C/D; 1 %, Dioxane +150 - +156°
Loss on drying (105°C) max. 1.0 %

Order-No.	Quantity
A8032,0001	1 g
A8032,0005	5 g
A8032,0010	10 g

Hydrofluoric acid

Boiling point (40 %) .. 112°C
Boiling point (48 %) .. 106°C
Melting point (40 %) .. -44°C
Melting point (48 %) .. -35°C

HF
M = 20.01 g/mol
CAS-No.: 7664-39-3
HS-No.: 28111100
EC-No.: 231-634-8

Storage: RT
LGK: 6.1 B
Disposal: 23

Class / PG: 8(6.1)/II
UN1790
WGK: 2
Danger
H330-H314-H300-H310
P301+P330+P331-P309-P310-P280-
P305+P351+P338-P304+P340

**Hydrofluoric acid 48 % p. A.**

C

Specification:

Assay (titr.) min. 48 %
Chloride max. 0.0001 %
Hexafluorosilicate max. 0.005 %
Phosphate max. 0.00005 %
Sulfate max. 0.0002 %
Sulfite max. 0.0002 %

Cr	 max. 0.000002 %	Pb	 max. 0.000005 %
Fe	 max. 0.00002 %	Zn	 max. 0.000005 %
K	 max. 0.00001 %		
Mg	 max. 0.00002 %		
Na	 max. 0.00002 %		
Ni	 max. 0.000002 %		

Order-No.	Quantity
A0572,0500	500 ml
A0572,1000	1 L
A0572,10006	6 x 1 L
A0572,2500	2.5 L
A0572,25004	4 x 2,5 L

Hydrofluoric acid 40 % p. A.

C

Specification:

Assay (titr.) min. 40 %
Chloride max. 0.0001 %
Hexafluorosilicate max. 0.02 %
Phosphate max. 0.00005 %
Sulfate max. 0.0002 %
Sulfite max. 0.0002 %

Cr	 max. 0.000002 %	Pb	 max. 0.000005 %
Fe	 max. 0.00002 %	Zn	 max. 0.000005 %
K	 max. 0.00001 %		
Mg	 max. 0.00002 %		
Na	 max. 0.00002 %		
Ni	 max. 0.000002 %		

Order-No.	Quantity
A2371,0500	500 ml
A2371,1000	1 L
A2371,10006	6 x 1 L
A2371,2500	2.5 L
A2371,25004	4 x 2,5 L

Hydrofluoric acid 40 % pure

C

Specification:

Assay (titr.) min. 40 %
Heavy metals (as Pb) max. 0.0005 %
Res. of ignition (as sulfate) max. 0.005 %
Chloride max. 0.002 %
Hexafluorosilicate max. 0.01 %
Sulfate max. 0.001 %
Fe max. 0.001 %

Order-No.	Quantity
A6571,0500	500 ml
A6571,1000	1 L
A6571,10006	6 x 1 L
A6571,2500	2.5 L
A6571,25004	4 x 2,5 L
A6571,5000	5 L

Hydrofluoric acid 40 - 45 % Technical grade

C

Specification:

Assay (titr.) 40 - 45 %
Hexafluorosilicate max. 0.02 %
Sulfate max. 0.01 %

Order-No.	Quantity
A3796,1000	1 L
A3796,10006	6 x 1 L
A3796,2500	2.5 L
A3796,25004	4 x 2,5 L
A3796,5000	5 L

Hydrofluoric acid 30 % pure

C

Specification:

Assay (titr.) approx. 30 %
Chloride max. 0.001 %
Hexafluorosilicate max. 0.05 %
Phosphate max. 0.001 %
Sulfate max. 0.001 %
Sulfite max. 0.001 %

Cr	 max. 0.0001 %	Pb	 max. 0.0005 %
Fe	 max. 0.0001 %	Zn	 max. 0.0005 %
K	 max. 0.0001 %		
Mg	 max. 0.0001 %		
Na	 max. 0.0001 %		
Ni	 max. 0.0001 %		

Order-No.	Quantity
A4376,0500	500 ml
A4376,1000	1 L
A4376,10006	6 x 1 L
A4376,2500	2.5 L
A4376,5000	5 L

Hydrofluoric acid 10 % p. A.

C

Specification:

Assay (titr.) min. 10 %
Chloride max. 0.0001 %
Hexafluorosilicate max. 0.005 %
Phosphate max. 0.00005 %
Sulfate max. 0.0002 %

Sulfite	 max. 0.0002 %	Na	 max. 0.00002 %
Cr	 max. 0.000002 %	Ni	 max. 0.000002 %
Fe	 max. 0.00002 %	Pb	 max. 0.000005 %
K	 max. 0.00001 %	Zn	 max. 0.000005 %
Mg	 max. 0.00002 %		

Order-No.	Quantity
A6320,0500	500 ml
A6320,1000	1 L
A6320,2500	2.5 L

Hydrofluoric acid - Standard volumetric solutions

HS-No.: 38220000

Hydrofluoric acid - Standard volumetric Solution (1 M)

1 mol/L (1 N Solution)

Storage: RT
LGK: 6.1 B
Disposal: 23

Class / PG: 8(6.1)/II
UN1790
WGK: 1
Danger
H331-H311-H301-H314
P305+P351+P338-P310-P304+P340-
P301+P330+P331-P280-P309



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2585,1000	1 L
A2585,10006	6 x 1 L
A2585,5000	5 L

Hydrofluoric acid - Standard volumetric Solution (0.5 M)

0.5 mol/L (0.5 N Solution)

Storage: RT
LGK: 6.1 B
Disposal: 23

Class / PG: 8(6.1)/III
UN2922
WGK: 1
Danger
H311-H332-H319-H302
P310-P304+P340-P280-P309-
P301+P330+P331-P305+P351+P338



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2623,1000	1 L
A2623,5000	5 L

Hydrofluoric acid - Standard volumetric Solution (0.1 M)

0.1 mol/L (0.1 N Solution)

Storage: RT
LGK: 6.1 B
Disposal: 23

Class / PG: 8(6.1)/II
UN1790
WGK: 1
Warning
H302-H319-H311-H332
P305+P351+P338-P301+P330+P331-
P310-P309-P304+P340-P280



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2634,1000	1 L
A2634,5000	5 L

Hydrofluoric acid - Standard volumetric solution (0.05 M)

0.05 mol/L (0.05 N Solution)

Storage: RT
LGK: 6.1 B
Disposal: 23

Class / PG: 8(6.1)/III
UN2922
WGK: 1
Warning
H332-H302-H312-H319
P305+P351+P338-P301+P330+P331-
P309-P280-P310-P304+P340



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4120,1000	1 L
A4120,5000	5 L

Hydrofluoric acid - Standard volumetric Solution (0.01 M)

0.01 mol/L (0.01 N Solution)

Storage: RT
LGK: 6.1 B
Disposal: 23

Order-No.	Quantity
A2586,1000	1 L
A2586,5000	5 L

C

Hydrogen peroxide 50 % pure

C

stabilized with 190 - 220 mg/L Phosphate

Boiling point 107°C (30 %)

Melting point -26°C (30° %)

 H_2O_2 $M = 34.01$ g/mol

CAS-No.: 7722-84-1

HS-No.: 28470000

EC-No.: 231-765-0

Storage: RT

LGK: 5.1 B

Disposal: 22

Class / PG: 5.1(8)/II

UN2014

WGK: 1

Danger

H332-H372-H302-H314

P280-P305+P351+P338-P313

**Specification:**

Assay (titr.) approx. 50 %

Acidity max. 0.025 %

Residue on ignition max. 0.05 %

Order-No.	Quantity
A4269,1000	1 L
A4269,10006	6 x 1 L
A4269,5000	5 L
A4269,9010	10 L
A4269,9025	25 L

Hydrogen peroxide 35 %

Boiling point 107°C (30 %)

Melting point -26°C (30° %)

 H_2O_2 $M = 34.01$ g/mol

CAS-No.: 7722-84-1

HS-No.: 28470000

EC-No.: 231-765-0

Storage: RT

LGK: 5.1 B

Disposal: 22

Class / PG: 5.1(8)/II

UN2014

WGK: 1

Danger

H318-H302-H315

P280-P305+P351+P338-P313

**Hydrogen peroxide 35 % p. A.**

C

stabilized with 190 - 220 mg/L Phosphate

Density (d 20°C/4°C) .. 1.13 (35 %)

Specification:

Assay (titr.) min. 35 %

Acidity max. 0.025 %

Non-volatile matter max. 0.05 %

Cr max. 0.0001 %

Cu max. 0.0001 %

Fe max. 0.0001 %

Ni max. 0.0001 %

Pb max. 0.0001 %

Zn max. 0.0001 %

Order-No.	Quantity
A2720,0250	250 ml
A2720,0500	500 ml
A2720,1000	1 L
A2720,10006	6 x 1 L
A2720,2500	2.5 L
A2720,25004	4 x 2.5 L
A2720,5000	5 L

Hydrogen peroxide 35 % pure

C

stabilized with 190 - 220 mg/L Phosphate

Density (d 20°C/4°C) .. 1.13 (35 %)

Specification:

Assay (titr.) min. 35 %

Acidity max. 0.025 %

Non-volatile matter max. 0.05 %

Order-No.	Quantity
A2473,0500	500 ml
A2473,1000	1 L
A2473,10006	6 x 1 L
A2473,2500	2.5 L
A2473,25004	4 x 2.5 L
A2473,5000	5 L
A2473,9010	10 L
A2473,9025	25 L

Hydrogen peroxide 35 % Technical grade

C

stabilized with 190 - 220 mg/L Phosphate

Density (d 20°C/4°C) .. 1.13 (35 %)

Specification:

Assay (titr.) approx. 35 %

Acidity max. 0.2 %

Order-No.	Quantity
A0466,5000	5 L
A0466,9010	10 L
A0466,9025	25 L

Hydrogen peroxide (concentrations: 10 - < 35 %)

Boiling point 107°C (30 %)
 Melting point -26°C (30 %)

H₂O₂
M = 34.01 g/mol
 CAS-No.: 7722-84-1
 HS-No.: 28470000
 EC-No.: 231-765-0

Storage: RT
 LGK: 5.1 B
 Disposal: 22

WGK: 1
 Danger
 H318-H302
 P280-P305+P338-P313

**Hydrogen peroxide 30 % p. A.**

C

stabilized with 190 - 220 mg/L Phosphate

Class / PG: 5.1(8)/I
 UN2014

Density (d 20°C/4°C) .. 1.11 (30 %)

Specification:

Assay (titr.) min. 30 %
 Acidity max. 0.005 %
 Residue on ignition max. 0.005 %
 Cr max. 0.0001 %
 Cu max. 0.0001 %
 Fe max. 0.0001 %
 Ni max. 0.0001 %
 Pb max. 0.0001 %
 Zn max. 0.0001 %

Order-No.	Quantity
A1134,0250	250 ml
A1134,0500	500 ml
A1134,1000	1 L
A1134,10006	6 x 1 L
A1134,2500	2.5 L
A1134,25004	4 x 2.5 L
A1134,5000	5 L
A1134,9010	10 L
A1134,9025	25 L

Hydrogen peroxide 30 % pure Ph. Eur., USP

C

stabilized with 190 - 220 mg/L Phosphate

Class / PG: 5.1(8)/I
 UN2014

Density (d 20°C/4°C) .. 1.11 (30 %)

Specification:

Assay (titr.) 29.0 - 31.0 %
 Acidic reacting subst. complies
 Heavy metals (as Pb) max. 0.0005 %
 Identity complies
 Non-volatile matter max. 0.2 %
 Organic stabilizers max. 0.05 %
 Chloride max. 0.005 %

Order-No.	Quantity
A0626,0250	250 ml
A0626,0500	500 ml
A0626,1000	1 L
A0626,10006	6 x 1 L
A0626,2500	2.5 L
A0626,25004	4 x 2.5 L
A0626,5000	5 L
A0626,9010	10 L
A0626,9025	25 L

Hydrogen peroxide 30 % Technical grade

C

stabilized with 190 - 220 mg/L Phosphate

Class / PG: 5.1(8)/I
 UN2014

Density (d 20°C/4°C) .. 1.11 (30 %)

Specification:

Assay (titr.) approx. 30 %
 Acidity max. 0.05 %

Order-No.	Quantity
A1845,2500	2.5 L
A1845,25004	4 x 2.5 L
A1845,5000	5 L
A1845,9010	10 L
A1845,9025	25 L

Hydrogen peroxide 20 % pure

C

stabilized with approx. 130 mg/L Phosphate

Class / PG: 5.1(8)/I
 UN2014

Specification:

Assay (titr.) min. 20 %
 Acidity max. 0.025 %
 Residue on ignition max. 0.05 %

Order-No.	Quantity
A3339,0500	500 ml
A3339,1000	1 L
A3339,2500	2.5 L
A3339,5000	5 L

Hydrogen peroxide 10 % p. A.

C

stabilized with approx. 70 mg/L Phosphate

Class / PG: 5.1/III
 UN2984

Specification:

Assay (titr.) approx. 10 %
 Acidity max. 0.005 %
 Cr max. 0.0001 %
 Cu max. 0.0001 %

Fe max. 0.0001 %
 Ni max. 0.0001 %
 Pb max. 0.0001 %
 Zn max. 0.0001 %

Order-No.	Quantity
A2726,1000	1 L
A2726,10006	6 x 1 L
A2726,2500	2.5 L

Hydrogen peroxide 10 % pure

stabilized with approx. 70 mg/L Phosphate

Class / PG: 5.1/III
UN2984

C

Specification:

Assay (titr.) 9.0 - 11.0 %
 Acidic reacting subst. complies
 Identity complies
 Non-volatile matter max. 0.02 %
 Organic stabilizers max. 0.05 %

Order-No.	Quantity
A2728,1000	1 L
A2728,10006	6 x 1 L
A2728,2500	2.5 L
A2728,25004	4 x 2,5 L
A2728,5000	5 L
A2728,9010	10 L

Hydrogen peroxide - Standard volumetric solutions

Storage: RT
 LGK: 5.1 B
 Disposal: 22

Hydrogen peroxide - Standard volumetric solution (5 M)

5 mol/L (5 N Solution)

HS-No.: 28470000

Class / PG: 5.1/III
 UN2984
 Danger
 H318-H302
 P305+P351+P338-P313-P280

C

**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2800,1000	1 L
A2800,5000	5 L
A2800,9010	10 L

Hydrogen peroxide - Standard volumetric solution (1 M)

1 mol/L (1 N Solution)

HS-No.: 38220000

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2801,1000	1 L
A2801,5000	5 L

Hydrogen peroxide - Standard volumetric solution (0.1 M)

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3531,1000	1 L
A3531,5000	5 L

Hydrogen peroxide - Standard volumetric solution (0.01 M)

0.01 mol/L (0.01 N Solution)

HS-No.: 38220000

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3574,1000	1 L
A3574,10006	6 x 1 L
A3574,5000	5 L

Hydroiodic acid 57 % pure

C

HI
 $M = 127.9 \text{ g/mol}$
 CAS-No.: 10034-85-2
 HS-No.: 28111980

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/II
 UN1787
 WGK: 1
 Danger
 H314
 P305+P351+P338-P304+P340-P280

**Specification:**

Assay (titr.) approx. 57 %
 Free iodine max. 0.75 %
 Heavy metals (as Pb) max. 0.001 %

Sulfate max. 0.005 %
 Fe max. 0.001 %

Order-No.	Quantity
A8183,0250	250 ml
A8183,1000	1 L

Hydroquinone

1,4-Dihydroxybenzene

$C_6H_6O_2$
 $M = 110.11$ g/mol
 CAS-No.: 123-31-9
 HS-No.: 29072200
 EC-No.: 204-617-8

Melting point 172°C
 Solubility (25°C) 70 g/L (H_2O)

Storage: RT
 LGK: 10-13
 Disposal: 3

Class / PG: 9/III
 UN3077
 WGK: 2
 Danger
 H341-H400-H302-H351-H318-H317
 P302+P352-P305+P351+P338-
 P308+P313-P273-P280



Hydroquinone pure

Specification:

Assay (HPLC) min. 99 %
 Melting range 171 - 175°C
 Fe max. 0.002 %

Order-No.	Quantity
A6289,0100	100 g
A6289,0500	500 g
A6289,1000	1 kg
A6289,10006	6 x 1 kg

C

Hydroquinone for synthesis

Specification:

Assay (HPLC) min. 99 %
 Melting range 170 - 174°C
 Water (K.F.) max. 0.6 %

Order-No.	Quantity
A4820,0500	500 g
A4820,1000	1 kg
A4820,10006	6 x 1 kg
A4820,5000	5 kg

C

Hydroxyacetic acid - Solution see Glycolic acid - Solutions Page 387
 p-Hydroxyampicillin see Ampicillin trihydrate Molecular biology grade Page 108
 17β-4-Hydroxyandrostene-3-on see Testosterone Page 802
 8-Hydroxy-1-azanaphthalene see 8-Hydroxyquinoline Page 428
 2-Hydroxybenzoic acid see Salicylic acid Page 701

4-Hydroxybenzoic acid

Melting range 212 - 215°C

$C_7H_6O_3$
 $M = 138.12$ g/mol
 CAS-No.: 99-96-7
 HS-No.: 29182900
 EC-No.: 202-804-9

Storage: RT
 LGK: 10-13
 Disposal: 4

WGK: 1
 Warning
 H319
 P305+P351+P338



4-Hydroxybenzoic acid p. A.

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.005 %
 Loss on drying max. 1 %

Chloride max. 0.01 %
 Sulfate max. 0.01 %
 Fe max. 0.005 %

Order-No.	Quantity
A4783,0250	250 g
A4783,0500	500 g

C

4-Hydroxybenzoic acid for synthesis

Specification:

Assay (titr.) min. 98 %
 Loss on drying max. 2 %

Order-No.	Quantity
A6917,0100	100 g
A6917,0500	500 g

C

4-Hydroxybenzoic acid ethylester see Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC Page 343
 4-Hydroxybenzoic acid methylester see Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC Page 539
 4-Hydroxybenzoic acid propylester see Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC Page 670
 (S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid see D-Luciferin free acid Page 496
 (S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid sodium salt see D-Luciferin sodium salt Page 497
 10-p-Hydroxybenzylaucubin see Agnusid HPLC grade Page 73
 2-Hydroxybut-3-enylglucosinate potassium salt see Progoitrin HPLC grade Page 663
 17-Hydroxycorticosterone see Hydrocortisone *BioChemica* Page 420
 1-Hydroxycyclobut-1-ene-3,4-dione see Moniliformin sodium salt *BioChemica* Page 549
 Hydroxydaunorubicin see Doxorubicin hydrochloride *BioChemica* Page 308
 8-Hydroxydiacetoxyscirpenol see Neosolanol *BioChemica* Page 563
 7-Hydroxy-5,6-dimethoxycumarin see Umckalin HPLC grade Page 848

Hydroxyectoine

(4S,5S)-5-Hydroxy-2-methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid,
 (S)-2-Methyl-5-hydroxy-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid,
 THP A

$C_6H_{10}N_2O_3$
 $M = 158.16$ g/mol
 CAS-No.: 165542-15-4
 HS-No.: 29334990

Storage: RT

WGK: 1
 Warning
 H319-H315-H335
 P280-P305+P351+P338



Specification:

Assay min. 95 %
 Endotoxins max. 3000 EU/g
 Heavy metals (as Pb) max. 0.001 %
 Sulfated ash max. 0.4 %

pH (2 % H_2O) 6.0 - 8.0
 Ectoine (HPLC) max. 5 %
 Water (K.F.) max. 0.5 %
 Chloride max. 0.2 %

Order-No.	Quantity
A6741,0001	1 g
A6741,0010	10 g
A6741,0025	25 g

4-(2-Hydroxyethyl)-1-piperazine-1-ethanesulfonic acid see HEPES Page 401

4-(2-Hydroxyethyl)-piperazine-1-ethanesulfonic acid sodium salt see HEPES sodium salt Page 402
 N-(2-Hydroxyethyl)-piperazine-N'-2-ethanesulfonic acid see HEPES Page 401
 N-(2-Hydroxyethyl)-piperazine-N'-2-ethanesulfonic acid sodium salt see HEPES sodium salt Page 402
 4-(2-Hydroxyethyl)-piperazine-1-(2-hydroxy)-propanesulfonic acid see HEPPSO Buffer grade Page 403
 N-(2-Hydroxyethyl)-piperazine-N'-3-propanesulfonic acid see HEPPS Buffer grade Page 402
 4-(2-Hydroxyethyl)-piperazine-1-propanesulfonic acid see HEPPS Buffer grade Page 402
 N-(2-Hydroxyethyl)-trimethylammoniumchloride see Choline chloride *BioChemica* Page 209
 1-Hydroxyginkgolide A see Ginkgolide B HPLC grade Page 374

L-Hydroxyisocaproate dehydrogenase, bacterial Technical grade

B

[EC 1.1.1.27]

supplied liquid in 100 mM potassium phosphate buffer, pH 6.5 of bacterial origin

M = ~125 kDa
 HS-No.: 35079090

Storage: 2-8°C
 Shipment: wet ice

Specification:

Activity min. 1500 U/ml

Order-No.	Quantity
A7953,0001	1 KU
A7953,0010	10 KU
A7953,0100	100 KU

Comment: The bacterial L- Hydroxyisocaproate dehydrogenase is used in the metabolization of aliphatic and aromatic α-keto acids and α-hydroxy acids, respectively.
 Unit definition: One unit is the amount of enzyme required to metabolize 1 μmol substrate per minute in 100 mM potassium phosphate buffer, pH 7.0 at 30°C. This technical enzyme grade is intended for use in chemical synthesis.

Hydroxylamine hydrochloride see Hydroxylammonium chloride Page 426

Hydroxylammonium chloride

Hydroxylamine hydrochloride

Melting point 159°C
 Solubility (20°C) 464 g/L (H₂O)

CH₄NO
M = 69.49 g/mol
 CAS-No.: 5470-11-1
 HS-No.: 28251000
 EC-No.: 226-798-2

Storage: RT
 LGK: 4.1 A
 Disposal: 28

Class / PG: 9/III
 UN3077
 WGK: 3*
 Warning
 H290-H312-H373-H351-H319-H315-
 H302-H317-H400
 P281-P305+P351+P338-P308+P313-
 P273-P302+P352



Hydroxylammonium chloride *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O; 20°C) 2.5 - 3.5
 Heavy metals max. 0.005 %

Sulfate max. 0.0005 %
 Cu max. 0.002 %
 Fe max. 0.0005 %

Order-No.	Quantity
A4480,0250	250 g
A4480,0500	500 g

Hydroxylammonium chloride p. A.

C

Specification:

Assay (titr.) min. 99.5 %
 Free acid max. 0.2 %
 Heavy metals (as Pb) max. 0.0005 %
 Solution in EtOH complies
 Sulfated ash max. 0.01 %
 Total S (as SO₄) max. 0.005 %

pH (5 %; H₂O) 2.5 - 3.5
 Loss on drying max. 0.1 %
 Ammonium max. 0.1 %
 Sulfate max. 0.002 %
 Cu max. 0.001 %
 Fe max. 0.0005 %

Order-No.	Quantity
A4925,0100	100 g
A4925,0250	250 g
A4925,0500	500 g
A4925,1000	1 kg
A4925,10006	6 x 1 kg

Hydroxylammonium chloride pure

C

Specification:

Assay (titr.) min. 98 %
 pH (5 %; H₂O) 2.5 - 3.5

Order-No.	Quantity
A2579,0250	250 g
A2579,0500	500 g

Hydroxylammonium chloride - Solutions

Storage: RT

Hydroxylammonium chloride - Solution 10 % in water for Mercury determination

C

HS-No.: 28251000

LGK: 10 - 13
 Disposal: 28

WGK: 3*
 Danger
 H315-H302-H317-H351-H319-H373
 P301+P312-P280



Composition:

Hydroxylammonium chloride
 100 g/L (A2579)

Specification:

pH (H₂O) 2.5 - 3.5 (20°C)

Order-No.	Quantity
A3315,0500	500 ml
A3315,1000	1 L
A3315,10006	6 x 1 L
A3315,5000	5 L

Hydroxylammonium chloride - Solution 4.5 % in ethanol denaturated

HS-No.: 38220000

LGK: 3 A

Disposal: 1

Class / PG: 3/II

UN1993

Danger

H351-H317-H225

P308+P313-P210-P281



Composition:

Hydroxylammonium chloride
..... 45 g/L (A2579)

Order-No.	Quantity
A3308,1000	1 L
A3308,2500	2.5 L

3β-Hydroxy-lup-20(29)-en-28-oic see Betulinic acid HPLC grade Page 137
(4S,5S)-5-Hydroxy-2-methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid see Hydroxyectoine Page 425
4-Hydroxy-4-methyl-2-pentanone see Diacetone alcohol for synthesis Page 272

Hydroxynitrile Lyase, plant Technical grade

B

[E.C. 4.1.2.10], Oxynitrilase
supplied liquified
from plants

M = ~50 kDa
HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

Specification:

Activity min. 200 U/ml

Order-No.	Quantity
A7857,0200	200 U
A7857,1000	1000 U

Comment: The plant enzyme Hydroxynitrile lyase metabolizes aliphatic and aromatic aldehydes and ketones.

Unit definition: One unit is the amount of enzyme required to metabolize 1 μmol substrate per minute in 100 mM citrate - dl-sodium hydrogen phosphate buffer, pH 5.0 at 25°C. This technical enzyme grade is intended for use in chemical synthesis.

(3α,4β)-3-Hydroxy-olean-12-en-23-oic acid see α-Boswellic acid HPLC grade Page 155
7-Hydroxy-8-phenyl- azo-1,3-naphthalenedisulfonic acid see Orange G (C.I. 16230) Page 585

L-Hydroxyproline

trans-L-4-Hydroxypyrrolidine-2-
carboxylic acid

C₅H₉NO₃
M = 131.1 g/mol
CAS-No.: 51-35-4
HS-No.: 29339980
EC-No.: 200-091-9

Storage: RT
LGK: 10 - 13

WGK: nwg

Solubility (25°C) 361 g/L (H₂O)

L-Hydroxyproline Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
α20°C/D; 5 %, H₂O -74° - -77°
pH (5 %; H₂O) 5.5 - 6.5

Other amino acids max. 0.5 %
Ammonium max. 0.1 %
Chloride max. 0.02 %
Sulfate max. 0.02 %

As max. 0.0001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A3742,0025	25 g
A3742,0100	100 g
A3742,0250	250 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Hydroxyproline BioChemica

B

Specification:

Assay (titr.) min. 99 %
α20°C/D; 5 %, H₂O -74° - -77°
Heavy metals (as Pb) max. 0.001 %

Insoluble matter complies
Other amino acids max. 0.5 %
Ammonium max. 0.02 %

Chloride max. 0.02 %
Sulfate max. 0.02 %

Order-No.	Quantity
A3710,0025	25 g
A3710,0100	100 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Hydroxyproline pure

C

Specification:

Assay (titr.) 99.0 - 101.0 %
α20°C/D; 5 %, H₂O -74° - -77°
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 0.2 %

Sulfated ash max. 0.1 %
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %

Sulfate max. 0.02 %

Order-No.	Quantity
A1705,0025	25 g
A1705,0100	100 g
A1705,0250	250 g

◆ All amino acids from AppliChem are of non-animal origin!

2-Hydroxypropionic acid silver salt see L(+)-Lactic acid silver salt BioChemica Page 477

2-Hydroxypropyl-β-cyclodextrin

B

HPBCD CAS-No.: 128446-35-5 Storage: RT
 HS-No.: 29400000

Melting point 278°C (dec.)

Specification:

Assay min. 97 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying max. 7.5 %
 As max. 0.0003 %

Order-No.	Quantity
A0367,0005	5 g
A0367,0025	25 g
A0367,0100	100 g

Comment: Hydroxypropyl-β-Cyclodextrin (HPBCD) is a partially substituted poly(hydroxypropyl) ether of β-cyclodextrin (BCD). The hydroxypropyl groups are randomly substituted onto the hydroxyl groups of the cyclodextrin. Variations in the degree of substitution don't allow to give an exact molecular weight.

Functionality: HPBCD, like BCD and other derivatives of BCD are suitable for molecular encapsulation of a variety of sparingly water soluble compounds to enhance the aqueous solubility of the encapsulated compounds. In addition to increase the solubility, the stability of the guest compound can be enhanced and the volatility can be reduced. This product is chemically stable and does not contribute significantly to viscosity until very high concentrations (> 50 %) are reached. The basic closed circular structure of BCD is maintained in HPBCD.

Solubility and Stability: HPBCD is itself very soluble in water (> 500 mg/ml at room temperature compared to 18 mg/ml for β-Cyclodextrin). When making aqueous solutions of HPBCD or HPBCD/drug complexes, a significant volume expansion must be accounted for. While the volume expansion is around 1.0 ml/gram at low (5 % w/v) concentrations, the magnitude of the effect levels off at about 0.7 ml/gram at concentrations greater than 20 % (w/v). Strong acids, such as hydrochloric or sulfuric acids, hydrolyze HPBCD. The rate of hydrolysis is dependent upon the temperature and concentration of the acid. The higher the temperature or concentration of the acid, the more rapid is the rate of hydrolysis. Weak acids, such as organic acids do not hydrolyze HPBCD. HPBCD is stable in bases. HPBCD is synthesized under basic conditions without opening of the BCD ring.

6-Hydroxypurine see Hypoxanthine *BioChemica* Page 431

trans-L-4-Hydroxypyrrolidine-2-carboxylic acid see L-Hydroxyproline Page 427

8-Hydroxyquinoline

B

8-Quinololinol, 8-Hydroxy-1-
 azanaphthalene, Oxin

C₉H₇NO
 M = 145.16 g/mol
 CAS-No.: 148-24-3
 HS-No.: 29334990
 EC-No.: 205-711-1

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 3
 Warning
 H302-H332
 P301+P312-P330-P264



Melting point 72 - 74°C

Specification:

Assay (titr.) min. 99 %
 Sulfated ash max. 0.05 %
 Chloride max. 0.001 %
 Sulfate max. 0.01 %

Order-No.	Quantity
A2172,0005	5 g
A2172,0010	10 g
A2172,0025	25 g

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-41
 (2) Vieira, N.E. et al. (1994) *Anal. Biochem.* **218**, 92-97

Large- and small-scale Phenol extractions.

Extraction of Magnesium from biological fluids using 8-Hydroxyquinoline and cation-exchange chromatography for isotopic enrichment analysis using thermal ionization mass spectrometry.

12-Hydroxysenecionan-11,16-dione-4-oxide see Senecionin-N-oxide HPLC grade Page 708

12-Hydroxysenecionane-11,16-dione see Senecionin HPLC grade Page 708

DL-Hydroxysuccinic acid see DL-Malic acid Page 509

S(-)-2-Hydroxysuccinic acid see L(-)-Malic acid Page 510

DL-Hydroxysuccinic acid monosodium salt see DL-Malic acid monosodium salt Page 509

S(-)-2-Hydroxysuccinic acid sodium salt see L(-)-Malic acid monosodium salt *BioChemica* Page 510

N-Hydroxysuccinimidobiotin see (+)-Biotin-N-hydroxysuccinimide ester *BioChemica* Page 142

3-Hydroxy-4-[2-sulfo-4-(4-sulfophenylazo)-phenylazo]-2,7-naphthalenedisulfonic acid see Ponceau S (C.I. 27195) Page 635

5-Hydroxytetracycline hydrochloride see Oxytetracycline hydrochloride Page 589

(R)-3-Hydroxy-4-trimethylammoniumbutyrate see L-Carnitine *BioChemica* Page 186

Hydroxytyrosol HPLC grade

B

3,4-Dihydroxyphenylethanol
 from *Olea europaea*

C₉H₁₀O₃
 M = 154.17 g/mol
 CAS-No.: 10597-60-1
 HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A5303,0025	25 mg
A5303,0025DOC	25 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

N-Hydroxyurea

B

Melting point 135 - 140°C

CH₄N₂O₂
M = 76.06 g/mol
 CAS-No.: 127-07-1
 HS-No.: 29280090
 EC-No.: 204-821-7

Storage: RT
 LGK: 6.1 A
 Disposal: 9

WGK: 1
 Warning
 H361
 P281

**Specification:**

Assay (titr.) min. 98 %
 Heavy metals max. 0.002 %
 Loss on drying max. 1 %
 Sulfated ash max. 0.1 %

Order-No.	Quantity
A2173,0001	1 g
A2173,0005	5 g
A2173,0010	10 g
A2173,0025	25 g

Literature: (1) Rosenkranz, H.S. *et al.* (1966) *Biochim. Biophys. Acta* **114**, 501-515

(2) Anand, S. *et al.* (1995) *Cancer Lett.* **88**, 101-105

Studies with Hydroxyurea: I. The reversible inhibition of bacterial DNA synthesis and effect of Hydroxyurea on the bacterial action of streptomycin.
 Induction of apoptosis in chronic myelogenous leukemia lymphocytes by hydroxyurea and adriamycin.

3 α -Hydroxy-urs-12-en-11-keto-23-oic acid see 11-Keto- β -boswellic acid HPLC grade Page 470

(3 α ,4 β)-3-Hydroxyurs-12-en-23-oic acid see β -Boswellic acid HPLC grade Page 156

3 β -Hydroxyurs-12-en-28-oic acid see Ursolic acid HPLC grade Page 852

Hydroxyvaleric acid HPLC grade

B

from *Valeriana officinalis*

C₁₅H₂₂O₃
M = 250.34 g/mol
 CAS-No.: 1619-16-5
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A2063,0025	25 mg
A2063,0025DOC	25 mg
A2063,0050	50 mg
A2063,0050DOC	50 mg
A2063,0100	100 mg
A2063,0100DOC	100 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, elemental analysis. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Hygromycin B

B

C₂₀H₃₇N₃O₁₃
M = 527.53 g/mol
 CAS-No.: 31282-04-9
 HS-No.: 29419000
 EC-No.: 250-545-5

Storage: 2-8°C
 LGK: 6.1 B

Class / PG: 6.1/II
 UN3462
 WGK: 3
 Danger
 H334-H318-H332
 P305+P351+P338-P280-P261-
 P342+P311

**Specification:**

Assay min. 80 %
 Activity min. 1000 U/mg
 Loss on drying max. 5 %
 Sulfated ash max. 5 %

Order-No.	Quantity
A5347,0100	100 mg
A5347,0250	250 mg
A5347,1000	1 g



**Chemicals from
 AppliChem -
 all over the world !**

Hygromycin B - Solution

B

Density (d 20°C/4°C) ... 1.15

 $C_{20}H_{37}N_3O_{13}$
 $M = 527.53$ g/mol
CAS-No.: 31282-04-9
HS-No.: 38220000
EC-No.: 250-545-5

Storage: -20°C
LGK: 6.1 B

Class / PG: 6.1/III
UN2810
WGK: 3*
Warning
H332-H302
P342+P311-P280-P305+P351+P338


Composition:

Hygromycin B (A5347) approx. 41.2 mg/ml

Specification:

Activity approx. 46 KU/ml

Order-No.	Quantity
A2175,0001	1 ml
A2175,0005	5 ml

Literature: (1) Gritz, L. & Davies, J. (1983) *Gene* **25**, 179-188

Plasmid-coded Hygromycin B-resistance: The sequence of the Hygromycin B-Phosphotransferase gene.

(2) Carrasco, L. & Vázquez, D. (1993) *Viral Translation Inhibitors in Antibiotics VI* Pages 279 (ed. F.E. Hahn) Springer-Verlag Berlin Heidelberg New York Tokyo.

(3) Moazed, D. & Noller, H.F. (1987) *Nature* **327**, 389-394

Interaction of antibiotics with functional sites in the 16S rRNA.

Comment: Hygromycin B belongs to the aminoglycoside antibiotics. It inhibits the bacterial translation by interacting with the 16S-rRNA. In eukaryotes the antibiotic inhibits the splicing of the group I-introns by binding to a specific RNA motive. This leads to reading errors and an inhibition of the translocation, probably by release of the peptidyl-tRNA from the acceptor site (3). The viral replication will be inhibited by antibiotics of these group too.

In molecular biology, hygromycin B is used for the selection of hygromycin-resistant cells after transformation with a plasmid, that codes for the *E. coli* hygromycin-phosphotransferase (hph). A number of vectors has been developed, to enable the application in different organism (fungi: Egelhoff, T.T. *et al.* (1989) *Mol. Cell. Biol.* **9**, 1965-1968; Hamada, W. *et al.* (1994) *Curr. Genet.* **26**, 251-255; **mammalian cells:** Belt, P.B.G.M. *et al.* (1989) *Gene* **94**, 407-417; Gäken, J. *et al.* (1992) *BioTechniques* **13**, 32-34; Norman, J.A. *et al.* (1992) *Mol. Pharmacol.* **41**, 53-59; Hubbard, S.C. *et al.* (1994) *J. Biol. Chem.* **269**, 3717-3724; **plants:** Dale, E.C. & Ow, D.W. (1991) *Proc. Natl. Acad. Sci. USA* **88**, 10558-10562; Ma, H. *et al.* (1992) *Gene* **117**, 161-167). Depending on the organism and cell type, the active concentration ranges from 20 µg/ml to 150 µg/ml. Usually, the higher concentration is applied (for HeLa-cells up to 300 µg/ml). It is recommended to test for the optimal concentration.

The quantity of hygromycin applied can be reduced by increasing the pH of the medium. At higher pH values, cells are more sensitive. Lower salt concentrations will help to save hygromycin too (LB medium / LB agar with 5 instead of 10 g NaCl per litre).

Stability: Hygromycin B-solutions (e. g. in HEPES buffer) are stable at +4°C for at least one year. Informations for the stability at 37°C are ranging from one month to the recommendation to change the medium every third day. In agar plates the stability is approx. 4 weeks. The shipment will be at room temperature. The substance is sensitive to high concentrations of acids. Diluted acids may be tolerated for a short time.

Caution: Hygromycin B is very toxic and probably a carcinogen. Do not breathe dust and avoid contact with skin. Wear suitable protective clothing, gloves and eye protection.

Hyperforin dicyclohexyl ammonium salt pure



B

from *Hypericum perforatum*
 $C_{35}H_{51}O_4 \cdot C_{12}H_{25}N$
 $M = 718.12$ g/mol
CAS-No.: 238074-03-8
HS-No.: 29142900

Storage: -20°C
protected from light
under argon

Specification:

Assay min. 90 %

Order-No.	Quantity
A8459,0005	5 mg
A8459,0010	10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hypericin HPLC grade

B

Cyclosan, Mycoporphyrin
from *Hypericum perforatum*
 $C_{30}H_{16}O_8$
 $M = 504.45$ g/mol
CAS-No.: 548-04-9
HS-No.: 29145000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A2061,0005	5 mg
A2061,0005DOC	5 mg
A2061,0010	10 mg
A2061,0010DOC	10 mg
A2061,0020	20 mg
A2061,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, hr-MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Hypericin sodium salt HPLC grade

B

from *Hypericum perforatum*
 $C_{30}H_{15}NaO_8$
 $M = 526.45$ g/mol
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A6762,0005	5 mg
A6762,0010	10 mg
A6762,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hyperin see Hyperosid Page 431

Hyperosid

Hyperin, Quercetin-3-β-D-galactoside

C₂₁H₂₀O₁₂
M = 464.38 g/mol
 CAS-No.: 482-36-0
 HS-No.: 29389090
 EC-No.: 207-580-6

Storage: 2-8°C
 LGK: 10 - 13

Hyperosid HPLC grade

B

from *Hypericum perforatum***Specification:**

Assay min. 99 %

Order-No.	Quantity
A2062,0020	20 mg
A2062,0020DOC	20 mg
A2062,0050	50 mg
A2062,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Hyperosid pure

B

from *Hypericum perforatum***Specification:**

Assay min. 97 %

Order-No.	Quantity
A1791,0100	100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Hypophosphorous acid 50 %

H₃PO₂

H₃O₂P
M = 66.00 g/mol
 CAS-No.: 6303-21-5
 HS-No.: 28111980
 EC-No.: 228-601-5

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/III
 UN3264
 WGK: 3*
 Danger
 H314
 P280-P305+P351+P338-P310



Density (d 20°C/4°C) ... 1.25

Hypophosphorous acid 50 % p. A.

C

Specification:

Assay (titr.) approx. 50 %
 Solubility water-soluble
 Other Phosphoric acids max. 2 %
 Chloride max. 0.005 %

Sulfate	 max. 0.02 %	Mn	 max. 0.0005 %
As	 max. 0.0005 %	Ni	 max. 0.0005 %
Cu	 max. 0.0005 %	Pb	 max. 0.0005 %
Fe	 max. 0.005 %	Zn	 max. 0.0001 %

Order-No.	Quantity
A2632,0250	250 ml
A2632,0500	500 ml
A2632,1000	1 L

Hypophosphorous acid 50 % pure

C

Specification:

Assay (titr.) approx. 50 %
 Chloride max. 0.05 %
 Pb max. 0.005 %

Order-No.	Quantity
A2649,0250	250 ml
A2649,0500	500 ml
A2649,1000	1 L
A2649,1006	6 x 1 L

Hypoxanthine BioChemica

B

Sarkine, 6-Hydroxypurine

C₅H₄N₄O
M = 136.11 g/mol
 CAS-No.: 68-94-0
 HS-No.: 29335995
 EC-No.: 200-697-3

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Melting point > 250°C (dec.)
 pK₁ (25°C) approx. 2.0
 pK₂ (25°C) approx. 8.9
 pK₃ (25°C) approx. 12.1

Specification:

Assay min. 99.5 %
 Heavy metals max. 0.001 %
 Loss on drying max. 0.5 %
 Sulfated ash max. 0.2 %

Order-No.	Quantity
A0700,0005	5 g
A0700,0010	10 g
A0700,0025	25 g

Hypoxanthine sodium salt *BioChemica*



B

$C_5H_3N_4NaO$
 $M = 158.09 \text{ g/mol}$
CAS-No.: 45738-97-4
HS-No.: 29335995

Storage: RT
LGK: 10 - 13

Specification:

Assay min. 97 %
 λ_{max} 257 - 261 nm
Appearance of solution clear
Heavy metals (as Pb) max. 0.001 %

Identity (UV) complies
Loss on drying (110°C) max. 3.0 %

Order-No. Quantity

A7729,0005 5 g
A7729,0010 10 g
A7729,0025 25 g

Hypoxanthine-9- β -D-ribofuranoside see Inosine *BioChemica* Page 452
IBMX see 3-Isobutyl-1-methylxanthine *BioChemica* Page 464
Idoxuridine see 5-Iodo-2'-deoxyuridine *BioChemica* Page 456
IDU see 5-Iodo-2'-deoxyuridine *BioChemica* Page 456

rHu IFN- α -2a bioconfident grade



B

recombinant Human Interferon alpha 2a
Sterile filtered through a 0.2 μ m filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 21.5 \text{ kDa}$
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/ μ g
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No. Quantity

A8762,0010 10 μ g
A8762,0050 50 μ g
A8762,0100 100 μ g
A8762,1000 1 mg

Comment: Recombinant human IFN- α -2a contains 166 amino acids and a 16 amino acid histidine-based tag for a total length of 182 amino acids and has a predicted molecular mass of 21.5 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 24 kDa in SDS-PAGE.

rHu IFN- γ bioconfident grade



B

recombinant Human Interferon gamma
Sterile filtered through a 0.2 μ m filter.
Lyophilized from PBS, pH 7.4.
from *Hordeum vulgare*

$M = 18.8 \text{ kDa}$
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/ μ g
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No. Quantity

A8770,0010 10 μ g
A8770,0050 50 μ g
A8770,0100 100 μ g
A8770,1000 1000 μ g

Comment: Recombinant human IFN-gamma is a 18.8 kDa protein containing 143 amino acids residues and contains a 16 amino acid Histidine-based tag for a total length of 159 amino acids. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 25 and 27 kDa in SDS-PAGE.

rHu IFN- γ



B

recombinant Human Interferon- γ
lyophilized after extensive dialysis from a
conc. (1 mg/ml) solution in 10 mM
sodium phosphate buffer pH 7.4 $\pm$ 0.1
from *E. coli*

$M = 16.88 \text{ kDa}$
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No. Quantity

A8293,0020 20 μ g
A8293,0100 100 μ g
A8293,1000 1 mg

Comment: The major interferon produced by mitogenically or antigenically stimulated lymphocytes. It is structurally different from type I interferon and its major activity is immunoregulation. It has been implicated in the expression of class II histocompatibility antigens in cells that do not normally produce them, leading to autoimmune disease. Interferon gamma is produced mainly by T-cells and natural killer cells activated by antigens, mitogens, or alloantigens. It is produced by lymphocytes expressing the surface antigens CD4 and CD8. The synthesis of IFN-gamma is induced, among other things, by Interleukin-2, FGF-basic, and EGF. Recombinant Human Interferon gamma produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 144 amino acids and having a molecular mass of 16.88 kDa.

rM IFN- γ



B

recombinant Mouse Interferon γ
lyophilized from 10.5X PBS pH 7.2
from *E. coli*

$M = 15.6$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8319,0020	20 μ g
A8319,0100	100 μ g

Comment: The major interferon produced by mitogenically or antigenically stimulated lymphocytes. It is structurally different from type I interferon and its major activity is immunoregulation. It has been implicated in the expression of class II histocompatibility antigens in cells that do not normally produce them, leading to autoimmune disease. Interferon gamma is produced mainly by T-cells and natural killer cells activated by antigens, mitogens, or alloantigens. It is produced by lymphocytes expressing the surface antigens CD4 and CD8. The synthesis of IFN- γ is induced, among other things, by Interleukin-2, basicFGF, and EGF. Recombinant Murine IFN- γ produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 134 amino acids and having a molecular mass of 15.60 kDa.

rR IFN- γ



B

lyophilized from 0.5X PBS, pH 7.2
from *E. coli*

$M = 15.609$ kD
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8309,0020	20 μ g
A8309,0100	100 μ g

Comment: The major interferon produced by mitogenically or antigenically stimulated lymphocytes. It is structurally different from type I interferon and its major activity is immunoregulation. It has been implicated in the expression of class II histocompatibility antigens in cells that do not normally produce them, leading to autoimmune disease. Interferon- γ is produced mainly by T-cells and natural killer cells activated by antigens, mitogens, or alloantigens. It is produced by lymphocytes expressing the surface antigens CD4 and CD8. The synthesis of IFN- γ is induced, among other things, by Interleukin-2, bFGF, and EGF. Recombinant Rat IFN- γ produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 135 amino acids and having a molecular mass of 15609 Dalton.

rHu IGF-1



B

recombinant human Insulin Growth
Factor-1
lyophilized with no additives
from *E. coli*

$M = 7.65$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin (LAL test) max. 0.1 EU/ μ g
Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8530,0002	2 μ g
A8530,0010	10 μ g
A8530,1000	1 mg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

rM IGF-1



B

recombinant Mouse Insulin-like Growth
Factor-1
lyophilized after extensive dialysis
against 0.2 μ m-filtered solution in PBS,
pH 7.2
from *E. coli*

$M = 7.6$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8314,0010	10 μ g
A8314,0050	50 μ g
A8314,1000	1 mg

Comment: A well-characterized basic peptide believed to be secreted by the liver and to circulate in the blood. It has growth-regulating, insulin-like, and mitogenic activities. This growth factor has a major, but not absolute, dependence on Somatotropin. It is believed to be mainly active in adults in contrast to Insulin like Growth Factor 2, which is a major fetal growth factor. Recombinant mouse IGF-1 produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 70 amino acids and having a molecular mass of 7.600 kDa.

rR IGF-1



B

recombinant Rat Insulin-like Growth Factor-1
lyophilized after extensive dialysis
against 100 mM acetic acid
from *E. coli*

M = 7.68 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8294,0010	10 µg
A8294,0050	50 µg

Comment: A well-characterized basic peptide believed to be secreted by the liver and to circulate in the blood. It has growth-regulating, insulin-like, and mitogenic activities. This growth factor has a major, but not absolute, dependence on Somatotropin. It is believed to be mainly active in adults in contrast to Insulin-like Growth Factor 2, which is a major fetal growth factor. Recombinant Rat IGF-1 produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 70 amino acids and having a molecular mass of 7.60 kDa.

rHu IGF-2



B

IGF-II, recombinantes humanas Insulin-like Growth Factor-2
lyophilized without additives
from *E. coli*

M = 7.50 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8247,0010	10 µg
A8247,0050	50 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. IGF is a well-characterized basic peptide believed to be secreted by the liver and to circulate in the blood. It has growth-regulating, insulin-like, and mitogenic activities. This growth factor has a major, but not absolute, dependence on Somatotropin. It is believed to be mainly active in adults in contrast to Insulin like Growth Factor 2, which is a major fetal growth factor. Recombinant Human IGF-II produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 67 amino acids and having a molecular mass of 75.05 kDa.

IGF-II see rHu IGF-2 Page 434

rHu IL-1a bioconfident grade



B

recombinant Human Interleukin-1alpha
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 20.2 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8782,0010	10 µg
A8782,0050	50 µg
A8782,0100	100 µg
A8782,1000	1 mg

Comment: Recombinant human IL-1a contains 159 amino acids and a 16 amino acid Histidine-based tag for a total length of 175 amino acids and has a predicted molecular mass of 20.2 kDa. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 24 and 25 kDa in SDS-PAGE.

rHu IL-1b



B

recombinant Human Interleukin-1beta
lyophilized from a concentrated (1 mg/ml) sterile solution containing 50 mM Phosphate buffer, pH 7.1 and 150 mM NaCl
from *E. coli*

M = 17.0 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8544,0002	2 µg
A8544,0010	10 µg

Comment: Recombinant Human Interleukin-1 beta is a non-glycosylated, polypeptide chain that contains 153 amino acids. rHu IL-1b is purified by proprietary chromatographic techniques.

rM IL-1b



B

recombinant Mouse Interleukin 1-beta
lyophilized without additives
from *E. coli*

M = 17.5 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8545,0002	2 µg
A8545,0010	10 µg

Comment: Recombinant Mouse Interleukin-1 beta is a non-glycosylated, polypeptide chain that contains 153 amino acids. The IL-1b is purified by proprietary chromatographic techniques.

rHu IL-2 bioconfident grade

B

recombinant Human Interleukin-2
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 17.5 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8786,0010	10 µg
A8786,0050	50 µg
A8786,0100	100 µg
A8786,1000	1 mg

Comment: Recombinant human IL-2 contains 133 amino acids and a 16 amino acid histidine-based tag for a total length of 149 amino acids and has a predicted molecular mass of 17.5 kDa. The recombinant protein migrates with an apparent molecular mass of 22 kDa in SDS-PAGE.

rHu IL-2

B

recombinant Human Interleukin-2
lyophilized at 1 mg/ml in 10 mM sodium
citrate, pH 3.0
from *E. coli*

M = 15.52 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 90 %
Assay (SDS-PAGE) min. 90 %

Order-No.	Quantity
A8277,0010	10 µg
A8277,0050	50 µg
A8277,1000	1 mg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Recombinant Human Interleukin-2 (rHu IL-2), also known as T-cell Growth Factor, is an immunomodulatory cytokine produced by stimulated T-cells. rHu IL-2 produced in *E. coli* is a single, non-glycosylated polypeptide chain that contains 134 amino acids and has a molecular mass of 15.52 kDa. rHu IL-2 has a Ser substitute for Cysteine at position 126.

rM IL-2

B

recombinant Mouse Interleukin-2
lyophilized after extensive dialysis
against 10 mM sodium citrate buffer to a
pH 4
from *E. coli*

M = 17.23 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8323,0002	2 µg
A8323,0020	20 µg
A8323,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Recombinant Mouse IL-2 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 149 amino acids.

rHu IL-3 bioconfident grade

B

recombinant Human Interleukin-3
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 17.2 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8791,0010	10 µg
A8791,0050	50 µg
A8791,0100	100 µg
A8791,1000	1 mg

Comment: Recombinant human IL-3 contains 133 amino acids and a 16 amino acid histidine-based tag for a total length of 149 amino acids and has a predicted molecular mass of 17.2 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 20-23 kDa in SDS-PAGE.

rHu IL-3

B

recombinant Human Interleukin-3
lyophilized with no additives
from *E. coli*

M = 15 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8321,0002	2 µg
A8321,0010	10 µg
A8321,0100	100 µg

Comment: Recombinant Human Interleukin-3 (rHu IL-3) is a cytokine produced by activated T-cells and mast cells. It acts upon a broad range of hematopoietic cells and in the nervous system and appears to play an important role in several chronic inflammatory diseases. rHu IL-3 produced in *E. coli* is a single, non-glycosylated polypeptide chain that contains 133 amino acids and has a molecular mass of 15.0 kDa.

rM IL-3



B

recombinant Mouse Interleukin-3
lyophilized without additives
from *E. coli*

$M = 15.1$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8337,0002	2 µg
A8337,0010	10 µg
A8337,0100	100 µg

Comment: Interleukin-3 (IL-3) is a cytokine produced by activated T-cells and mast cells that is active on a broad range of hematopoietic cells and in the nervous system and appears to be important in several chronic inflammatory diseases. Recombinant mouse IL-3 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 135 amino acids and having a molecular mass of 15.1 kDa.

rHu IL-4 bioconfident grade



B

recombinant Human Interleukin-4
Sterile filtered through a 0.2 µm filter.
Lyophilized from 30 mM Na-acetate, 0.7
NaCl, pH 5.3.
from *Hordeum vulgare*

$M = 17.2$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8795,0010	10 µg
A8795,0050	50 µg
A8795,0100	100 µg
A8795,1000	1 mg

Comment: Recombinant human IL-4 contains 130 amino acids and a 16 a.a. Histidine-based tag for a total length of 146 amino acids and has a predicted molecular mass of 17.2 kDa.

rHu IL-4



B

recombinant Human Interleukin-4
lyophilized with no additives
from *E. coli*

$M = 15$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8329,0002	2 µg
A8329,0010	10 µg
A8329,0100	100 µg

Comment: Interleukin (IL) 4, produced primarily by CD4(+) T cells is an immunomodulatory cytokine, which can inhibit the growth of tumour cells. IL-4 has been known as a Th2 cytokine and can act on B cells, T cells, and monocytes. IL-4 exhibits antitumor activity in rodent experimental gliomas, which is likely mediated by the actions of IL-4 on a variety of immune cells present in and around the tumor masses. Recombinant Human IL-4 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 130 amino acids and having a molecular mass of 15 kDa.

rM IL-4



B

recombinant Mouse Interleukin-4
lyophilized without additives
from *E. coli*

$M = 13.5$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8345,0002	2 µg
A8345,0010	10 µg
A8345,0100	100 µg

Comment: Recombinant Mouse IL-4 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 120 amino acids and having a molecular mass of 13.5 kDa.

rHu IL-5 bioconfident grade



B

recombinant Human Interleukin-5
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 15.3 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8799,0010	10 µg
A8799,0050	50 µg
A8799,0100	100 µg
A8799,1000	1 mg

Comment: Recombinant human IL-5 contains 115 amino acids and a 16 amino acid histidine-based tag for a total length of 131 amino acids and has a predicted molecular mass of 15.3 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 22 and 23 kDa in SDS-PAGE.

rHu IL-5



B

recombinant Human Interleukin-5
lyophilized from a conc. (1 mg/ml)
solution in water containing no additives
from *E. coli*

M = 26.52 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8546,0002	2 µg
A8546,0010	10 µg

Comment: Recombinant Human Interleukin-5 is a dimeric, non-glycosylated polypeptide chain that contains 132 amino acids. The IL-5 is purified by proprietary chromatographic techniques.

rHu IL-6 bioconfident grade



B

recombinant Human Interleukin-6
Sterile filtered through a 0.2 µm filter.
Lyophilized from 50 mM MES pH 6.5,
500 mM NaCl.
from *Hordeum vulgare*

M = 23.1 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8802,0010	10 µg
A8802,0050	50 µg
A8802,0100	100 µg
A8802,1000	1 mg

Comment: Recombinant human IL-6 contains 185 amino acids and a 16 amino acid histidine-based tag for a total length of 201 amino acids and has a predicted molecular mass of 23.1 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 23 - 24 kDa in SDS-PAGE.

rHu IL-6



B

recombinant Human Interleukin-6
Lyophilized from a sterile solution
containing 10 mM acetic acid.
from *E. coli*

M = 21 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute with 10 mM HCl at a concentration of 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8334,0005	5 µg
A8334,0020	20 µg
A8334,0100	100 µg

Comment: Cytokines of the IL-6/GCSF/MGF family are glycoproteins of about 170 to 180 amino acid residues that contain four conserved cysteine residues involved in two disulphide bonds. They have a compact, globular fold (similar to other interleukins), stabilized by two disulphide bonds. One half of the structure is dominated by a 4 alpha-helix bundle with a left-handed twist: the helices are anti-parallel, with 2 overhand connections, which fall into a 2-stranded anti-parallel beta-sheet. The fourth alpha-helix is important for the biological activity of the molecule. IL-6 is an important pro-inflammatory and immunoregulatory cytokine expressed by various cells. rHu IL-6 has been shown to inhibit the growth of early stage melanoma and to promote the proliferation of advanced stage melanoma cells in vitro. Recombinant Human Interleukin-6 (rHu IL-6) produced in *E. coli* is a single, non-glycosylated polypeptide chain that contains 184 amino acids and has a molecular mass of 21 kDa..

rM IL-6



B

recombinant Mouse Interleukin-6
lyophilized from a concentrated (1 mg/
ml) solution containing 50 mM
NH₄HCO₃, pH 8.0
from *E. coli*

M = 21.71 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in 100 mM acetic acid to 0.1 - 1.0 mg/ml to regain full activity, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8269,0002	2 µg
A8269,0010	10 µg
A8269,0100	100 µg

Comment: Interleukin (IL)-6 is an important proinflammatory and immunoregulatory cytokine expressed by various cells. Interleukin-6 has been shown to inhibit the growth of early stage and to promote the proliferation of advanced stage melanoma cells in vitro. Recombinant Mouse IL-6 is a single, non-glycosylated polypeptide chain containing 187 amino acids.

rHu IL-7 bioconfident grade



B

recombinant Human Interleukin-7
Steril filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 19.7 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8807,0010	10 µg
A8807,0050	50 µg
A8807,0100	100 µg
A8807,1000	1 mg

Comment: Recombinant human IL-7 contains 153 amino acids and a 16 amino acid histidine-based tag for a total length of 169 amino acids and has a predicted molecular mass of 19.7 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 19 and 21 kDa in SDS-PAGE.

rHu IL-7



B

recombinant Human Interleukin-7
lyophilized with no additives
from *E. coli*

M = 17.41 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8285,0002	2 µg
A8285,0010	10 µg
A8285,0100	100 µg

Comment: Interleukin 7 (IL-7), which is constitutively produced particularly by stromal cells from the bone marrow and thymus, plays a crucial role in T cell homeostasis. This cytokine is implicated in thymopoiesis since it sustains thymocyte proliferation and survival. It regulates peripheral naive T cell survival by modulating the expression of the anti-apoptotic molecule Bcl-2, and sustains peripheral T cell expansion in response to antigenic stimulation. Infection by the human immunodeficiency virus (HIV) leads to severe T lymphopenia and general immune dysfunction. Increased IL-7 plasma levels are generally observed in HIV-infected patients. Recombinant Human IL-7 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 172 amino acids and having a molecular mass of 17.41 kDa.

rM IL-7



B

recombinant Mouse Interleukin-7
lyophilized without additives
from *E. coli*

M = 15 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8260,0002	2 µg
A8260,0010	10 µg
A8260,0100	100 µg

Comment: Recombinant Mouse Interleukin-7 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 130 amino acids and having a molecular mass of 15.0 kDa.

rHu IL-9 bioconfident grade



B

recombinant Human Interleukin-9
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 16.2 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8811,0010	10 µg
A8811,0050	50 µg
A8811,0100	100 µg
A8811,1000	1 mg

Comment: Recombinant human IL-9 contains 127 amino acids and a 16 amino acid histidine-based tag for a total length of 143 amino acids and has a predicted molecular mass of 16.2 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as 3 bands with an apparent molecular mass of 20, 22 and 24 kDa in SDS-PAGE.

rM IL-9



B

recombinant Mouse Interleukin-9
lyophilized with no additives
from *E. coli*

M = 14.17 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8254,0002	2 µg
A8254,0010	10 µg
A8254,0100	100 µg

Comment: Interleukin-9 (IL-9) is known to regulate many cell types involved in T-helper type 2 responses classically associated with asthma, including B- and T-lymphocytes, mast cells, eosinophils and epithelial cells. Growing evidence obtained from human genomic analysis and antigen-challenged transgenic mice suggests that IL-9 is a candidate factor in immunoglobulin E (IgE) production and thus is thought to be associated with bronchial inflammation and bronchial hyperresponsiveness (BHR). Recombinant Mouse IL-9 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 127 amino acids and having a molecular mass of 14.17 kDa.

rHu IL-10



B

recombinant Human Interleukin-10
lyophilized from 10 mM sodium
phosphate, pH 7.5
from *E. coli*

M = 16.6 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (SDS-PAGE) min. 90 %

Order-No.	Quantity
A8273,0002	2 µg
A8273,0010	10 µg
A8273,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Interleukin-10 is produced by murine T-cells following their stimulation by lectins. The main source for B-cell-derived Interleukin-10 in mice are Ly-1 B-cells that express CD5 and CD11. Murine keratinocytes also produce IL10. In humans IL-10 is produced by activated CD8(+) peripheral blood T-cells, by T-helper CD4 (+) T-cell clones (resembling Th0, Th1, and Th2) after both antigen-specific and polyclonal activation, by B-cell lymphomas, and by monocytes following cell activation by bacterial lipopolysaccharides and mast cells. B-cell lines derived from patients with acquired immunodeficiency syndrome and Burkitt's lymphoma constitutively secrete large quantities of IL-10 into the conditioned medium. The synthesis of IL-10 by monocytes is inhibited by IL-4 and IL-10. Interleukin-10 Human Recombinant is a single, non-glycosylated polypeptide chain containing 161 amino acids.

rM IL-10



B

recombinant Mouse Interleukin-10
lyophilized without additives
from *E. coli*

M = 18.78 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8542,0002	2 µg
A8542,0010	10 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

rHu IL-11



B

recombinant Human Interleukin-11
lyophilized without additives
from *E. coli*

M = 19.26 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8305,0002	2 µg
A8305,0010	10 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Recombinant Human Interleukin-11 is a single, non-glycosylated polypeptide chain that contains 179 amino acids.

rHu IL-12



B

recombinant Human Interleukin-12
lyophilized from a 0.2 µm filtered solution
(0.5 mg/ml) in PBS, pH 7.4
from CHO cells

M = 75 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8547,0002	2 µg
A8547,0010	10 µg

Comment: Recombinant Human Interleukin-12 is a glycosylated disulfide linked heterodimeric polypeptide that contains 503 amino acids.

rHu IL-13



B

recombinant Human Interleukin-13
lyophilized without additives
from *E. coli*

M = 12.5 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8266,0002	2 µg
A8266,0010	10 µg
A8266,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

rHu IL-15



B

recombinant Human Interleukin-15
lyophilized from a conc. (1 mg/ml)
solution with 5 mM Tris, pH 8.0
from *E. coli*

M = 12.77 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8548,0002	2 µg
A8548,0010	10 µg

Comment: Recombinant Human Interleukin-15 is a single, non-glycosylated polypeptide chain that contains 114 amino acids. The IL-15 is purified by proprietary chromatographic techniques.

rM IL-15



B

recombinant Mouse Interleukin-15
lyophilized from a concentrated (1mg/
ml) solution with 10 mM Tris pH 8.0
from *E. coli*

M = 13.32 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8303,0002	2 µg
A8303,0010	10 µg
A8303,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Interleukin-15 is a pleiotropic pro-inflammatory cytokine that is expressed in several inflammatory disorders, including rheumatoid arthritis, psoriasis and pulmonary inflammatory diseases. IL-15 promotes activation of T cells, neutrophils and macrophages, and is critical to dendritic cell function in several model systems. Recent emerging data suggest that IL-15 may serve as a useful therapeutic target across a range of disease states. Advances in the past year highlight the beneficial effect of IL-15 neutralisation in models of psoriasis and diabetes. Further evidence for IL-15 expression and effector function has emerged across a range of rheumatic disorders, including juvenile inflammatory arthritis, rheumatoid arthritis and Kawasaki disease. IL-15 is a gamma-common cytokine, which plays an important role in the development, survival and proliferation of NK, NK T and CD8+ T cells. Recombinant Mouse IL-15 is a single, non-glycosylated polypeptide chain containing 115 amino acids.

rHu IL-16 bioconfident grade



B

recombinant Human Interleukin-16
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 15.5 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8814,0010	10 µg
A8814,0050	50 µg
A8814,0100	100 µg
A8814,1000	1 mg

Comment: Recombinant human IL-16 contains 130 amino acids and a 16 amino acid Histidine-based tag for a total length of 146 amino acids and has a predicted molecular mass of 15.5 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 22 kDa in SDS-PAGE.

rHu IL-16



B

recombinant Human Interleukin-16
lyophilized from 1 mg/ml in 10 mM
sodium phosphate, pH 7.5
from *E. coli*

M = 13.5 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 90 %
Assay (SDS-PAGE) min. 90 %

Order-No.	Quantity
A8258,0002	2 µg
A8258,0010	10 µg
A8258,0100	100 µg

Comment: Human IL-16 is a pleiotropic cytokine that functions as a chemoattractant and a modulator of T cell activation. H-IL-16 exists in a multimeric state. Human and Murine IL-16 share significant cross-reactivity. Recombinant H-IL-16 is comprised of 130 amino acids with a molecular weight of 13.5 kDa.

rM IL-16



B

recombinant Mouse Interleukin-16
lyophilized from a concentrated (1mg/
ml) solution with 10 mM sodium
phosphate, pH 7.5
from *E. coli*

M = 13.2 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8351,0002	2 µg
A8351,0010	10 µg
A8351,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Recombinant Mouse IL-16 is a proinflammatory cytokine inducing immunomodulatory effects of CD41 lymphocytes, monocytes, and eosinophils via CD4. Comparative analysis of murine and human IL-16 show a high degree of amino acid similarity. The highest similarity (82.1 %) was found in the C-terminal region. Chemotaxis experiments with IL-16 of murine and human origin, using murine splenocytes or human T lymphocytes as targets, showed cross-species motility. There is a high degree of structural and functional similarity between human and murine IL-16. Mouse IL-16 is comprised of 127 amino acids, with a molecular weight of 13.2 kDa.

rHu IL-17A



B

recombinant Human Interleukin-17A
lyophilized without additives
from *E. coli*

M = 30.25 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8249,0005	5 µg
A8249,0025	25 µg
A8249,0100	100 µg

Comment: Recombinant Human IL-17A produced in *E. coli* is a homodimeric, non-glycosylated polypeptide chain containing a total of 264 amino acids and having a molecular mass of 30.25 kDa.

rR IL-17A



B

recombinant Rat Interleukin-17A, CTLA-8
lyophilized from 10 mM sodium citrate,
pH 3.0
from *E. coli*

M = 30 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8306,0005	5 µg
A8306,0025	25 µg
A8306,0100	100 µg

Comment: Rat IL-17A (IL-17A), also known as CTLA-8, is a proinflammatory cytokine member of a six-species family of proteins (IL-17A-17F). Rat IL-17A protein is a homodimer consisting of two 134 amino acids peptides. IL-17A is secreted mainly by activated CD4+ and CD8+ T lymphocytes and acts through its receptor, IL-17R, to induce the expression of many mediators of inflammation, most strikingly, those that are involved in the proliferation, maturation and chemotaxis of neutrophils. Elevated levels of IL-17A have been associated with several conditions, including rheumatoid arthritis, airway inflammation, allograft rejection, inflammatory bowel disease, psoriasis, cancer and multiple sclerosis. There is 58 % identity between the amino acid sequence of human and rat IL-17A. Recombinant rat IL-17A produced in *E. coli* is a non-glycosylated disulfide-joined homodimer having a molecular mass of 30.0 kDa.

rHu IL-17E

B

recombinant Human Interleukin-17E
lyophilized without additives
from *E. coli*

M = 33.7 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8299,0005	5 µg
A8299,0025	25 µg
A8299,0100	100 µg

Comment: Recombinant Human Interleukin 17-E is a disulfide-linked homodimer comprised of two single, non-glycosylated polypeptide amino acid chains containing 146 amino acids each and having a molecular mass of 33.7 kDa. There are six known members of this family, IL-17A through IL-17F.

rR IL-17E

B

recombinant Rat Interleukin-17E
lyophilized without additives
from *E. coli*

M = 35.5 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in 10mM HCl at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8326,0002	2 µg
A8326,0010	10 µg
A8326,0100	100 µg

Comment: Rat IL-17E (IL-17E), is a proinflammatory cytokine member of a six-species family of proteins (IL-17A-17F). Rat IL-17E protein is a homodimer consisting of two 145 amino acids peptides. Recombinant rat IL-17E produced in *E. coli* is a non-glycosylated disulfide-joined homodimer having a molecular mass of 35.5 kDa.

rHu IL-17F

B

recombinant Human Interleukin-17F
lyophilized from 10 mM sodium citrate,
pH 3.0
from *E. coli*

M = 15 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8312,0005	5 µg
A8312,0025	25 µg
A8312,0100	100 µg

Comment: Recombinant Human Interleukin-17-F is a non-glycosylated protein consisting of 134 amino acids and a molecular weight of 15 kDa.

rHu IL-19

B

recombinant Human Interleukin-19
lyophilized from a concentrated (1 mg/
ml) solution in water containing 10 mM
sodium citrate, pH 5.0
from *E. coli*

M = 17.91 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8316,0002	2 µg
A8316,0010	10 µg
A8316,0100	100 µg

Comment: Interleukin-19 (IL-19) is a novel cytokine that was initially identified during a sequence data base search aimed at finding potential Interleukin-10 homologs. Interleukin-19 shares 21% amino acid identity with IL-10. The exon/intron structure of IL-19 is similar to that of the human IL-10 gene, comprising five exons and four introns within the coding region of the IL-19 cDNA. IL-19 shares a receptor complex with IL-20, indicating that the biological activities of these two cytokines overlap and that both may play an important role in regulating development and proper functioning of the skin. Unlike IL-10, which forms an intercalated dimer, the molecule of IL-19 is a monomer made of seven amphipathic helices, A-G, creating a unique helical bundle. Recombinant Human IL-19 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 155 amino acids and having a molecular mass of 17.91 kDa.

rHu IL-20 bioconfident grade



B

recombinant Human Interleukin-20
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 19.8 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8819,0010	10 µg
A8819,0050	50 µg
A8819,0100	100 µg
A8819,1000	1 mg

Comment: Recombinant human IL-20 contains 153 amino acids and a 16 amino acid histidine-based tag for a total length of 160 amino acids and has a predicted molecular mass of 19.8 kDa including his-tag. The recombinant protein migrates with an apparent molecular mass of 22 kDa in SDS-PAGE.

rHu IL-20



B

recombinant Human Interleukin-20
lyophilized from a conc. (1 mg/ml)
solution that contains 100 mM NaCl and
10 mM sodium citrat , pH 3
from *E. coli*

M = 35.21 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8346,0002	2 µg
A8346,0010	10 µg
A8346,0100	100 µg

Comment: Recombinant Human Interleukin-20 (rHu IL-20) is structurally related to IL-10, yet it appears to be an autocrine factor for keratinocytes that regulates their participation in inflammation. Recombinant Human IL-20 produced in *E. coli* is a homodimeric, non-glycosylated polypeptide chain that contains 2 x 153 amino acids and has a total molecular mass of 35.21 kDa.

rHu IL-21



B

recombinant Human Interleukin-21
lyophilized without additives
from *E. coli*

M = 15.46 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8342,0002	2 µg
A8342,0010	10 µg
A8342,0100	100 µg

Comment: Interleukin-21 (IL-21), expressed by activated CD4(+) T cells, is the newest member of the common gamma-chain family of cytokines, which includes IL-2, IL-4, IL-7, IL-9, IL-13, and IL-15. Its private receptor, IL-21R, is expressed on T, B, and NK cells. Within the B cell lineage, IL-21 regulates IgG1 production and cooperates with IL-4 for the production of multiple Ab classes in vivo. IL-21R has been shown to activate the Janus kinase/signal transducers and activators of transcription signaling pathway upon ligand binding. Initial studies have demonstrated that IL-21 has pleiotropic effects on the proliferation, differentiation, and effector functions of B, T, natural killer, and dendritic cells. Recombinant Human IL-21 produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 133 amino acids and having a total molecular mass of 15.46 kDa.

rHu IL-22 bioconfident grade



B

recombinant Human Interleukin-22
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 18.9 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8823,0010	10 µg
A8823,0050	50 µg
A8823,0100	100 µg
A8823,1000	1 mg

Comment: Recombinant human IL-22 contains 146 amino acids and a 16 amino acid histidine-based tag for a total length of 162 amino acids and has a predicted molecular mass of 18.9 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as 3 bands with an apparent molecular mass of 22, 24 and 26 kDa in SDS-PAGE.

rHu IL-22



B

recombinant Human Interleukin-22
Each mg contains 42 % mannitol and 31 % HSA.
from *E. coli*

M = 33.61 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8355,0002	2 µg
A8355,0010	10 µg
A8355,0100	100 µg

Comment: Recombinant Human IL-22 produced in *E. coli* is a non-disulfide-linked homodimeric, non-glycosylated polypeptide chain containing 2 x 146 amino acids and having a total molecular mass of 33.61 kDa.

rM IL-27 (p28)



B

recombinant Mouse Interleukin-27 (p28)
lyophilized from a concentrated (1mg/ml) solution with 10 mM sodium phosphate, pH 7.5
from *E. coli*

HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8340,0002	2 µg
A8340,0010	10 µg
A8340,0100	100 µg

Comment: Recombinant Mouse IL-27 (p28) subunit is a proinflammatory cytokine inducing immunomodulatory effects.

rHu IL-32α



B

recombinant Human Interleukin-32α
lyophilized from 50 mM sodium phosphate, pH 7.5
from *E. coli*

M = 14.9 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

Specification:

Endotoxin max. 0.1 EU/µg
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8348,0002	2 µg
A8348,0010	10 µg
A8348,0100	100 µg

Comment: Human IL-32α is one of approximately 6 splice variants of a gene cloned from the human lung carcinoma stable transfectant, A549-Rb. IL-32α has been shown to induce IL-8, TNF-α, and MIP-2 production from human and mouse macrophage cell lines. It is upregulated in activated T- and NK-cells, and IFN-γ-treated epithelial cells. Human recombinant IL-32α produced in *E. coli* is a 131 amino acid non-glycosylated polypeptide with a molecular mass of 14.9 kDa.

rHu IL-33



B

recombinant Human Interleukin-33
lyophilized from 1 mg/ml in 10 mM sodium phosphate buffer, pH 7.5
from *E. coli*

M = 18.13 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8290,0002	2 µg
A8290,0010	10 µg
A8290,0100	100 µg

Comment: Recombinant Human IL-33 produced in *E. coli* is a non-disulfide-linked homodimeric, non-glycosylated polypeptide chain consisting of 160 amino acids and having a total molecular mass of 18,13 kDa.

Imidazole

Glyoxalin, 1,3-Diaza-2,4-cyclopentadiene

C₃H₄N₂
M = 68.08 g/mol
CAS-No.: 288-32-4
HS-No.: 29332990
EC-No.: 206-019-2

Storage: RT
LGK: 8 B
Disposal: 3

Class / PG: 8/III
UN3263
WGK: 1
Danger
H314-H302-H361d
P305+P351+P338-P280-P301+P310



Melting point 88 - 90°C
Solubility (20°C) 663 g/L (H₂O)
Useful pH range 6.2 - 7.8
pK_a (20°C) 7.05

Imidazole Molecular biology grade

B

Specification:

DNases/RNases not detectable
Proteases/Phosphatases not detectable
Assay (titr.) min. 99.5 %
pH (0.1 M; H₂O; 25°C) 9.5 - 11.0
Loss on drying max. 0.2 %
Chloride max. 0.005 %
Sulfate max. 0.005 %

Al max. 0.0005 %
As max. 0.0001 %
Cd max. 0.0005 %
Fe max. 0.0005 %
Mn max. 0.0005 %
Pb max. 0.0005 %
Zn max. 0.0005 %

A (1 cm/0.1 M in H₂O)
260 nm max. 0.1
280 nm max. 0.1

Order-No.	Quantity
A1378,0010	10 g
A1378,0050	50 g
A1378,0100	100 g
A1378,0250	250 g

Imidazole ultrapure

B

Specification:

Assay (titr.) min. 99.5 %
pH (0.1 M; H₂O) 9.5 - 11.0 (25°C)
Loss on drying max. 0.2 %
Chloride max. 0.005 %
Sulfate max. 0.005 %
Al max. 0.0005 %

As max. 0.0001 %
Cd max. 0.0005 %
Fe max. 0.0005 %
Mn max. 0.0005 %
Pb max. 0.0005 %
Zn max. 0.0005 %

A (1 cm/0.1 M in H₂O)
260 nm max. 0.1
280 nm max. 0.1

Order-No.	Quantity
A3635,0010	10 g
A3635,0050	50 g
A3635,0100	100 g
A3635,0250	250 g

Imidazole Buffer grade

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 0.5 %
Chloride max. 0.05 %
Sulfate max. 0.05 %

Order-No.	Quantity
A1073,0100	100 g
A1073,0500	500 g
A1073,1000	1 kg
A1073,5000	5 kg

- Literature:** (1) Miles, E.W. (1977) *Methods Enzymol.* **47**, 431-442
(2) Storrie, B. & Madden, E.A. (1990) *Methods Enzymol.* **182**, 203-225
(3) Janknecht, R. et al. (1991) *Proc. Natl. Acad. Sci. USA* **88**, 8972-8976
(4) Ohkuma, Y. et al. (1995) *Mol. Cell. Biol.* **15**, 4856-4866
(5) Marrakchi, N. et al. (1995) *Biochim. Biophys. Acta* **1244**, 147-156
(6) Tavenier, M. et al. (1995) *Biochim. Biophys. Acta* **1244**, 351-356
(7) Eli, P. et al. (1999) *J. Biochem.* **125**, 790-794

Modification of histidyl residues in proteins by diethylpyrocarbonate.
Isolation of subcellular organelles.
Rapid and efficient purification of native histidine-tagged protein expressed by recombinant vaccinia virus.
Analysis of the role of TFIIIE in basal transcription and TFIIH-mediated carboxy-terminal domain phosphorylation through structure-function studies of TFIIIE-α.
Cerastocytin, a new thrombin-like platelet activator from the venom of the tunisian viper *Cerastes cerastes*.
Kinetics of adenylate metabolism in human and rat myocardium.
DNA denaturation with imidazole.

Comment: The high affinity of nickel-ions to histidine is suited very well for the purification of recombinant proteins, which are fused to a so-called 'His-tag' (usually 6 histidine residues at the N- or C-terminus of the protein). This modified protein can be expressed in vaccinia infected cells (3), bacteria (4), yeast or insect cells (5) and purified by nickel-NTA-columns. The bound protein can be eluted by imidazole, which competes with the histidine residues of the his-tagged protein for the nickel ions. The optimal concentration of imidazole differs depending on the protein, but ranges very often from 40 to 200 mM.
Imidazole is often used as buffer substance for enzymatic reactions. The working concentration ranges e. g. from 20 mM (2) to 50 mM (5), but it can also reach 100 mM (6). A concentration of 1 M reduces the melting temperature of DNA by approx. 13°C and changes the mobility in the gel electrophoresis (7).
Caution: DEPC reacts with the non-protonated form of imidazol (1) and N-Carboxyimidazole will be formed. DEPC hydrolyses and it might be important to determine the exact DEPC concentration. This can be done by spectrophotometric measurements after incubation with 10 mM imidazole at 230 nm (pH 7.5).
Stability: Solutions of imidazole are stable for several years (at least 6 years). It is not necessary to autoclave the solution and to store it protected from light. Buffers containing imidazole will turn to yellow. These solutions are still suitable to elute His-tag proteins.

Imidazole for synthesis

C

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 0.5 %

Order-No.	Quantity
A6615,0500	500 g
A6615,1000	1 kg
A6615,10006	6 x 1 kg
A6615,5000	5 kg

L-3-Imidazole-4-yl-alanine see L-Histidine base Page 409
4-Imidazolyl-L-alanine see L-Histidine hydrochloride monohydrate Page 409
2,2'-Iminodiethanol see Diethanolamine *BioChemica* Page 277

Immersion oil

Flash point 180°C
n 20°C/D 1.517

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: 2
Warning
H302
P262



Immersion oil Microscopy grade, fluorescence-free

C

highly UV-permeable

Order-No.	Quantity
A0699,0050	50 ml
A0699,0100	100 ml
A0699,0250	250 ml

Immersion oil fluorescence-free 'dropper-bottle'

B

Order-No.	Quantity
A3655,0005	5 ml
A3655,0015	15 ml

Immersion oil *BioChemica*

B

Order-No.	Quantity
A3494,0100	100 ml
A3494,0250	250 ml
A3494,0500	500 ml

Immersion oil from cedarwood

B

HS-No.: 38220000

Storage: RT
LGK: 10

WGK: 2
Warning
H317-H411
P280-P273-P262



Specification:

Density (d 20°C/4°C) 0.940 - 0.960
Suitability for microscopy ... complies
n 20°C/D 1.496 - 1.516

Order-No.	Quantity
A6586,0025	25 ml
A6586,0100	100 ml
A6586,0500	500 ml

Immunoassay Buffer

HS-No.: 38220000

Antibody Stabilizer-PBS

B

Antibody stabilizer (PBS-based)

Storage: 2-8°C
Avoid freezing!

- PBS-based stabilization buffer for long-term storage of antibodies and proteins
- suited for storage of coated ELISA plates
- stabilizes the structure of proteins during storage in the refrigerator
- ready-to-use; stabilised with 0.1 % ProClin® 300; pH 7.4

Order-No.	Quantity
A7148,0050	50 ml
A7148,0125	125 ml

Comment: This antibody stabilizing reagent shall not be stored frozen. In case it becomes frozen, an insoluble precipitate may form, which doesn't significantly impair its activity.

Antibody Stabilizer-Tris

B

Antibody Stabilizer (Tris-based)

Storage: 2-8°C
Avoid freezing!

- Tris-based stabilization buffer for long-term storage of antibodies and proteins
- suited for storage of coated ELISA plates
- stabilizes the structure of proteins during storage in the refrigerator
- ready-to-use; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A7135,0050	50 ml
A7135,0125	125 ml

Comment: This antibody stabilizing reagent shall not be stored frozen. In case it becomes frozen, an insoluble precipitate may form, which doesn't significantly impair its activity.

AppliCoat Plate Stabilizer

B

Stabilizer for coated surfaces in immunoassays

Storage: 2-8°C

- Solution for stabilizing coated surfaces in immunoassays
- preserves coated plates for 3 months up to 3 years depending on application
- Preservation of coated microtiter plates, polystyrene beads or glass slides
- free of proteins

Order-No.	Quantity
A7708,0050	50 ml
A7708,0125	125 ml
A7708,0500	500 ml

Comment: AppliCoat Plate Stabilizer is a ready-to-use reagent for the preservation of immobilized antibodies and proteins. AppliCoat Plate Stabilizer is simply added to the coated microtiter plates, polystyrene beads or glass slides. AppliCoat Plate Stabilizer seals the plates by forming a uniform stabilizing layer over antibodies and antigens immobilized on the solid phase. This layer is distinguished by good solubility without affecting assays performed at a later date. It is used for long-term storage of precoated plates and other surfaces used in immuno assays.

AppliCoat Plate Stabilizer is used directly after blocking and washing. AppliCoat Plate Stabilizer seals and stabilizes coated proteins and antibodies. After incubation of the microtiter plate or solid phase with AppliCoat Plate Stabilizer, the plate can be stored either directly under moist conditions or after drying of the plate or solid phase. The shelf life of the coated molecules is substantially expanded to typically 1 to 3 years when stored cool and dry. The assay buffer or the specimen can be added directly onto the treated plate (solid phase) for use in the assay. An additional washing step is not necessary.

Blocking Buffer I

B

Storage: -20°C
shipment at ambient temperature

- Solution for blocking unspecific binding sites in ELISA, EIA & Western blots
- efficiently blocks free protein binding sites on ELISA plates and transfer membranes
- Application in ELISA, EIA, RIA, Western Blot, Protein chips, Immuno-PCR and Immuno histochemistry
- based on chemically modified, low-molecular weight casein
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A7099,0050	50 ml
A7099,0125	125 ml
A7099,0500	500 ml

Comment: **Blocking Buffer I** is based on a low-molecular weight, highly purified casein with NaCl and Tween® and stabilized with 0.005 % Thimerosal. It does not contain glycosylated proteins.

Blocking Buffer I saturates free binding capacities on plastic consumables and other surfaces like ELISA plates and blotting membranes. Thus a reduction of unspecific binding on surfaces can be achieved. Efficiency of blocking is significantly improved in comparison to standard blocking procedures by a special production method, which leads to casein molecules with many different molecular sizes. **Blocking Buffer I** can be used in ELISA, EIA, RIA, Western blotting, immuno-PCR, protein arrays as well as immunohistochemistry. Immediately before use the buffer should be mixed thoroughly. **Blocking Buffer I** is *ready-to-use*. Repeated freezing and thawing is possible. After immobilisation of capture antibody or target protein **Blocking Buffer I** is applied without dilution in wells or on membranes. Incubation time has to be adopted depending on surface characteristics by the user. We recommend blocking over night at 4°C, but in many cases shorter incubation is also promising. After blocking the surface has to be washed with **Washing Buffer** to make it useable for the next working steps.

Blocking Buffer II EGrade

B

Storage: -20°C
shipment at ambient temperature

- THE **economical** solution for blocking unspecific binding sites in immuno assays
- efficiently blocks free protein binding sites on ELISA plates and transfer membranes
- Application in ELISA, EIA, RIA, Western Blot, Protein arrays, Immuno-PCR
- peptide-based
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.0

Order-No.	Quantity
A7516,0125	125 ml
A7516,0500	500 ml

Comment: **Blocking Buffer II EGrade** is the most economic solution (*Economical Grade*) for blocking of unspecific binding sites. It is THE cost-effective alternative to the casein-based Blocking Solution I.

In many assays, Blocking Buffer II EGrade prevents nonspecific and unwanted binding to surfaces. Blocking Buffer II EGrade saturates free binding sites on the surfaces of e.g. microtiter plates (plastic consumables), Western blotting membranes or slides, avoiding undesired binding of analytes or detection antibodies to surfaces. This leads to significantly reduced background and improved sensitivity of the assay. Suitable for many assays, Blocking Buffer II EGrade represents an excellent alternative to BSA-based blocking solutions. Problems with interactions and cross-reactivities arising from BSA, which are present in many blocking solutions, are avoided by the use of Blocking Buffer II EGrade, as it is free of serum proteins such as BSA.

Blocking Buffer III BSA

B

Storage: -20°C
shipment at ambient temperature

- THE Standard blocking reagent for many applications
- efficiently blocks free protein binding sites on plastics and other protein-binding surfaces
- Application in ELISA, EIA, Western Blot, Protein arrays, and Immuno-PCR
- based on bovine serum albumin (BSA) and Tween®
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.4

Order-No.	Quantity
A7252,0125	125 ml
A7252,0500	500 ml

Comment: Blocking Buffer III BSA saturates free binding capacities on surfaces of plastic consumables and other surfaces like ELISA plates and blotting membranes. Thus, a reduction of unspecific binding on surfaces can be achieved. Blocking Buffer III BSA is the standard surface blocker for many applications. If a blocker on basis of BSA (bovine serum albumin) is efficient enough for an assay, Blocking Buffer III BSA is the well-priced alternative to universally applicable and more complex blockers. Blocking Buffer III BSA can be used for ELISA, EIA, Western blotting, Immuno-PCR as well as protein arrays and immunohistochemistry.

Coating Buffer C pH 9.6

B

*Coating buffer for immunoassays
(carbonate-based)*

Storage: -20°C
shipment at ambient temperature

- Coating buffer for adsorptive immobilization of proteins
- suited for storage of coated ELISA plates
- for ELISA, EIA, RIA, Protein chips and Immuno-PCR
- PBS-based 10X concentrated buffer; dilute with water; pH 9.6
- non-stabilized - without preservatives, which may interfere with the assay
- ◆ Short shelf life! Please consider, when planning your assays!

Order-No.	Quantity
A7150,0125	125 ml

Coating Buffer PBS pH 7.4

B

Coating buffer for immunoassays (PBS-based)

Storage: -20°C
shipment at ambient temperature

- Coating buffer for adsorptive immobilization of proteins
- suited for storage of coated ELISA plates
- for ELISA, EIA, RIA, Protein chips and Immuno-PCR
- PBS-based 10X concentrated buffer; dilute with water; pH 7.4
- non-stabilized - without preservatives, which may interfere with the assay

Order-No.	Quantity
A7136,0125	125 ml

CrossDown Buffer

B

*Matrix effect reduction, Cross reactivity
reduction*

Storage: -20°C
shipment at ambient temperature

- Immunoassay buffer for reduction and minimisation of unspecific binding, cross-reactivities and matrix effects
- phosphate-free
- Application in ELISA, EIA, Western Blot, Immuno-PCR and Multianalyte-Immunoassay
- Replaces standard sample buffers
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A6485,0050	50 ml
A6485,0125	125 ml
A6485,0500	500 ml

Comment: The newly developed CrossDown Buffer lowers cross reactivities, unspecific binding and matrix effects in immunoassays like ELISA, EIA, Western blotting, immuno-PCR, protein arrays, multianalyte immunoassays and immunohistochemistry - depending on the characteristics of the assay type and the used antibodies. CrossDown Buffer is used instead of a sample buffer or antibody dilution buffer for the immunological reaction. CrossDown Buffer is not suitable for blocking of surfaces. For blocking of surfaces we recommend Blocking Buffer I (Order No. A7099). CrossDown Buffer is not suited as a sample buffer for electrophoresis. Examples of use: **ELISA** (dilution buffer for specimen and for the detection antibodies); **Western blotting** (dilution buffer for primary and secondary antibodies); **Immunohistochemistry** (dilution buffer for primary and secondary antibodies); **Protein arrays** (dilution buffer for specimen and for the detection antibodies).

CrossDown Peroxidase-Stabilizer



Peroxidase-Stabilizer, HRP-Stabilizer

Storage: 2-8°C

B

- combined Immunoassay buffer for reduction and minimisation of unspecific binding, cross-reactivities and matrix effects, and for protein stabilization.
- peroxidase conjugate stabilizer
- Application in ELISA: assay-diluent for one-step incubation assays
- substitute for HAMA blocker
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A8625,0050	50 ml
A8625,0125	125 ml
A8625,0500	500 ml

Comment: In one-step incubation assays the specimen is incubated directly with the detector-conjugate saving additional washing steps. This is very convenient and enables for very fast assay protocols in comparison to sequential procedures. Unfortunately this significantly increases the risk of interference, matrix effects and problems due to HAMAs (human anti-mouse antibodies) and rheumatoid factors. For this reason reliability suffers in favour of user-friendliness. CrossDown Peroxidase-Stabilizer solves this problem. CrossDown Peroxidase-Stabilizer enables assays with the highest reliability and robustness by minimising interference. At the same time CrossDown Peroxidase-Stabilizer is a premium stabilizer for peroxidase conjugates. Therefore conjugates can be stored directly in very low *ready-to-use* concentrations. Thus convenience and reliability are no longer incompatible.

Peroxidase-Stabilizer



Storage: 2-8°C

B

- dilution buffer and storage solution for peroxidase-conjugates
- Peroxidase-Stabilizer maintains enzyme activity
- protection and stability of your HRP-conjugate for years
- Peroxidase-Stabilizer maintains functionality of HRP-conjugate
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A8647,0050	50 ml
A8647,0125	125 ml
A8647,0500	500 ml

Comment: Stabilization of all active components is very critical to get reliable results with immunoassays. When assays are stored for long-term before use, it is especially important to ensure adequate stability. Peroxidase-Stabilizer works very well as a stabilizer. Additionally it is a very good assay buffer. This enables any user to store HRP conjugates directly in *ready-to-use* concentrations, even when these concentrations are very low. This saves pre-dilution steps before doing an assay. Peroxidase-Stabilizer maintains the activity of conjugates of antibodies and of Neutraavidin conjugated to HRP. Therefore it can be used in any assay, in which HRP is the detector enzyme. Peroxidase-Stabilizer decreases the variability often caused by changing shipping and storage conditions, thereby producing more consistent results with your diagnostic test kit. Peroxidase-Stabilizer can be easily incorporated into most assay protocols by substituting it for your conjugate diluent.

Sample Buffer T-

Antibody dilution buffer (detergent-free),
Sample buffer for immunoassays
(detergent-free)

Storage: -20°C
shipment at ambient temperature

B

- Dilution buffer for antibodies in immunoassays and **immunohistochemistry**
- Application in ELISA, EIA, RIA, Protein chips, Western Blots, Immuno-PCR and Immunohistochemistry
- for dilution of analytes, sample and detector antibody, respectively
- phosphate-free, detergent-free
- suited for alkaline phosphatase and peroxidase assays
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A7101,0050	50 ml
A7101,0125	125 ml
A7101,0500	500 ml

Sample Buffer T+

Antibody dilution buffer (with detergent),
Sample buffer for immunoassays (with
detergent)

Storage: -20°C
shipment at ambient temperature

B

- Dilution and sample buffer for antibodies in immunoassays
- Application in ELISA, EIA, RIA, Protein chips, Western Blots, Immuno-PCR
- for dilution of analytes, sample and detector antibody, respectively
- phosphate-free, contains Tween®
- suited for alkaline phosphatase and peroxidase assays
- *ready-to-use*; stabilised with 0.1 % ProClin® 300; pH 7.2

Order-No.	Quantity
A7134,0050	50 ml
A7134,0125	125 ml
A7134,0500	500 ml

Stripping Buffer I

B

Western blot Stripping buffer, Stripping buffer for Western blots

Storage: -20°C
shipment at ambient temperature

- Stripping buffer I removes antibodies from Western blot membranes
- ready-to-use; without β-mercaptoethanol and DTT; pH 2.8
- for reprobing on the same membrane
- stabilized with 0.1 % ProClin® 300

Order-No.	Quantity
A7140,0050	50 ml
A7140,0125	125 ml

Washing Buffer TrisT- (10X)

B

Washing buffer for immunoassays
(detergent-free)

Storage: -20°C
shipment at ambient temperature

- Washing buffer for ELISA, EIA, RIA, Proteinchips, Western blots, Immuno-PCR and Immunohistochemistry
- Tris-based 10X stock solution; dilute with water
- suited for ELISA washer
- stabilized with 0.1 % ProClin® 300; detergent-free; with 350 mM NaCl; pH 7.2

Order-No.	Quantity
A7137,0500	500 ml

Washing Buffer TrisT+ (10X)

B

Washing buffer for immunoassays (with detergent)

Storage: -20°C
shipment at ambient temperature

- Washing buffer for ELISA, EIA, RIA, Proteinchips, Western blots, Immuno-PCR
- Tris-based 10X stock solution; dilute with water
- suited for ELISA washer
- stabilized with 0.1 % ProClin® 300; with Tween® with 350 mM NaCl; pH 7.2

Order-No.	Quantity
A7158,0500	500 ml

Immunomycin see Ascomycin *BioChemica* Page 119
2-(4-Imidazolyl) ethylamine dihydrochloride see Histamine dihydrochloride Page 408

Incubator-Clean™

B

sterile solution

HS-No.: 38220000

Storage: RT

- Disinfectant solution for incubators and sterile benches.
- fully compatible with common work surfaces
- non toxic and biodegradable ingredients.

Order-No.	Quantity
A5230,0500	500 ml
A5230,1000	1 L
A5230,10006	6 x 1 L
A5230,5000RF	5 L

◆ Incubator-Clean™ is a registered trademark of AppliChem GmbH.

Comment: The problem of contamination in incubators and/or sterile work benches is often a serious one, leading to extensive damage. Incubator-Clean™ solution prevents contamination with and growth of fungi (and spores), bacteria (and spores, including Tuberculosis bacteria), viruses (including HIV and Hepatitis B) and mycoplasma. The active ingredients are quaternary benzylammonium compounds. The substance is free of mercury, formaldehyde, phenol or alcohol. It is non corrosive to aluminium, tin-plated iron, chrome, nickel, steel, high grade steel and copper. Furthermore, Incubator-Clean™ is non-toxic and biodegradable.

Recommended Use: Spray incubators once every 2 weeks. It is not necessary to empty the incubator before spraying, since the active substance is not volatile. Spray sterile benches once a day, or preferably before each laboratory worker begins to use the work area. The drying time is the reaction time!

Incuwater-Clean™

B

HS-No.: 38220000

Storage: 2-8°C

- Disinfectant solution for CO₂-incubator water baths.
- 100X concentrated solution. Use 50 ml per 5 liter of incubator water bath.
- for the prevention of microbial growth in incubator water baths.

Order-No.	Quantity
A5219,0100	100 ml

◆ Incuwater-Clean™ is a registered trademark of AppliChem GmbH.

Comment: The water required to create the humidity is a source of contamination which disperses in the incubator. In order to disinfect the water we recommend Incuwater-Clean™ solution, which contains a disinfectant that does not cause damage to the stainless steel tray, is non-toxic, non-volatile, and extremely effective. The water should be replaced with sterile water every two to four weeks, adding 50 ml of Incuwater-Clean™ per 5 liters of water. This product can be applied in normal water baths too.

1,2,3-Indantrione hydrate see Ninhydrin p. A. Page 567

Indicator Strips for pH value determination see pH-Fix Indicator Strips Page 621

Indigo carmine (C.I. 73015)

C

5,5'-Indigodisulfonic acid disodium salt

C₁₆H₈N₂Na₂O₈S₂

Storage: RT

WGK: 1

Transition interval pH 11.5 - 13.0
(blue - yellow)

M = 466.35 g/mol

LGK: 10 - 13

CAS-No.: 860-22-0

Disposal: 3

HS-No.: 32041200

EC-No.: 212-728-8

Specification:

Assay (photometr.)	min. 85 %
λ_{max}	608 - 612 nm
E 1 %/1 cm, λ_{max}	380 - 475
Loss on drying	max. 10 %

Order-No.	Quantity
A2366,0010	10 g
A2366,0025	25 g
A2366,0100	100 g

Indigo carmine - Solution

C

Ready-to-use indicator solution in 50 %
ethanol

HS-No.: 38220000

Storage: RT

Class / PG: 3/III

LGK: 3 A

UN1993

Disposal: 1

WGK: 1

Warning

H226

P210



Composition:

Indigo carmine (A2366) 0.25 %

Order-No.	Quantity
A0571,0100	100 ml
A0571,0500	500 ml

5,5'-Indigodisulfonic acid disodium salt see Indigo carmine (C.I. 73015) Page 451

(1S,2R,8R,8aR)-1,2,8-Indolizidinetriol see Swainsonine Page 789

2-(3-Indolyl)-ethylamine see Tryptamine Page 843

3-Indolylmethylglucosinolate potassium salt see Glucobrassicin HPLC grade Page 375

3-(3-Indolyl)-propionic acid BioChemica

B

Melting range 129 - 132°C
Solubility (20°C) hardly soluble
(H₂O)

C₁₁H₁₁NO₂

Storage: 2-8°C

WGK: 3

M = 189.22 g/mol

LGK: 10 - 13

CAS-No.: 830-96-6

Disposal: 4

HS-No.: 29339980

EC-No.: 212-600-1

Specification:

Assay (acidimetr.) min. 99 %

Order-No.	Quantity
A2565,0010	10 g
A2565,0050	50 g

3-Indoxyl-β-D-glucopyranoside trihydrate BioChemica

B

C₁₄H₁₇NO₆ · 3H₂O

Storage: -20°C

M = 349.34 g/mol

CAS-No.: 487-60-5

HS-No.: 29389090

Specification:

Assay	min. 99 %
Melting point	57 - 58°C

Order-No.	Quantity
A4760,0250	250 mg
A4760,1000	1 g

Infusorial earth see Kieselguhr calcined and purified, NF Page 471

Ingrain Blue 1 see Alcian blue 8 GS (C.I. 74240) Page 78

Inosine BioChemica

B

Hypoxanthine-9-β-D-ribofuranoside

 $C_{10}H_{12}N_4O_5$

Storage: RT

WGK: 1

Melting point 212 - 213°C (dec.)

 $M = 268.23$ g/mol

LGK: 10 - 13

Disposal: 3

CAS-No.: 58-63-9

HS-No.: 29349990

EC-No.: 200-390-4

Specification:

Assay min. 99 %

α20°C/D; 1 %, H₂O -51° - -53°

E 1 %/1 cm, 248 nm; pH 6 450 - 465

Heavy metals (as Pb) max. 0.001 %

Order-No.
Quantity

A0698,0010

10 g

A0698,0025

25 g

A0698,0100

100 g

meso-Inosit see myo-Inositol BioChemica Page 452

myo-Inositol BioChemica

B

meso-Inosit

 $C_6H_{12}O_6$

Storage: RT

WGK: 1

Melting point 224 - 227°C

 $M = 180.16$ g/mol

LGK: 10 - 13

Solubility (25°C) 140 g/L (H₂O)

CAS-No.: 87-89-8

HS-No.: 29061390

EC-No.: 201-781-2

Specification:

Assay (titr.) min. 99 %

Heavy metals (as Pb) max. 0.001 %

Loss on drying max. 0.5 %

Sulfated ash max. 0.1 %

Chloride max. 0.005 %

Sulfate max. 0.005 %

Order-No.
Quantity

A1716,0050

50 g

A1716,0100

100 g

A1716,0250

250 g

D-myo-Inositol-4,5-bisphosphate tetraammonium salt BioChemica

B

Ins(4,5)P₂
 $C_6H_{26}N_4O_{12}P_2$

Storage: -20°C

 $M = 408.12$ g/mol

CAS-No.: 69256-54-8

HS-No.: 29199000

Specification:

Assay (¹H-NMR) min. 94 %

Identity (¹H-, ³¹P-NMR) conforms

Order-No.
Quantity

A7681,00005

0.5 mg

A7681,0001

1 mg

D-myo-Inositol-4-monophosphate diammonium salt BioChemica

B

Ins(4)P

 $C_6H_{19}N_4O_9P$

Storage: -20°C

 $M = 294.20$ g/mol

CAS-No.: 142760-33-6

HS-No.: 29199000

Specification:

Assay (¹H-NMR) min. 94 %

Identity (¹H-, ³¹P-NMR) conforms

Order-No.
Quantity

A7647,00005

0.5 mg

A7647,0001

1 mg

D-myo-Inositol-1,3,4,5,6-pentakisphosphate decaammonium salt BioChemica

B

Ins(1,3,4,5,6)P₅
 $C_6H_{47}N_{10}O_{21}P_5$

Storage: -20°C

 $M = 750.20$ g/mol

CAS-No.: 91796-88-2

HS-No.: 29199000

Specification:

Assay (¹H-NMR) min. 94 %

Identity (¹H-, ³¹P-NMR) conforms

Order-No.
Quantity

A7696,00005

0.5 mg

A7696,0001

1 mg

D-myo-Inositol-3,4,5,6-tetrakisphosphate octaammonium salt BioChemica

B

Ins(3,4,5,6)P₄
 $C_6H_{40}N_8O_{18}P_4$

Storage: -20°C

 $M = 636.32$ g/mol

CAS-No.: 135027-59-7

HS-No.: 29199000

Specification:

Assay (¹H-NMR) min. 94 %

Identity (¹H-, ³¹P-NMR) conforms

Order-No.
Quantity

A7666,00005

0.5 mg

A7666,0001

1 mg

D-myo-Inositol-1,4,5-trisphosphate trisodium salt *BioChemica*

B

Ins(1,4,5)P₃

C₆H₁₂Na₃O₁₅P₃
M = 486.00 g/mol
CAS-No.: 108340-81-4
HS-No.: 29199000

Storage: -20°C

Specification:

Assay (¹H-NMR) min. 94 %
Identity (¹H-, ³¹P-NMR) conforms

Order-No.	Quantity
A7653,00005	0.5 mg
A7653,0001	1 mg

Ins(1,3,4,5,6)P₅ see D-myo-Inositol-1,3,4,5,6-pentakisphosphate decaammonium salt *BioChemica* Page 452
Ins(1,4,5)P₃ see D-myo-Inositol-1,4,5-trisphosphate trisodium salt *BioChemica* Page 453
Ins(3,4,5,6)P₄ see D-myo-Inositol-3,4,5,6-tetrakisphosphate octaammonium salt *BioChemica* Page 452
Ins(4,5)P₂ see D-myo-Inositol-4,5-bisphosphate tetraammonium salt *BioChemica* Page 452
Ins(4)P see D-myo-Inositol-4-monophosphate diammonium salt *BioChemica* Page 452

AC-INSECT



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Osmolality 350 - 380 MOSM/kg
Sterility complies
pH 6.0 - 6.4

Order-No.	Quantity
A8328,0100	100 ml
A8328,0500	500 ml

Comment: AC-INSECT is a serum-free medium designed and optimized for the culture of *Lepidoptera* spp. insect cells. (Class: Insecta; Order: Lepidoptera; Family: Noctuidae). The medium supports the growth and maintenance of both anchorage-dependent and suspension cultures of Sf-9 cells derived from the pupal ovarian tissue of the Fall Armyworm, *Spodoptera frugiperda* (J.E. Smith). The Sf-9 cell line is commonly used to isolate and propagate recombinant Baculoviral stocks and for the production of recombinant proteins. AC-INSECT is also a protein-free medium that provides excellent results in comparison to such media as TNM-FH (supplemented Grace's) in which 10 % Fetal Bovine Serum is added. AC-INSECT has shown excellent performance in the cultivation of high-V cells (i.e. *Trichoplusia ni* embryo cells) and the production of recombinant β-galactosidase.

recombinant Human Insulin see rHu Insulin Page 453

rHu Insulin



B

recombinant Human Insulin

HS-No.: 29371900

Storage: -20°C

Specification:

Endotoxin (USP Insulin) min. 26.0 Units/mg	Loss on drying (105°C; 16 h) max. 10 %	dried substance)
Activity (USP Insulin; HPLC) min. 27.5 Units/mg (on dried substance)	Proinsulin max. 0.001 %	Limit of high molecular weight proteins max. 1.0 %
Bioburden (total) max. 300 cfu/g	Residue on ignition max. 2.5 % (on dried substance)	Zn max. 1.0 %
	Total nitrogen (N) 14.5 - 16.5 % (on	

Order-No.	Quantity
A8211,0025	25 mg
A8211,0250	250 mg
A8211,1000	1 g

Comment: It is produced by a method base on recombinant DNA (r-DNA) technology. Practically insoluble in water and in ethanol. It dissolves in dilute minerals acids.

Insulin crystalline - porcine



B

HS-No.: 29371900

Storage: -20°C
Shipment: dry ice

Specification:

Endotoxin (bacterial) max. 10.0 EU/mg	 max. 1.0 %	Related compounds
Activity (HPLC) min. 27.0 IU/mg	Loss on drying (105°C; 16 h) max. 10 %	 Other max. 5 %
Bioidentity min. 26.0 IU/mg	Nitrogen 14.5 - 16.5 %	Zn max. 1.0 %
Bioburden max. 300 cfu/g	Proinsulin max. 0.001 %	
Identity complies	Residue on ignition max. 2.5 %	
Limit of high molecular weight proteins		

Order-No.	Quantity
A8246,0025	25 mg
A8246,0250	250 mg
A8246,1000	1 g

recombinant human Insulin Growth Factor-1 see rHu IGF-1 Page 433
recombinant Mouse Insulin-like Growth Factor-1 see rM IGF-1 Page 433
recombinant Rat Insulin-like Growth Factor-1 see rR IGF-1 Page 434
recombinantes humanas Insulin-like Growth Factor-2 see rHu IGF-2 Page 434
INT see Iodonitrotetrazolium chloride *BioChemica* Page 457
recombinant Human Interferon-γ see rHu IFN-γ Page 432
recombinant Mouse Interferon γ see rM IFN-γ Page 433
recombinant Human Interferon alpha 2a see rHu IFN-α-2a bioconfident grade Page 432
recombinant Human Interferon gamma see rHu IFN-γ bioconfident grade Page 432
recombinant Mouse Interferon-inducible Protein see rM IP-10 Page 458
recombinant Human Interleukin-10 see rHu IL-10 Page 439
recombinant Mouse Interleukin-10 see rM IL-10 Page 439
recombinant Human Interleukin-11 see rHu IL-11 Page 439
recombinant Human Interleukin-12 see rHu IL-12 Page 440
recombinant Human Interleukin-13 see rHu IL-13 Page 440
recombinant Mouse Interleukin-15 see rM IL-15 Page 440
recombinant Human Interleukin-15 see rHu IL-15 Page 440
recombinant Human Interleukin-16 see rHu IL-16 Page 441
recombinant Mouse Interleukin-16 see rM IL-16 Page 441
recombinant Human Interleukin-17A see rHu IL-17A Page 441
recombinant Rat Interleukin-17A see rR IL-17A Page 441
recombinant Human Interleukin-17E see rHu IL-17E Page 442

recombinant Rat Interleukin-17E see rIL-17E Page 442
 recombinant Human Interleukin-17F see rHu IL-17F Page 442
 recombinant Human Interleukin-19 see rHu IL-19 Page 442
 recombinant Human Interleukin-1alpha see rHu IL-1a bioconfident grade Page 434
 recombinant Human Interleukin-1beta see rHu IL-1b Page 434
 recombinant Mouse Interleukin 1-beta see rM IL-1b Page 434
 recombinant Human Interleukin-2 see rHu IL-2 Page 435
 recombinant Mouse Interleukin-2 see rM IL-2 Page 435
 recombinant Human Interleukin-20 see rHu IL-20 Page 443
 recombinant Human Interleukin-21 see rHu IL-21 Page 443
 recombinant Human Interleukin-22 see rHu IL-22 Page 444
 recombinant Mouse Interleukin-27 (p28) see rM IL-27 (p28) Page 444
 recombinant Human Interleukin-3 see rHu IL-3 Page 435
 recombinant Mouse Interleukin-3 see rM IL-3 Page 436
 recombinant Human Interleukin-32α see rHu IL-32α Page 444
 recombinant Human Interleukin-33 see rHu IL-33 Page 444
 recombinant Human Interleukin-4 see rHu IL-4 Page 436
 recombinant Mouse Interleukin-4 see rM IL-4 Page 436
 recombinant Human Interleukin-5 see rHu IL-5 Page 437
 recombinant Human Interleukin-6 see rHu IL-6 Page 437
 recombinant Mouse Interleukin-6 see rM IL-6 Page 438
 recombinant Human Interleukin-7 see rHu IL-7 Page 438
 recombinant Mouse Interleukin-7 see rM IL-7 Page 438
 recombinant Human Interleukin-9 see rHu IL-9 bioconfident grade Page 439
 recombinant Mouse Interleukin-9 see rM IL-9 Page 439

Iodine

Melting point 114°C
 Solubility (20°C) 290 mg/L (H₂O)

I₂
M = 253.81 g/mol
 CAS-No.: 7553-56-2
 HS-No.: 28012000
 EC-No.: 231-442-4

Storage: RT
 LGK: 10 - 13
 Disposal: 22

Class / PG: 6.1(8)/II
 UN3290
 WGK: 1
 Warning
 H332-H312-H400
 P302+P352-P273



Iodine sublimated p. A.

Specification:

Assay (titr.) min. 99.5 %
 Identity complies
 Non-volatile matter max. 0.1 %
 Chloride, Bromide max. 0.025 %

Order-No.	Quantity
A4735,0100	100 g
A4735,0500	500 g
A4735,1000	1 kg

C

Iodine pure Ph. Eur., USP

Specification:

Assay (titr.) 99.8 - 100.5 %
 Identity complies
 Non-volatile matter max. 0.05 %
 Chloride / Bromide (as Cl) ... max. 0.025 %

Order-No.	Quantity
A3251,0100	100 g
A3251,0250	250 g
A3251,0500	500 g
A3251,1000	1 kg
A3251,10006	6 x 1 kg

C

Iodine - Standard volumetric solutions

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

WGK: 1

Iodine - Standard volumetric solution (0.5 M)

0.5 mol/L (1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3309,0500	500 ml
A3309,1000	1 L
A3309,10006	6 x 1 L
A3309,2500	2.5 L
A3309,5000CT	5 L
A3309,5000PE	5 L

C

Iodine - Standard volumetric solution (0.25 M)

0.25 mol/L (0.5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A7138,0500	500 ml
A7138,1000	1 L
A7138,2500	2.5 L

C

Iodine - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4713,0500	500 ml
A4713,1000	1 L
A4713,10006	6 x 1 L
A4713,2500	2.5 L

Iodine - Standard volumetric solution (0.05 M)

C

0.05 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3323,0500	500 ml
A3323,1000	1 L
A3323,10006	6 x 1 L
A3323,2500	2.5 L
A3323,25004	4 x 2.5 L
A3323,5000CT	5 L
A3323,5000PE	5 L

Iodine - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.02 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3320,0500	500 ml
A3320,1000	1 L
A3320,2500	2.5 L

Iodine - Standard volumetric solution (0.005 M)

C

0.005 mol/L (0.01 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A6795,0500	500 ml
A6795,1000	1 L
A6795,2500	2.5 L

Iodine-Potassium iodide - Solution see Lugol's - Solution Page 497

Iodoacetamide BioChemica

B

Melting point 91 - 94°C

C₂H₄INO
M = 184.96 g/mol
CAS-No.: 144-48-9
HS-No.: 29241900
EC-No.: 205-630-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 9

WGK: 3
Warning
H317-H319-H335-H315
P302+P352-P305+P351+P338-
P304+P340-P280


Specification:

Assay (from N) min. 99 %
Loss on drying max. 6 %

Order-No.	Quantity
A1666,0025	25 g
A1666,0100	100 g
A1666,0250	250 g

◆ May darken in storage!

Literature: (1) Gurd, F.R. (1972) *Methods Enzymol.* **25**, 424-438
(2) Lane, L.C. (1978) *Anal. Biochem.* **86**, 655-664
(3) Marrakchi, N. *et al.* (1995) *Biochim. Biophys. Acta* **1244**, 147-156
(4) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

Carboxymethylation.
A simple method for stabilizing protein-sulfhydryl groups during SDS-gel electrophoresis.
Cerastocytin, a new thrombin-like platelet activator from the venom of the tunisian viper *Cerastes cerastes*.
Preparation of extracts from plants.

Comment: Iodoacetamide and Iodoacetate are well suited for the investigation of the active center of enzymes with sulfhydryl groups in its active center. The reaction conditions for the carboxymethylation may vary with every protein, which shall be modified by the corresponding reagents. Especially the optimal pH value and the concentration of the reagent (iodoacetamide, iodoacetate, chloroacetamide, chloroacetic acid) may vary (see table II in ref. 1).
In SDS polyacrylamide gel electrophoresis, the oxidation of sulfhydryl-containing proteins during electrophoresis may become a problem. Oxidation may non-reproducibly change the mobility of these proteins. Relief may come through reduction with DTE and subsequent alkylation with iodoacetamide of the proteins before loading the gel (2).
Iodoacetamide is used as a **protease inhibitor** too. It is added to several protease inhibitor cocktails in a concentration of 1 - 5 mM. At a concentration of 4 mM, e. g. the activity of the serine protease Cerastocytin has been inhibited by more than 95 % (3). Please note, that this inhibitor, like iodoacetate and N-Ethylmaleimide, will be inactivated by reducing agents such as DTT. Especially for the preparation of plant cell extracts, high concentrations of reducing agents have to be added to the homogenizing buffers (4).
Iodoacetamide may become yellowish upon longer storage!

Iodoacetic acid sodium salt *BioChemica*

B

Sodium iodoacetate

$C_2H_2I NaO_2$
 $M = 207.93$ g/mol
 CAS-No.: 305-53-3
 HS-No.: 29159000
 EC-No.: 206-165-7

Storage: 2-8°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

hygroscopic
 Danger
 H335-H301-H315-H318
 P305+P351+P338-P280-P261-
 P301+P310



Specification:

Assay (titr.) min. 98 %
 Heavy metals max. 0.001 %
 Solubility (2 %; MeOH) clear
 Loss on drying max. 1 %

Chloride max. 0.01 %
 Sulfate max. 0.01 %

Order-No.	Quantity
A2097,0010	10 g
A2097,0025	25 g
A2097,0100	100 g

♦ **May darken in storage!**

Literature: (1) Gurd, F.R. (1972) *Methods Enzymol.* **25**, 424-438

(2) Syvertsen, C. & McKinley-McKee, J.S. (1981) *Eur. J. Biochem.* **117**, 165-170
 (3) Leonard, J.L. & Visser, T.J. (1984) *Biochim. Biophys. Acta* **787**, 122-130

(4) Langley, S.D. *et al.* (1983) *J. Biol. Chem.* **258**, 7416-7424

(5) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

(6) Sambrook, J. & Russel, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition; page A4.42. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Carboxymethylation.

Affinity labelling of liver Alcohol dehydrogenase.

Selective modification of the active center of renal Iodthyronine 5'-Deiodinase by Iodoacetate.

Genetic variant of β -Glucuronidase in *Drosophila melanogaster*.

Preparation of extracts from plants.

Comment: Iodoacetamide and Iodoacetate are well suited for the investigation of the active center of enzymes with sulfhydryl groups in its active center (1-3). The reaction conditions for the carboxymethylation may vary with every protein, which shall be modified by the corresponding reagents. Especially the optimal pH value and the concentration of the reagent (Iodoacetamide, Iodoacetate, chloroacetamide, chloroacetic acid) may vary (see table II in ref. 1). Iodoacetate is used as a **protease inhibitor** too. It is added to several protease inhibitor cocktails in a concentration of 1 - 5 mM (e. g. ref. 4). Please note, that this inhibitor too, will be inactivated by reducing agents such as DTT. Especially for the preparation of plant cell extracts, high concentrations of reducing agents have to be added to the homogenizing buffers (5).

For the electrophoresis of RNA after denaturation with glyoxal/DMSO, Iodoacetate is added to the agarose gel as RNase-inhibitor at a final concentration of 10 mM. For the preparation of **RNase-free DNase**, incubate the DNase/RNase with Iodoacetate. 10 mg of DNase I are dissolved in 10 ml of 0.1 M Iodoacetate / 150 mM sodium acetate (pH 5.2) and incubated at 55°C for 45 minutes. Cool the solution to 0°C and add 1 M $CaCl_2$ (final concentration 5 mM). Dispense the DNase into small aliquots and store at -20°C. This treatment inactivates approximately 98 % of the RNase activity (6).

Iodoacetic acid N-hydroxysuccinimide ester *BioChemica*

B

Solubility (50 mg/ml DMF)
 clear

$C_6H_6INO_4$
 $M = 283.02$ g/mol
 CAS-No.: 39028-27-8
 HS-No.: 29280090

Storage: -20°C

Warning
 H335-H315-H319
 P261-P305+P351+P338



Specification:

Assay min. 95 %

Order-No.	Quantity
A7806,0010	10 mg
A7806,0050	50 mg
A7806,0100	100 mg

Iodobromide see Iodomono-bromide for synthesis Page 457

5-Iodo-2'-deoxyuridine *BioChemica*

B

IDU, Idoxuridine, 2'-Deoxy-5-iodouridine

$C_9H_{11}IN_2O_5$
 $M = 354.10$ g/mol
 CAS-No.: 54-42-2
 HS-No.: 29349990
 EC-No.: 200-207-8

Storage: 2-8°C

Warning
 H341-H361-H315-H319-H335
 P281-P261-P305+P351+P338



Specification:

Assay (titr.) min. 98 %
 α 20°C/D; 1 %, 1 M NaOH +27° - +31°
 Loss on drying max. 0.1 %
 pH (0.1 %; H_2O) 5.5 - 6.5

Order-No.	Quantity
A3152,0250	250 mg
A3152,0001	1 g
A3152,0005	5 g

Literature: (1) Prusoff, W.H. *et al.* (1979) *Antibiotics V*, 236-261. (F.E.Hahn ed.) Springer-Verlag Berlin, Heidelberg, New York.: 5-Iodo-2'-deoxyuridine.

(2) Prusoff, W.H. *et al.* (1984) *Antiviral Res.* **4**, 303-315

Physical and biological consequences of incorporation of antiviral agents into virus DNA.

Ideosin see Erythrosin B (C.I. 45430) Page 331

Iodoform pure

C

Triiodomethane

CHI_3
 $M = 393.73$ g/mol
 CAS-No.: 75-47-8
 HS-No.: 29033990
 EC-No.: 200-874-5

Storage: RT
 LGK: 10 - 13

Warning
 H335-H315-H319-H332-H302-H312
 P261-P305+P351+P338-P280



Specification:

Assay (HPLC) min. 99 %
 Loss on drying max. 1 %

Order-No.	Quantity
A2819,0050	50 g
A2819,0100	100 g
A2819,0250	250 g

Iodomobromide for synthesis

C

Bromoiodide, Iodobromide

Boiling point 116°C (dec.)
Melting point 37 - 40°C

BrI
M = 206.84 g/mol
CAS-No.: 7789-33-5
HS-No.: 28129000
EC-No.: 232-159-9

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/II
UN3260
WGK: 1
Danger
H335-H314
P305+P351+P338-P304+P340-P280-
P301+P330+P331

Specification:

Assay (iodometr.) min. 98 %
Solubility water-insoluble

Order-No.	Quantity
A2779,0050	50 g
A2779,0100	100 g
A2779,0250	250 g

Iodonitrotetrazolium chloride BioChemica

B

2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride, INT, Iodonitrotetrazolium violet

C₁₉H₁₃ClIN₅O₂
M = 505.69 g/mol
CAS-No.: 146-68-9
HS-No.: 29339980
EC-No.: 205-676-2

Storage: RT
protected from light

Specification:

Assay (titr.) min. 97 %
Melting point approx. 245°C (dec.)
Solubility (5 %; hot MeOH/H₂O 1:1)
..... clear, deep yellow

Order-No.	Quantity
A6248,0001	1 g
A6248,0005	5 g
A6248,0025	25 g

Iodonitrotetrazolium violet see Iodonitrotetrazolium chloride BioChemica Page 457

4-[3-(4-Iodophenyl)-2-(2,4-dinitrophenyl)-2H-5-tetrazolio]-1,3-benzene disulfonate see WST-3 BioChemica Page 868

4-[3-(4-Iodophenyl)-2-(4-nitrophenyl)-2H-5-tetrazolio]-1,3-benzene disulfonate see WST-1 BioChemica Page 867

2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride see Iodonitrotetrazolium chloride BioChemica Page 457

Ion-exchange cartridge (Stainless Steel) see Stainless Steel - Cartridge (AppliQUA) with Mixed-Bed Resin MBH 100 Page 186

Iinol see Butylated hydroxytoluene (BHT) Page 173

Ionomycin free acid BioChemica

B

C₄₁H₇₂O₉
M = 709.00 g/mol
CAS-No.: 56092-81-0
HS-No.: 29419000

Storage: -20°C
protected from light
LGK: 10 - 13

Warning
H302
P262-P260

Specification:

Assay min. 90 %

Order-No.	Quantity
A1304,0001	1 mg
A1304,0005	5 mg

Literature: (1) Liu, C.-m. & Hermann, T.E. (1978) *J. Biol. Chem.* **253**, 5892-5894

(2) Beeler, T.J. *et al.* (1979) *J. Biol. Chem.* **254**, 6229-6231

(3) Wollheim, C.B. & Pozzan, T. (1984) *J. Biol. Chem.* **259**, 2262-2267

(4) Kuznetsov, G. *et al.* (1992) *J. Biol. Chem.* **267**, 3932-3939

(5) Aagaard-Tillery, K.M. & Jelinek, D.F. (1995) *J. Immunol.* **155**, 3297-3307

Characterization of ionomycin as a calcium ionophore.

Effects of ionomycin on the calcium flux from the sarcoplasmic reticulum.

Correlation of the cytosolic calcium concentration and the insulin secretion.

The processing and export of secretory proteins depends on calcium.

Activation of a calcium dependent endonuclease in human B lymphocytes.

Comment: The antibiotic Ionomycin was isolated from *Streptomyces conglobatus*. It acts as a calcium ionophore. Calcium binds to the complex at a ratio of 1:1 and is transported through biological membranes. Binding of calcium is strongly influenced by the pH value. Virtually no calcium complexation is possible at pH values below 7. Maximum binding is achieved at pH 9.5. Under these conditions ionomycin binds twice the amount of calcium and is more selective than e.g. the calcium ionophore A23187 (1).

As a consequence, ionomycin shows a variety of physiological effects coupled to the function of calcium. For example, ATP-dependent calcium accumulation within the sarcoplasmic reticulum is inhibited (from concentrations 0.01 - 0.1 µM; Ref. 2). Known effects of ionomycin are the initiation of insulin secretion from an Insulinoma cell line (concentration 2 µM; Ref. 3), the inhibition of processing of secretory glycoproteins (concentration 3 µM; Ref. 4) or the induction of apoptosis in Burkitt lymphoma cells (concentration 1 µM; Ref. 5).

Prepare stock solutions of ionomycin 1 mM or 10 mM in 100 % DMSO. Store stock solutions at -20°C.

Ionomycin calcium salt BioChemica

B

from *Streptomyces conglobatus*

C₄₁H₇₀O₉Ca
M = 747.09 g/mol
CAS-No.: 56092-82-1
HS-No.: 29419000

Storage: -20°C
protected from light
LGK: 10 - 13

Warning
H302
P262-P260

Specification:

Assay (TLC) min. 98 %

Order-No.	Quantity
A2177,0001	1 mg
A2177,0005	5 mg

Literature: see Ionomycin free acid (A1304)

recombinant Mouse IP-10 see rM IP-10 Page 458

IPL 41 - Medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

IPL 41 - Medium

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A2027,1000	1 L
A2027,5000	5 L
A2027,9010	10 L
A2027,9050	50 L

B

IPL 41 - Medium

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1964,1000	1 L
A1964,5000	5 L
A1964,9010	10 L
A1964,9050	50 L

B

rM IP-10


recombinant Mouse Interferon-inducible
Protein, CXCL10, recombinant Mouse
IP-10
lyophilized without additives
from *E. coli*

M = 8.7 kDa
HS-No.: 29371900

Storage: -20°C

B

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Assay (RP-HPLC) max. 97 %
Assay (SDS-PAGE) max. 97 %

Order-No.	Quantity
A8354,0005	5 µg
A8354,0025	25 µg
A8354,0100	100 µg

Comment: Among CXC chemokines, IP-10 (CXCL10) has been identified to play an important role in several endocrinological autoimmune diseases such as Hashimoto's thyroiditis, Graves' disease and Type 1 diabetes mellitus. The chemokine IP-10 (interferon-inducible protein of 10 kDa) is a chemoattractant for CXCR3+ T cells, binds to the G protein-coupled receptor CXCR3, which is found mainly on activated T cells and NK cells, and plays an important role in Th1-type inflammatory diseases. IP-10 also binds to glycosaminoglycans (GAGs), an interaction thought to be important for its sequestration on endothelial and other cells. Recombinant Mouse IP-10 produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 77 amino acids and having a molecular mass of 8.7 kDa.

IPTG

Isopropyl β-D-thiogalactopyranoside

C₉H₁₈O₅S
M = 238.30 g/mol
CAS-No.: 367-93-1
HS-No.: 29329900
EC-No.: 206-703-0

Storage: -20°C
protected from light
Shipment: ambient temperature
LGK: 10 - 13

Melting point 110 - 112°C

IPTG Molecular Biology grade

Specification:
DNases/RNases/Proteases not detectable
Assay min. 99 %
α20°C/D; 1 %, H₂O -31° - -33°
pH (5 %; H₂O) 5.5 - 6.5
Dioxane not detectable
Water (K.F.) max. 0.3 %

Order-No.	Quantity
A4773,0001	1 g
A4773,0005	5 g
A4773,0025	25 g
A4773,0050	50 g
A4773,0100	100 g

B

IPTG BioChemica

Specification:
Assay min. 99 %
α20°C/D; 1 %, H₂O -31° - -33°
pH (5 %; H₂O) 5.5 - 6.5
Dioxane max. 0.0001 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A1008,0001	1 g
A1008,0005	5 g
A1008,0025	25 g
A1008,0050	50 g
A1008,0100	100 g

B

Literature: (1) Yansura, D.G. & Henner, D.J. (1984) *Proc. Natl. Acad. Sci. USA* **81**, 439-443
(2) Cho, S. *et al.* (1985) *Biochem. Biophys. Res. Com.* **128**, 1268-1273

Use of the *E.coli lac* repressor and operator to control gene expression in *B. subtilis*.
Effect of IPTG concentration on the level of *Lac*-Operon induction in steady state *E. coli*.

Comment: The lactose-operon from *E. coli* is under negative control of the *Lac*-repressor protein, which specifically binds to the operator of the *E. coli*-genom. The most commonly used synthetic inducer of the *Lac*-operon is IPTG since it is both active at very low concentrations and not subject to enzymatic degradation. The final concentration differs from author to author (0.1 mM (2) - 1 mM (1) IPTG in LB-medium). For preparing a stock solution dissolve 100 mM or 500 mM IPTG in water or buffer, sterilize by filtration through a 0.22 µm filter and store at -20°C.

IPTG nonanimal origin



B

Specification:

Assay min. 99.5 %
 α 20°C/D; 1 %, H₂O -29° - -33°
 Solubility (5 %; H₂O) clear, colorless
 Dioxane not detectable

Water (K.F.) max. 0.5 %

Order-No.	Quantity
A7211,0001	1 g
A7211,0005	5 g
A7211,0025	25 g

Iron(II) chloride tetrahydrate

Solubility (10°C) approx. 1.6 kg/L (H₂O)

FeCl₂ · 4H₂O
 $M = 198.81 \text{ g/mol}$
 CAS-No.: 13478-10-9
 HS-No.: 28273920
 EC-No.: 231-843-4

Storage: RT
 LGK: 10 - 13
 Disposal: 15

WGK: 1
 hygroscopic
 Danger
 H302-H318-H315
 P280-P313-P305+P351+P338-
 P302+P352



Iron(II) chloride tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 Sulfate max. 0.01 %
 As max. 0.0005 %
 Cu max. 0.002 %
 Fe(III) max. 0.2 %
 Mn max. 0.005 %

Pb max. 0.001 %
 Zn max. 0.005 %

Order-No.	Quantity
A3584,0100	100 g
A3584,0250	250 g
A3584,1000	1 kg
A3584,10006	6 x 1 kg
A3584,5000	5 kg

Iron(II) chloride tetrahydrate pure

C

Specification:

Assay (titr.) min. 98 %
 Sulfate max. 0.05 %
 As max. 0.0005 %
 Cu max. 0.005 %
 Pb max. 0.005 %

Order-No.	Quantity
A3557,0250	250 g
A3557,0500	500 g
A3557,1000	1 kg
A3557,10006	6 x 1 kg
A3557,5000	5 kg

Iron(II) chloride - Solution according to Stoeck-Staehler

C

HS-No.: 38220000

Storage: RT
 LGK: 8 B
 Disposal: 15

Class / PG: 8/II
 UN3264
 Danger
 H302-H318-H315
 P305+P351+P338-P313-P280-
 P302+P352



Composition:

Hydrochloric acid 37 % ... 20 ml/L
 Iron(II) chloride · 4H₂O 800 g/L

Order-No.	Quantity
A6438,0250	250 ml
A6438,0500	500 ml
A6438,1000	1 L
A6438,10006	6 x 1 L

Iron(III) chloride hexahydrate

Ferrichloride hexahydrate

FeCl₃ · 6H₂O
 $M = 270.32 \text{ g/mol}$
 CAS-No.: 10025-77-1
 HS-No.: 28273920
 EC-No.: 231-729-4

Storage: RT
 LGK: 10 - 13
 Disposal: 15

WGK: 1
 hygroscopic
 Danger
 H318-H315-H302
 P302+P352-P280-P305+P351+P338-
 P313



Melting point 37°C

Solubility (20°C) 920 g/L (H₂O)

Iron(III) chloride hexahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 Free acid max. 0.3 %
 Phosphate max. 0.005 %
 Sulfate max. 0.005 %
 As max. 0.0005 %
 Cu max. 0.005 %

Mn max. 0.1 %
 Na max. 0.001 %
 Pb max. 0.005 %
 Zn max. 0.005 %

Order-No.	Quantity
A3514,0250	250 g
A3514,0500	500 g
A3514,1000	1 kg
A3514,10006	6 x 1 kg
A3514,5000	5 kg

Iron(III) chloride hexahydrate pure

C

Specification:

Assay (titr.) min. 98 %
 Free acid max. 0.5 %
 Phosphate max. 0.01 %
 Sulfate max. 0.01 %
 As max. 0.001 %
 Pb max. 0.005 %

Order-No.	Quantity
A0869,0500	500 g
A0869,1000	1 kg
A0869,10006	6 x 1 kg
A0869,5000	5 kg
A0869,9010	10 kg
A0869,9025	25 kg

Iron(III) chloride - Solutions

HS-No.: 28273920

Storage: RT
LGK: 8 B
Disposal: 15

Class / PG: 8/III
UN2582
WGK: 1
Danger
H315-H318-H302
P305+P351+P338-P313


Iron(III) chloride - Solution (15 % Fe)

C

Specification:

Assay (iodometr.) min. 15 % Fe
Density (d 20°C/4°C) approx. 1.49
Free acid (HCl) max. 1.0 %
Identity complies

Sulfate max. 0.05 %
As max. 0.001 %
Pb max. 0.005 %

Order-No.
A3577,0250 250 ml
A3577,0500 500 ml
A3577,1000 1 L

Iron(III) chloride - Solution (10 % Fe)

C

Specification:

Assay (iodometr.) min. 10 % Fe
Density (d 20°C/4°C) approx. 1.29
Free acid (HCl) max. 0.5 %
Total N max. 0.005 %

Phosphate max. 0.005 %
As max. 0.0005 %
Fe(II) max. 0.005 %
Pb max. 0.005 %

Order-No.
A3542,0250 250 ml
A3542,0500 500 ml
A3542,1000 1 L

Iron(III) chloride - Solution (0.25 g/L) for BOD-determination

C

ready-to-use aqueous solution

HS-No.: 38220000

Storage: RT

Composition:

FeCl₃ · 6H₂O 250 mg/L

Order-No.
A1689,0500 500 ml
A1689,1000 1 L
A1689,5000 5 L

Iron(III) citrate hydrate

Citric acid iron(III) salt

C₆H₅O₇Fe · xH₂O
CAS-No.: 28633-45-6
HS-No.: 29181500
EC-No.: 249-117-0

Storage: RT
LGK: 10 - 13

WGK: 1

Solubility (20°C) 5 g/L (H₂O)

Iron(III) citrate hydrate Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) 16.5 - 18.5 % Fe
Identity complies

Cl max. 0.05 %
NH₄ max. 0.5 %
As max. 0.0005 %

Order-No.
A5175,0100 100 g
A5175,0250 250 g

Iron(III) citrate hydrate pure

C

Specification:

Assay (iodometr.) 16.5 - 18.5 % Fe
Identity complies
Cl max. 0.05 %
NH₄ max. 0.5 %
As max. 0.0005 %

Order-No.
A3387,0250 250 g
A3387,0500 500 g
A3387,1000 1 kg
A3387,10006 6 x 1 kg

Iron(III) nitrate nonahydrate

Ferric nitrate

Fe(NO₃)₃ · 9H₂O
M = 404.00 g/mol
CAS-No.: 7782-61-8
HS-No.: 28342980
EC-No.: 233-899-5

Storage: RT
LGK: 5.1 B
Disposal: 15

Class / PG: 5.1/III
UN1466
WGK: 1
Warning
H319-H272-H315
P302+P352-P305+P351+P338

Melting point 47°C
Thermal dec. 100°C

Iron(III) nitrate nonahydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
Free acid max. 0.3 %
Insoluble matter complies
pH (10 %; H₂O) 1.0 - 2.0

Chloride max. 0.0005 %
Phosphate max. 0.005 %
Sulfate max. 0.005 %
Cu max. 0.005 %
Mg max. 0.001 %
Mn max. 0.02 %
Pb max. 0.001 %
Zn max. 0.001 %

Order-No.
A3649,0250 250 g
A3649,0500 500 g
A3649,1000 1 kg

Iron(III) nitrate nonahydrate p. A.

C

Specification:

Assay (titr.)	min. 99 %	Cu	max. 0.005 %
Free acid	max. 0.3 %	Mg	max. 0.001 %
Chloride	max. 0.0005 %	Mn	max. 0.02 %
Phosphate	max. 0.005 %	Pb	max. 0.001 %
Sulfate	max. 0.005 %	Zn	max. 0.001 %

Order-No.	Quantity
A3502,0250	250 g
A3502,0500	500 g
A3502,1000	1 kg
A3502,10006	6 x 1 kg

Iron(III) nitrate nonahydrate pure

C

Specification:

Assay (titr.)	min. 98 %	Pb	max. 0.005 %
Chloride	max. 0.002 %	Zn	max. 0.002 %
Sulfate	max. 0.01 %		
Cu	max. 0.005 %		
Mn	max. 0.02 %		

Order-No.	Quantity
A2086,0500	500 g
A2086,1000	1 kg
A2086,10006	6 x 1 kg
A2086,5000	5 kg

Iron(III) nitrate - Solution (10 g/L Fe³⁺) in Nitric acid 2 M

C

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/II
UN3264
WGK: 1
Danger
H314
P313+P305+P351+P338-
P301+P330+P331-P303+P361+P353

Specification:

Fe 10 g/L ± 0.05 g/L

Order-No.	Quantity
A1790,0100	100 ml
A1790,0500	500 ml
A1790,1000	1 L

Iron(II) sulfate heptahydrate

Ferric sulfate

FeO₄S · 7H₂O
M = 278.02 g/mol
CAS-No.: 7782-63-0
HS-No.: 28332980
EC-No.: 231-753-5

Storage: RT
LGK: 10 - 13
Disposal: 15

WGK: 1
Warning
H315-H302-H319
P305+P351+P338


Melting point 64°C

Solubility (20°C) 400 g/L (H₂O)

Iron(II) sulfate heptahydrate BioChemica

B

Specification:

Assay (titr.)	min. 99.5 %	Chloride	max. 0.001 %
Heavy metals (as Pb)	max. 0.005 %	Phosphate	max. 0.001 %
Insoluble matter	complies	Fe(II)	max. 0.02 %
pH (5 %; H ₂ O; 20°C)	3.0 - 4.0	N	max. 0.001 %

Order-No.	Quantity
A1035,0500	500 g
A1035,1000	1 kg
A1035,5000	5 kg

Iron(II) sulfate heptahydrate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %	Pb	max. 0.001 %
Chloride	max. 0.001 %	Zn	max. 0.005 %
Phosphate	max. 0.001 %		
As	max. 0.0001 %		
Cu	max. 0.001 %		
Fe(II)	max. 0.02 %		
N	max. 0.001 %		

Order-No.	Quantity
A3586,0500	500 g
A3586,1000	1 kg
A3586,10006	6 x 1 kg
A3586,5000	5 kg
A3586,9010	10 kg
A3586,9025	25 kg

Iron(II) sulfate heptahydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.5 - 104.5 %	Fe(II)	max. 0.3 %
Identity	complies	Hg	max. 0.0003 %
pH (5 %; H ₂ O; 20°C)	3.0 - 4.0	Mn	max. 0.1 %
Chloride	max. 0.02 %	Ni	max. 0.005 %
As	max. 0.0003 %	Pb	max. 0.001 %
Cr	max. 0.005 %	Zn	max. 0.005 %
Cu	max. 0.005 %		

Order-No.	Quantity
A1359,0500	500 g
A1359,1000	1 kg
A1359,10006	6 x 1 kg
A1359,5000	5 kg
A1359,9010	10 kg
A1359,9025	25 kg

Iron(II) sulfate heptahydrate Technical grade

C

Specification:

Assay (titr.) min. 98 %
Chloride max. 0.01 %

Order-No.	Quantity
A7091,5000	5 kg
A7091,9010	10 kg
A7091,9025	25 kg

Iron(II) sulfate - Standard volumetric solution (1 M)

C

1 mol/L (1 N Solution) in Sulfuric acid 5 %

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 13

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3307,0500	500 ml
A3307,1000	1 L
A3307,2500	2.5 L
A3307,25004	4 x 2,5 L

Iscove's mod. Dulbecco's - Medium (IMDM)

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Iscove's mod. Dulbecco's - Medium (IMDM)

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A2028,1000	1 L
A2028,5000	5 L
A2028,9010	10 L
A2028,9050	50 L

Iscove's mod. Dulbecco's - Medium (IMDM)

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1909,1000	1 L
A1909,5000	5 L
A1909,9010	10 L
A1909,9050	50 L

Iscove's mod. Dulbecco's - Medium (IMDM)

B

without L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A2029,1000	1 L
A2029,5000	5 L
A2029,9010	10 L
A2029,9050	50 L

Iscove's mod. Dulbecco's - Medium (IMDM)

B

with L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1322,1000	1 L
A1322,5000	5 L
A1322,9010	10 L
A1322,9050	50 L

Isoacteosid HPLC grade

B

Isoverbascosid
from *Harpagophytum procumbens*
 $C_{29}H_{36}O_{15}$
 $M = 624.59 \text{ g/mol}$
CAS-No.: 61303-13-7
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A3790,0020	20 mg
A3790,0050	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Isoamyl alcohol

Isopentyl alcohol, 3-Methyl-1-butanol

$C_5H_{12}O$
 $M = 88.15$ g/mol
 CAS-No.: 123-51-3
 HS-No.: 29051900
 EC-No.: 204-633-5

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/III
 UN1105
 WGK: 1
 Warning
 EUH066-H335-H226-H332
 P210-P304+P340



Boiling point 131°C
 Density (20°C/4°C) 0.81
 Melting point -117°C
 Solubility (20°C) 25 g/L (H_2O)

Isoamyl alcohol Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (HPLC) min. 99 %
 Free acid max. 0.01 %
 Non-volatile matter max. 0.002 %
 Aldehydes max. 0.005 %
 Furfural max. 0.0001 %
 n-Amyl alcohol max. 0.5 %

Water (K.F.) max. 0.2 %
 Al max. 0.00005 %
 Ba max. 0.00001 %
 Cd max. 0.000005 %
 Co max. 0.00001 %
 Cr max. 0.000005 %
 Fe max. 0.00001 %

Mg max. 0.00001 %
 Mn max. 0.000005 %
 Ni max. 0.000005 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A2610,0100	100 ml
A2610,0250	250 ml
A2610,0500	500 ml
A2610,1000	1 L

Isoamyl alcohol BioChemica

B

Specification:

Assay (HPLC) min. 99 %
 Free acid max. 0.01 %
 Insoluble matter complies
 Non-volatile matter max. 0.002 %
 Aldehydes max. 0.005 %

Furfural max. 0.0001 %
 n-Amyl alcohol max. 0.5 %
 Water (K.F.) max. 0.2 %
 Fe max. 0.0001 %
 Pb max. 0.0001 %

Zn max. 0.0001 %

Order-No.	Quantity
A0875,0250	250 ml
A0875,0500	500 ml
A0875,1000	1 L
A0875,2500	2.5 L

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-48

Large- and small-scale Phenol extractions.

Isoamyl alcohol p. A.

C

Specification:

Assay (HPLC) min. 99 %
 Free acid max. 0.01 %
 Non-volatile matter max. 0.002 %
 Aldehydes max. 0.005 %
 Furfural max. 0.0001 %
 n-Amyl alcohol max. 0.5 %
 Water (K.F.) max. 0.2 %
 Al max. 0.00005 %
 Ba max. 0.00001 %

Cd max. 0.000005 %
 Co max. 0.00001 %
 Cr max. 0.000005 %
 Fe max. 0.00001 %
 Mg max. 0.00001 %
 Mn max. 0.000005 %
 Ni max. 0.000005 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A3611,0100	100 ml
A3611,0250	250 ml
A3611,0500	500 ml
A3611,1000	1 L
A3611,10006	6 x 1 L
A3611,2500	2.5 L
A3611,25004	4 x 2.5 L

Isobutanol

2-Methyl-1-propanol, iso-Butanol, Isobutyl alcohol

$C_4H_{10}O$
 $M = 74.12$ g/mol
 CAS-No.: 78-83-1
 HS-No.: 29051490
 EC-No.: 201-148-0

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/III
 UN1212
 WGK: 1
 Danger
 H335-H226-H318-H315-H336
 P210-P304+P340-P305+P351+P338-
 P302+P352



Boiling point 108°C
 Density (d 20°C/4°C) .. 0.80
 Melting point -108°C
 Solubility (20°C) 95 g/L (H_2O)

Isobutanol p. A.

C

Specification:

Assay (HPLC) min. 99 %
 Free acid max. 0.005 %
 Isobutylaldehyde max. 0.05 %
 n-Butyraldehyde max. 0.1 %
 Water (K.F.) max. 0.01 %

Al max. 0.00005 %
 Co max. 0.000005 %
 Cr max. 0.000005 %
 Cu max. 0.000005 %
 Fe max. 0.00001 %

Mn max. 0.000005 %
 Ni max. 0.000005 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A1150,0500	500 ml
A1150,1000	1 L
A1150,10006	6 x 1 L
A1150,2500	2.5 L

Isobutanol pure

C

Specification:

Assay (HPLC) min. 98.5 %
 Free acid max. 0.005 %
 Isobutylaldehyde max. 0.05 %
 Water (K.F.) max. 0.05 %

Order-No.	Quantity
A0433,1000	1 L
A0433,10006	6 x 1 L
A0433,2500	2.5 L

Isobutanol for synthesis

C

Specification:

Assay (titr.) min. 98 %
 Water (K.F.) max. 0.2 %

Order-No.	Quantity
A1246,1000	1 L
A1246,10006	6 x 1 L
A1246,2500	2.5 L
A1246,5000	5 L

Isobutyl alcohol see Isobutanol Page 463

N-Isobutyl-N-(4-methoxyphenylsulfonyl)glycyl hydroxamic acid see NNGH Page 576

3-Isobutyl-1-methylxanthine *BioChemica*

B

IBMX	$C_{10}H_{14}N_4O_2$ $M = 222.25$ g/mol CAS-No.: 28822-58-4 HS-No.: 29335995 EC-No.: 249-259-3	Storage: 2-8°C LGK: 10 - 13 Disposal: 3	Warning H302 P301+P310+P331-P313
Melting point	 202 - 203°C		


Specification:

Assay min. 98 %

Order-No.	Quantity
A0695,0500	500 mg
A0695,0001	1 g

Literature: (1) Ashcroft, S.J.H. *et al.* (1972) *FEBS Lett.* **20**, 263-266
(2) Kalderon, A.E. *et al.* (1980) *Histochemistry* **65**, 277-289

Cyclic nucleotide phosphodiesterase activity in normal mouse pancreatic islets.
Localisation of 3',5'-cyclic adenosine monophosphate phosphodiesterase (cAMP-PDEase) activity in isolated bovine thyroid plasma membranes.
(3) Bonifacino, J.S., Dasso, M., Harford, J.B., Lippincott-Schwartz, J. & Yamada, K.M. (eds.) (1998) *Current Protocols in Cell Biology*, page 23.4.11 (Suppl. 34) by John Wiley & Sons, Inc.

Comment: IBMX is an inhibitor of cAMP phosphodiesterase. Inhibition of this enzyme leads to an increase of the intracellular cAMP concentration. A good inhibitory effect is achieved at concentrations of 0.8 mM (1) or 1 mM (2) IBMX may be dissolved in 20 mM Tris - HCl (pH 7.8), 3 mM MgCl₂, 10 mM NaF buffer (2). Otherwise, IBMX is soluble in ethanol, DMSO and diluted, alkaline aqueous solutions (e. g. 0.1N NaOH), in water is hardly soluble. A 100 mM solution in water is prepared by dissolving 250 mg IBMX in 9 ml water and 5 to 10 ml of 10 N NaOH. After adjusting the volume to 11 ml, filter-sterilize and store aliquots at -20°C up to 2 months. Since IBMX is rather unstable in solution, it is recommended to prepare fresh solutions for each experiment.

L-Isoleucine

L-2-Amino-3-methylpentanoic acid	$C_6H_{13}NO_2$ $M = 131.18$ g/mol CAS-No.: 73-32-5 HS-No.: 29224985 EC-No.: 200-798-2	Storage: RT LGK: 10 - 13	WGK: nwg
Melting point	 279 - 280°C		
Solubility (20°C)	 32 g/L (H ₂ O)		

L-Isoleucine Cell culture grade

B

Specification:

Pyrogen test	 complies	Chloride	 max. 0.02 %
Assay (titr.)	 min. 99 %	Sulfate	 max. 0.02 %
α20°C/D; 4 %, 6 M HCl	 +39.0° - +41.8°	As	 max. 0.0001 %
Other amino acids	 max. 0.5 %	Fe	 max. 0.001 %
Ammonium	 max. 0.02 %	Pb	 max. 0.001 %

Order-No.	Quantity
A3642,0025	25 g
A3642,0100	100 g
A3642,0500	500 g
A3642,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Isoleucine *BioChemica*

B

Specification:

Assay (titr.)	 min. 99 %	Other amino acids	 max. 0.5 %	A (1 cm/ 1 M in 1 M HCl)	
α20°C/D; 4 %, 6 M HCl	 +39.0° - +41.8°	Chloride	 max. 0.02 %	260 nm	 max. 0.07
Heavy metals (as Pb)	 max. 0.001 %	Sulfate	 max. 0.02 %	280 nm	 max. 0.05
Insoluble matter	 complies				
Ammonia	 max. 0.02 %				

Order-No.	Quantity
A3677,0025	25 g
A3677,0100	100 g
A3677,0250	250 g
A3677,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Isoleucine pure Ph. Eur.

C

Specification:

Assay (titr.)	 98.5 - 101.0 %	Loss on drying	 max. 0.5 %	Fe	 max. 0.001 %
α20°C/D; 4 %, HCl 250 g/L; calc. on dried subst.	 +40.0° - +43.0°	Sulfated ash	 max. 0.1 %		
Appearance of solution	 complies	Other amino acids	 max. 0.5 %		
Heavy metals (as Pb)	 max. 0.001 %	Ammonium	 max. 0.02 %		
Identity	 complies	Chloride	 max. 0.02 %		
		Sulfate	 max. 0.03 %		

Order-No.	Quantity
A1440,0025	25 g
A1440,0100	100 g
A1440,0250	250 g
A1440,0500	500 g
A1440,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

Isooctane

Boiling point	 99°C	C_8H_{18} $M = 114.23$ g/mol CAS-No.: 540-84-1 HS-No.: 29011000 EC-No.: 208-759-1	Storage: RT LGK: 3 A Disposal: 1	Class / PG: 3/II UN1262 WGK: 1 Danger H336-H315-H225-H410-H304 P273-P403+P235-P210-P331-P301+P310-P240
Density (d 20°C/4°C)	 0.692			
Melting point	 -107°C			
n 20°C/D	 1.391			



Isooctane Residue analysis grade

C

Specification:

Assay (HPLC)	 min. 99.5 %
Acidity/Alkalinity	 max. 0.0005 meq/g
Non-volatile matter	 max. 0.0005 %
Water (K.F.)	 max. 0.02 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard)	 max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard)	 max. 10 ng/L

Order-No.	Quantity
A1625,2500	2.5 L
A1625,25004	4 x 2.5 L

Isooctane HPLC grade

C

*iso-Octane, 2,2,4-Trimethylpentane***Specification:**

Assay (HPLC)	min. 99.5 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	210 nm max. 0.3
Non-volatile matter	max. 0.0005 %	220 nm max. 0.1
Water (K.F.)	max. 0.01 %	230 nm max. 0.02
		240 nm max. 0.01
		250 nm max. 0.005

Order-No.	Quantity
A1627,1000	1 L
A1627,10006	6 x 1 L
A1627,2500	2.5 L
A1627,25004	4 x 2,5 L

Isooctane p. A.

C

Specification:

Assay (HPLC)	min. 99.5 %
Non-volatile matter	max. 0.001 %
Total S	max. 0.005 %
Water (K.F.)	max. 0.01 %
As	max. 0.00001 %
Cr	max. 0.00001 %
Cu	max. 0.00001 %
Fe	max. 0.00001 %
Mg	max. 0.00001 %
Pb	max. 0.00001 %
Zn	max. 0.00001 %

Order-No.	Quantity
A0653,0500	500 ml
A0653,1000	1 L
A0653,10006	6 x 1 L
A0653,2500	2.5 L
A0653,25004	4 x 2,5 L
A0653,5000	5 L
A0653,9010	10 L
A0653,9025BK	25 L
A0653,9025PE	25 L

Isooctane for synthesis

C

Specification:

Assay (HPLC)	min. 99.5 %
Water (K.F.)	max. 0.1 %

Order-No.	Quantity
A0654,1000	1 L
A0654,10006	6 x 1 L
A0654,2500	2.5 L
A0654,25004	4 x 2,5 L
A0654,5000	5 L
A0654,9010	10 L
A0654,9025BK	25 L
A0654,9025PE	25 L

Isooctane Technical grade

C

Specification:

Assay (HPLC)	min. 99 %

Order-No.	Quantity
A4999,2500	2.5 L
A4999,25004	4 x 2,5 L
A4999,5000	5 L
A4999,9010	10 L
A4999,9025BK	25 L
A4999,9025PE	25 L

Isorientin see Homoorientin HPLC grade Page 410
 Isopentane see 2-Methylbutane Page 537
 Isopentyl alcohol see Isoamyl alcohol Page 463
 Isopropanol see 2-Propanol (Isopropanol) Page 666
 Isopropanolamine see 1-Amino-2-propanol pure Page 89
 Isopropanol D₈ see 2-Propanol D₈ (Isopropanol D₈) Page 669
 Isopropylacetone see 4-Methyl-2-pentanone Page 541
 Isopropyl alcohol see 2-Propanol (Isopropanol) Page 666
 Isopropyl β-D-thiogalactopyranoside see IPTG Page 458
 Isopropyl ether see Diisopropyl ether Page 281
 (1R,2S,5R)-(-)-2-Isopropyl-5-methyl-cyclohexanol see (-)-Menthol crystalline pure Ph. Eur., USP Page 528

Isopropyl myristate pure Ph. Eur.

C

Myristic acid isopropyl ester, Isopropyl tetradecanoate

C₁₇H₃₄O₂
 M = 270.46 g/mol
 CAS-No.: 110-27-0
 HS-No.: 29159000
 EC-No.: 203-751-4

Storage: RT
 LGK: 10
 Disposal: 1

WGK: nwg

Density (20°C) 0.85 g/cm³
 Melting point 0 - 1°C
 Solubility (20°C) 0.05 mg/L (H₂O)

Specification:

Assay (HPLC)	min. 90.0 %	Water (K.F.)	max. 0.1 %
Acid value	max. 1.0		
Appearance of solution	complies		
Ash	max. 0.1 %		
Identity	complies		
Iodine value	max. 1.0		
Refractive index	1.434 - 1.437		
Saponification No.	202 - 212		
Viscosity	5 - 6 mPas		

Order-No.	Quantity
A6329,1000	1 L
A6329,10006	6 x 1 L
A6329,2500	2.5 L
A6329,25004	4 x 2,5 L
A6329,5000	5 L
A6329,9010	10 L
A6329,9025	25 L

Isopropylsulfonic acid sodium salt see 2-Propanesulfonic acid sodium salt IPC grade Page 664
 Isopropyl tetradecanoate see Isopropyl myristate pure Ph. Eur. Page 465

Isoquercitrin

Trifoliin, Quercetin-3-glucoside,
3,3',4',5,7-Pentahydroxyflavone-3- β -
glucoside
for origin please inquire

$C_{21}H_{20}O_{12}$
 $M = 464.38$ g/mol
CAS-No.: 21637-25-2
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Warning
H335-H302
P304+P340-P280-P301+P330+P331-
P261-P301+P312

**Isoquercitrin HPLC grade**

B

Specification:

Assay min. 99 %

Order-No.	Quantity
A2064,0020	20 mg
A2064,0020DOC	20 mg
A2064,0050	50 mg
A2064,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Isoquercitrin pure

B

Specification:

Assay min. 97 %

Order-No.	Quantity
A5319,0050	50 mg
A5319,0100	100 mg

1-(5-Isoquinolinylsulfonyl)-2-methylpiperazine dihydrochloride see H-7 BioChemica Page 395

Isorhamnetin HPLC grade

B

4'-O-Methylquercetin
from *Calendula officinalis*

$C_{18}H_{12}O_7$
 $M = 316.27$ g/mol
CAS-No.: 480-19-3
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A5304,0010	10 mg
A5304,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Isovaleryl-L-val-L-val-statiny-L-ala-statine see Pepstatin A Page 604
Isoverbacosid see Isoacteosid HPLC grade Page 462

Isovitexin HPLC grade

B

from *Saponaria officinalis*

$C_{21}H_{20}O_{10}$
 $M = 432.38$ g/mol
CAS-No.: 38953-85-4
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5305,0005	5 mg
A5305,0005DOC	5 mg
A5305,0010	10 mg
A5305,0010DOC	10 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Isoxanthohumol HPLC grade

B

from *Humulus lupulus*

$C_{21}H_{22}O_5$
 $M = 354.40$ g/mol
CAS-No.: 70872-29-6
HS-No.: 29329900

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A7831,0020	20 mg
A7831,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Itaconic acid pure

C

Methylene succinic acid

$C_5H_6O_4$

$M = 130.10$ g/mol

CAS-No.: 97-65-4

HS-No.: 29171990

EC-No.: 202-599-6

Storage: RT
LGK: 10 - 13

WGK: 1
Danger
H318
P313-P260-P305+P351+P338



Melting point 165 - 167°C

Specification:

Assay min. 99.5 %
Heavy metals (as Pb) max. 0.0005 %
Loss on drying max. 0.2 %
Sulfated ash max. 0.03 %
Chloride max. 0.001 %

Sulfate max. 0.002 %
Fe max. 0.0001 %

Order-No.	Quantity
A2857,0500	500 g
A2857,1000	1 kg
A2857,10006	6 x 1 kg
A2857,5000	5 kg

Jenner's stain



C

Eosin - Methylene Blue

CAS-No.: 62851-42-7
HS-No.: 32041200

Storage: RT
LGK: 10 - 13

WGK: 3

Specification:

Loss on drying max. 10 %
UV/VIS spectrum complies

Order-No.	Quantity
A8070,0010	5 g
A8070,0025	25 g
A8070,0100	100 g

Joklik - MEM, modified for spinner culture

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Joklik - MEM, modified for spinner culture

B

with Earle's salt (modified)
without L-Glutamine
without Calcium chloride
without Sodium hydrogen carbonate

Order-No.	Quantity
A1974,1000	1 L
A1974,5000	5 L
A1974,9010	10 L
A1974,9050	50 L

Joklik - MEM, modified for spinner culture

B

with Earle's salts (modified)
with L-Glutamine
without Calcium chloride
without Sodium hydrogen carbonate

Order-No.	Quantity
A1539,1000	1 L
A1539,5000	5 L
A1539,9010	10 L
A1539,9050	50 L

K252a BioChemica

B

from *Nocardiosis* sp.

$C_{27}H_{21}N_3O_5$

$M = 467.47$ g/mol

CAS-No.: 97161-97-2

HS-No.: 29349990

Storage: -20°C
protected from light
Shipment: wet ice

Specification:

Assay (TLC) min. 97 %
 λ_{max} (MeOH) 205, 250, 289, 334,

367 nm

Solubility (5 mg/ml Methylene chlor-
ide) clear

Order-No.	Quantity
A7627,0001	1 mg

Literature: (1) Hashimoto, S. (1988) *J. Cell Biol.* **107**, 1531-1539

(2) Delsite, R. & Djakiew, D. (1996) *J. Androl.* **17**, 481-490

(3) Morotti, A. *et al.* (2002) *Oncogene* **21**4885-4893

K-252a, a Potent Protein Kinase Inhibitor, Blocks NGF-induced Neurite Outgrowth and Changes in the Phosphorylation of Proteins in PC12h Cells.
Anti-Proliferative Effect of the Kinase Inhibitor K252a on Human Prostatic Carcinoma Cell Lines.
K252a inhibits the oncogenic properties of Met, the HGF receptor.

Comment: K252a is an alkaloid from fungi. This cell-permeable ATP analog inhibits several kinases: Tyrosin kinases (trk-family of the (proto-)oncogenes, Neurotrophin receptor; IC_{50} ca. 3 nM) and serine/threonine kinases (CaM Kinase, Phosphorylase Kinase; IC_{50} ca. 10 - 30 nM). According to this, the physiological effects are multifaceted, whereas the inhibition of the tyrosin kinases is highly specific. Other tyrosin kinases, such as the EGF or PDGF receptor and v-src and v-fms are inhibited at comparably high concentrations, if at all! The autophosphorylation of Met, the HGF receptor, is inhibited too. K252a promotes the myogenic differentiation, while neuronal differentiation of PC12 cells is inhibited.

Solubility and Stability: K252a is soluble in DMSO, dichloromethan and methanol. The dry substance is stored at -20°C (long term storage), but is stable at ambient temperature for approx. 2 weeks. Solutions may be stored for several days at +4°C (e.g. 4 μ M in DMSO) or approx. three months protected from light at -20°C.

K252b BioChemica

B

from *Nocardopsis* sp.

$C_{26}H_{19}N_3O_5$
 $M = 453.45$ g/mol
 CAS-No.: 99570-78-2
 HS-No.: 29349990

Storage: -20°C
 protected from light
 Shipment: wet ice

Specification:

Assay (TLC) min. 97 %
 λ_{max} (MeOH) 246, 291, 337, 371 nm

Order-No.
A7644,0001

Quantity
 1 mg

Literature: (1) Nakanishi, S. *et al.* (1986) *J. Antibiotics* **39**, 1066-1071
 (2) Gadbois, D.M. *et al.* (1992) *Proc. Natl. Acad. Sci. USA* **89**, 8626-8630
 (3) Blöchl, A. & Sirrenberg, C. (1996) *J. Biol. Chem.* **271**21100-21107
 (4) Pollack, S. *et al.* (1999) *Mol. Pharmacol.* **56**185-195
 (5) Rage, F. *et al.* (1999) *Endocrinology* **140**909-916

K-252b, c and d, potent inhibitors of protein kinase C from microbial origin. Multiple kinase arrest points in the G_1 phase of nontransformed mammalian cells are absent in transformed cells. Neurotrophins Stimulate the Release of Dopamine from Rat Mesencephalic Neurons via Trk and $p75^{LTR}$ Receptors. The Staurosporine-like Component L-753,000 (NB-506) Potentiates the Neurotrophic Effects of Neurotrophin-3 by Acting Selectively at the TrkA Receptor. BDNF and Neurotrophin-3 Enhance Somatostatin Gene Expression through a Likely Direct Effect on Hypothalamic Somatostatin Neurons.

Comment: K252b is a microbial alkaloid acting as a protein kinase inhibitor belonging to the family of Staurosporines, chemically belonging to the indolcarbazoles. These inhibitors competitively bind to the ATP-binding site in the kinase domain. K252b is non cell-permeable and inhibits ecto-kinases, such as protein kinase C (IC_{50} 38.3 nM), cAMP-dependent protein kinase, cGMP-dependent protein kinase and myosin light-chain kinase. It selectively potentiates the activation of the nerve growth factor receptors, TrkA, by neurotrophins, which play an important role in the maintenance of neurons. K252b arrests normal human skin fibroblasts approximately 4 hours after the transition from G_0 to G_1 in the cell cycle, but not transformed cells. In the brain, K252b seems to be a selective inhibitor of the NGF action, but without showing cytotoxic activity or loss of cells.

Solubility: K252b is soluble in methanol, DMSO or 0.01 N Na_2CO_3 .

K_2CO_3 see Potassium carbonate Page 637
 $K_2Cr_2O_7$ see Potassium dichromate Page 641
 K_2CrO_4 see Potassium chromate p. A. Page 640
 K_2HPO_4 see di-Potassium hydrogen phosphate anhydrous Page 646
 K_2SO_4 see Potassium sulfate Page 660

Kaempferol

Robigenin, Trifolitin
 from *Aesculus hippocastanum*

$C_{15}H_{10}O_6$
 $M = 286.24$ g/mol
 CAS-No.: 520-18-3
 HS-No.: 29329900

Storage: 2-8°C
 LGK: 10 - 13

Danger
 H301
 P301+P310



Kaempferol HPLC grade

B

3,4',5,7-Tetrahydroxyflavone

Specification:

Assay min. 99 %

Order-No.
A2065,0020

Quantity
 20 mg

A2065,0020DOC 20 mg
A2065,0050 50 mg
A2065,0050DOC 50 mg

Literature: (1) Ogawara, H. *et al.* (1989) *J. Antibiotics* **42**, 340-343

Blocking of tyrosin kinases with synthetical isoflavones and flavones.

Comment: Kaempferol is a flavonoid. It blocks the tyrosine kinase activity of the EGF receptor with a IC_{50} -value of 3.2 μ g/ml (1).

When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Kaempferol 97 % pure

B

3,4',5,7-Tetrahydroxyflavone

Specification:

Assay min. 97 %

Order-No.
A3288,0250

Quantity
 250 mg

A3288,0500 500 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Kaempferol-3-glucoside

Astragalin
from *Aesculus hippocastanum*

$C_{21}H_{20}O_{11}$
 $M = 448.38$ g/mol
CAS-No.: 480-10-4
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Kaempferol-3-glucoside HPLC grade

Specification:

Assay min. 99 %

Order-No.	Quantity
A2066,0010	10 mg
A2066,0010DOC	10 mg
A2066,0020	20 mg
A2066,0020DOC	20 mg

B

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Kaempferol-3-glucoside 97 % pure

Specification:

Assay min. 97 %

Order-No.	Quantity
A3312,0020	20 mg
A3312,0050	50 mg

B

Comment: Documents included: HPLC-DAD with UV spectrum.

Kalialaun see Potassium aluminium sulfate dodecahydrate Page 636
 $KAl(SO_4)_2 \cdot 12H_2O$ see Potassium aluminium sulfate dodecahydrate Page 636
Kanamycin see Kanamycin sulfate Page 469

Kanamycin sulfate

Kanamycin

$C_{18}H_{36}N_4O_{11} \cdot H_2SO_4$
 $M = 582.58$ g/mol
CAS-No.: 25389-94-0
HS-No.: 29419000

Storage: RT
LGK: 10 - 13

Danger
H360
P308+P313-P201



Kanamycin sulfate BioChemica

Specification:

Assay min. 750 I.U./mg
 $\alpha 20^\circ C/D; 1\%, H_2O$ +112° - +123°
Loss on drying (60°C) max. 1.5 % (1 Torr)
pH (1 %; H_2O) 6.5 - 8.5
Kanamycin B max. 4 %

Order-No.	Quantity
A1493,0005	5 g
A1493,0010	10 g
A1493,0025	25 g
A1493,0050	50 g

B

Literature: (1) Mays, D.L. *et al.* (1976) *J. Chromatography* **120**, 93-102

High-performance liquid chromatographic determination of Kanamycin.

Comment: Kanamycin sulfate is readily water-soluble and very stable as a dry powder. The solution is stable in the pH range from 6 - 8 as well and can be stored for 6 to 8 months at room temperature (loss of activity approx. 1 - 2 %). Autoclaving at 120°C (even for 1 hour) results in a loss of activity of 5 %. In contact with air, kanamycin changes its color without loss of activity. This change in color can be prevented by antioxidants. Kanamycin is active against gram positive and negative cocci and bacteria. Kanamycin sulfate contains approx. 98 % kanamycin A.

Kanamycin sulfate pure Ph. Eur., BP

Specification:

Assay (dried subst.) min. 750 I.U./mg
 $\alpha 20^\circ C/D; 1\%, H_2O$ +112° - +123°
Abnormal toxicity complies
Appearance white, crystalline powder

Identity complies
Loss on drying max. 1.5 %
Pyrogen test complies
Solubility complies
Sterility complies

Sulfated ash max. 0.5 %
pH (1 %; H_2O ; 25°C) 6.5 - 8.5
Kanamycin B complies
Sulfate 15.0 - 17.0 %

Order-No.	Quantity
A4789,0010	10 g
A4789,0025	25 g
A4789,0100	100 g

C

Kanamycin Esculin Azide Agar

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Ammonium ferric citrate 0.5 g/L
Esculin 1.0 g/L
Kanamycin 0.02 g/L
Peptones 25.3 g/L

Sodium azide 0.15 g/L
Sodium chloride 5.0 g/L
Sodium citrate 1.0 g/L

Specification:

pH before autoclaving approx. 7.0 (20°C)

Order-No.	Quantity
A5758,0500	500 g
A5758,5000	5 kg

Literature: (1) Mossel *et al.* (1978) *Arch. Lebensmittelhyg.* **29**, 121.

Comment: This selective medium is suitable for the isolation of enterococci.

Directions: Suspend 48 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Mix gently before pouring. Store the prepared medium at 2-8°C.

Kaolin see Kaolin Page 470

Kaolin

Kaolin	CAS-No.: 1332-58-7 HS-No.: 25070020 EC-No.: 310-127-6	Storage: RT LGK: 10 - 13	WGK: nwg

Kaolin pure Ph. Eur.

C

Specification:

Acidic/alkaline react. subst.	complies	Heavy metals (as Pb)	max. 0.005 %	Chloride	max. 0.025 %
Adsorption power	complies	Identity	complies	Sulfate	max. 0.1 %
Appearance	white to off-white powder	Microbiological test	complies	Ca	max. 0.025 %
HCl-soluble matter	max. 1 %	Organic substances	complies		
		Swelling power	complies		

Order-No.	Quantity
A6619,0500	500 g
A6619,1000	1 kg
A6619,10006	6 x 1 kg
A6619,5000	5 kg

Kaolin pure

C

Specification:

Acidic/alkaline react. subst.	complies	Identity	complies
Appearance	off-white powder	Microbiological test	complies
HCl-insoluble matter	max. 1 %	Organic impurities	complies
Heavy metals (as Pb)	max. 0.005 %		

Order-No.	Quantity
A4445,1000	1 kg
A4445,10006	6 x 1 kg
A4445,5000	5 kg

KBr see Potassium bromide Page 636

KCl see Potassium chloride Page 638

Keracyanin see Cyanidin-3-rutinoside HPLC grade Page 249

11-Keto-β-boswellic acid HPLC grade

B

3α-Hydroxy-urs-12-en-11-keto-23-oic acid
from *Boswellia serrata*

C₃₀H₄₆O₄
M = 470.69 g/mol
CAS-No.: 17019-92-0
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5306,0010	10 mg
A5306,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

α-Ketobutyric acid sodium salt BioChemica

B

2-Oxobutyric acid sodium salt

C₄H₅NaO₃
M = 124.07 g/mol
CAS-No.: 2013-26-5
HS-No.: 29183000
EC-No.: 217-937-8

Storage: 2-8°C
LGK: 10-13
Disposal: 3

WGK: 1
Warning
H319-H335-H315
P305+P351+P338-P261



Solubility (20°C) readily soluble
(H₂O)

Specification:

Assay (titr.) min. 98 %
Water (K.F.) max. 2 %

Order-No.	Quantity
A1945,0005	5 g
A1945,0010	10 g
A1945,0025	25 g

α-Ketoglutaric acid BioChemica

B

2-Oxoglutaric acid

C₅H₆O₅
M = 146.10 g/mol
CAS-No.: 328-50-7
HS-No.: 29183000
EC-No.: 206-330-3

Storage: 2-8°C
LGK: 10 - 13
Disposal: 4

WGK: 1
Danger
H318
P280-P305+P351+P338



Melting point 114 - 116°C

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 1 %
pH (1 %; H₂O; 20°C) 1.5 - 2.0

A (1 cm/1 % in H₂O)
430 nm max. 0.2

Order-No.	Quantity
A1138,0025	25 g
A1138,0100	100 g
A1138,0250	250 g

Literature: (1) Anderson, N. & Clydesdale, F. (1978) *J. Food Sci.* **43**, 1595-1597
(2) Rej, R. & Horder, M. (1983) *Methods Enzym. Anal.* **3**, 416-433

Analysis of Tryptophan utilizing its reaction with α-Ketoglutaric acid.
Aspartate Aminotransferase: Methods and analysis.

α-Ketoglutaric acid disodium salt dihydrate *BioChemica*

B

2-Oxoglutaric acid disodium salt
dihydrate

$C_5H_4Na_2O_5 \cdot 2H_2O$
 $M = 226.10$ g/mol
CAS-No.: 305-72-6
HS-No.: 29183000
EC-No.: 206-167-8

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
P262

Specification:

Assay (titr.) min. 98.5 %
Appearance white to nearly white
powder
Heavy metals (as Pb) max. 0.001 %
Identity (IR) complies

Loss on drying 12 - 16 %
Ammonium max. 0.02 %
Chloride max. 0.05 %
Sulfate max. 0.02 %
As max. 0.0001 %

Fe max. 0.003 %

Order-No.	Quantity
A6408,0025	25 g
A6408,0100	100 g
A6408,0250	250 g
A6408,1000	1 kg

α-Ketoglutaric acid monopotassium salt *BioChemica*

B

2-Oxoglutaric acid potassium salt

$C_5H_5KO_5$
 $M = 184.19$ g/mol
CAS-No.: 997-43-3
HS-No.: 29183000

Storage: 2-8°C

Specification:

Assay min. 98 %
pH (1 %; H_2O ; 20°C) 3 - 4
Loss on drying max. 1 %

A (1 cm/1 M in H_2O)
405 nm max. 0.1

Order-No.	Quantity
A1797,0050	50 g
A1797,0100	100 g
A1797,0250	250 g

α-Ketoglutaric acid sodium salt *BioChemica*

B

2-Oxoglutaric acid sodium salt

$C_5H_5NaO_5$
 $M = 168.08$ g/mol
CAS-No.: 22202-68-2
HS-No.: 29183000
EC-No.: 244-836-6

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 1 %
pH (0.5 %; H_2O ; 20°C) 3.6 - 4.0

A (1 cm/5 % in H_2O)
430 nm max. 0.2

Order-No.	Quantity
A1139,0010	10 g
A1139,0100	100 g

Comment: Literature and Comment: see α-Ketoglutaric acid (A1138).

α-Ketopropionic acid see Pyruvic acid Page 679

rHu KGF bioconfident grade



B

Sterile filtered through a 0.2 μm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 21.2$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/μg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8826,0010	10 μg
A8826,0050	50 μg
A8826,0100	100 μg
A8826,1000	1 mg

Comment: Recombinant human KGF contains 164 amino acids and a 16 amino acid histidine-based tag for a total length of 180 amino acids and has a predicted molecular mass of 21.2 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 30 and 38 kDa in SDS-PAGE.

$KHCO_3$ see Potassium hydrogen carbonate Page 645

KH_2PO_4 see Potassium dihydrogen phosphate Page 642

KI see Potassium iodide Page 654

Kieselguhr calcined and purified, NF

C

Infusorial earth, Diatom earth

CAS-No.: 91053-39-3
HS-No.: 38029000
EC-No.: 293-303-4

Storage: RT
LGK: 10 - 13

WGK: nwg
Warning
H373
P260



Specification:

Identity complies
In H_2O soluble matter max. 0.2 %
In HCl soluble matter max. 2.0 %
Loss on drying (105°C) max. 0.5 %

Loss on ignition (980°C) max. 2.0 %
Washable arsenic (As) max. 0.001 %
Washable lead (Pb) max. 0.001 %

with Hydrofluoric acid non volatile
matter max. 25 %

Order-No.	Quantity
A7745,1000	1 kg
A7745,5000	5 kg

Kinetin BioChemica

B

6-Furfurylaminopurine, N⁶-
Furfuryladenine

C₁₀H₉N₅O
M = 215.22 g/mol
CAS-No.: 525-79-1
HS-No.: 29349990
EC-No.: 208-382-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.0005 %
Residue on ignition max. 0.1 %

Order-No.	Quantity
A4907,0001	1 g
A4907,0005	5 g

King A Agar Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

hygroscopic

Composition:

Agar 13.0 g/L
Magnesium chloride 1.4 g/L
Peptones 19.6 g/L
Potassium sulfate 10.0 g/L

Specification:

pH before autoclaving ... approx. 7.1 (20°C)

Order-No.	Quantity
A7848,0500	500 g
A7848,5000	5 kg

Comment: This selective agar is suitable for the detection and differentiation of *Pseudomonas aeruginosa* on basis of pigment production. King A Agar enhances the production of piocyanin and inhibits the formation of fluorescein.

Directions: Suspend 44 g in 1 L of distilled water. Add 10 ml of glycerol and boil the suspension until the medium is dissolved completely. Dispense into final test tubes. Sterilize by autoclaving at 121°C for 15 minutes. Cool in slanted position. Store the prepared medium at 2-8°C.

KIO₃ see Potassium iodate Page 654

Kjeldahl tablets

Kjeldahl tablets (Missouri catalyst) 3.5 g/tablet

C

Solubility (20°C) 100 g/L (H₂O)
pH (100 g/L; H₂O; 20°C)
..... ~6,1

HS-No.: 38159090

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
H412
P273

Composition:

Copper sulfate 0.3 %
Potassium sulfate 48.4 %
Sodium sulfate 48.3 %

Specification:

Appearance bluish to greenish
tablet
Application test complies

Order-No.	Quantity
A7705,0250	250 Tab.
A7705,1000	1000 Tab.

Kjeldahl tablets (Missouri catalyst) 5 g/tablet

C

Solubility (20°C) 100 g/L (H₂O)
pH (100 g/L; H₂O; 20°C)
..... ~6,1

HS-No.: 38159090

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
H412
P273

Composition:

Copper sulfate 0.3 %
Potassium sulfate 48.4 %
Sodium sulfate 48.3 %

Specification:

Appearance bluish to greenish
tablet
Application test complies

Order-No.	Quantity
A7718,0250	250 Tab.
A7718,1000	1000 Tab.

Kjeldahl tablets (free of mercury and selenium) 3.5 g/tablet

C

Solubility (H₂O; 20°C) . partially soluble

HS-No.: 38159090

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
H412
P273

Composition:

Copper sulfate 1.8 %
Sodium sulfate + Potassium sulfate
..... 92.4 %
Titanium dioxide 2.8 %

Specification:

Appearance light grey to light
blue tablet
Application test complies

Order-No.	Quantity
A7734,0250	250 Tab.
A7734,1000	1000 Tab.

Kjeldahl tablets (free of mercury and selenium) 5 g/tablet

C

Solubility (H₂O; 20°C) . partially soluble

HS-No.: 38159090

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
H412
P273

Composition:

Copper sulfate 1.8 %
Sodium sulfate + Potassium sulfate
 92.4 %
Titanium dioxide 2.8 %

Specification:

Appearance light grey to light
blue tablet
Application test complies

Order-No.
A7756,0250
A7756,1000

Quantity
250 Tab.
1000 Tab.

Kjeldahl tablets for Wieninger method 3.5 g/tablet

C

Solubility (20°C) 200 g/L (H₂O)
pH (200 g/L; H₂O; 20°C)
 ~5

HS-No.: 38159090

Storage: RT
LGK: 10 - 13
Disposal: 17

WGK: 1
Warning
H373-H412
P273



Composition:

Copper sulfate 1.5 %
Selenium 1.5 %
Sodium sulfate 96.25 %

Specification:

Appearance grey tablet
Application test complies

Order-No.
A7778,0250
A7778,1000

Quantity
250 Tab.
1000 Tab.

* The grey color of the product is caused by the raw material and has no effect on the application.

Kjeldahl tablets for Wieninger method 5 g/tablet

C

Solubility (20°C) 200 g/L (H₂O)
pH (200 g/L; H₂O; 20°C)
 ~5

HS-No.: 38159090

Storage: RT
LGK: 10 - 13
Disposal: 17

WGK: 1
Warning
H373-H412
P273



Composition:

Copper sulfate 1.5 %
Selenium 1.5 %
Sodium sulfate 96.25 %

Specification:

Appearance grey tablet
Application test complies

Order-No.
A7801,0250
A7801,1000

Quantity
250 Tab.
1000 Tab.

* The grey color of the product is caused by the raw material and has no effect on the application.

Kligler-Iron-Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Ferric citrate 0.3 g/L
Glucose 1.0 g/L
Lactose 10.0 g/L

Peptones 26.4 g/L
Phenol red 0.05 g/L
Sodium chloride 5.0 g/L
Sodium thiosulfate 0.3 g/L

Specification:

pH before autoclaving
 approx. 7.4 (20°C)

Order-No.
A3949,0500

Quantity
500 g

Literature: (1) Kligler, I.J. (1917) *Am. J. Pub. Health* 7, 1042-1044

A Simple Medium for the Differentiation of Members of the Typhoid-Paratyphoid Group.

Comment: This medium is suitable for the differentiation of gram negative enteric bacteria on the basis of carbohydrate fermentation and the production of hydrogen sulphide.

Directions: Suspend 56 g in 1 L of distilled water. Boil the suspension until the medium is dissolved completely. Dispense into final containers. Sterilize by autoclaving at 121°C for 15 minutes. Cool in slanted position to form slants with deep butts. Store the prepared medium at 2-8°C.

KOH see Potassium hydroxide - Pellets Page 648

KOH - Solution see Potassium hydroxide - Solutions 25 % - 50 % Page 648

KOH - Standard volumetric solution see Potassium hydroxide - Standard volumetric solutions (aqueous solutions) Page 650

Kristenson's - Solution

C

Formic acid sodium formiate buffer

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 4

Class / PG: 8/III
UN3265
WGK: 1
Danger
H314
P280-P305+P351+P338



Composition:

Formic acid 200 ml/L
Sodium formiate 42.67 g/L

Specification:

pH (20°C) 2.2 - 2.7

Order-No.
A4181,1000
A4181,5000

Quantity
1 L
5 L

KT5720 BioChemica

B

semisynthetic derivative of K252a

C₃₂H₃₁N₃O₅
M = 537.61 g/mol
CAS-No.: 108068-98-0
HS-No.: 29419000

Storage: -20°C
protected from light
Shipment: wet ice

Specification:

Assay min. 97 %
Solubility (5 mg/ml MeOH) : clear, colorless

Order-No. Quantity
A7651,00001 0.1 mg

Literature: (1) Abraham, I. et al. (1994) *Cancer Res.* **54**, 5889-5894

(2) Mohri, T. et al. (1998) *Cell Structure Function* **23**, 255-264

(3) Tintut, Y. et al. (2000) *Circulation* **102**, 2636-2642

(4) Rosado, J.A. et al. (2001) *J. Biol. Chem.* **276**, 15666-15675

(5) Ryu, H. et al. (2005) *Proc. Natl. Acad. Sci. USA* **102**13915-13920

K252a, KT5720, KT5926, and U98017 Support Paclitaxel (Taxol)-dependent Cells and Synergize with Paclitaxel.
Rapid Adhesion and Spread of Non-adherent Colon Cancer Colo201 Cells Induced by the Protein Kinase Inhibitors K252a and KT5720.
TNF-α Promotes In Vitro Calcification of Vascular Cells via the cAMP Pathway.
Cyclic Nucleotides Modulate Store-mediated Calcium Entry through the Activation of Protein-tyrosine Phosphatases and Altered Actin Polymerization in Human Platelets.
Antioxidants modulate mitochondrial PKA and increase CREB binding to D-loop DNA of the mitochondrial genome in neurons.

Comment: KT5720 is a semi-synthetic, cell-permeable derivative of the indolocarbazole K252a. It selectively inhibits cAMP-dependent protein kinase (PKA) with an IC₅₀ of 56 nM. Since other kinases are not effected, KT5720 is a useful tool to examine the role of PKA in various cellular events: e.g. support of cell growth of Taxol-dependent cells (1), cell adhesion (2), calcification of vascular cells (3), modulation of calcium release from stores (4), and CREB-regulated transcription in neurons (5). KT5720 is soluble in Methanol and DMSO.

KT5823 BioChemica

B

semisynthetic derivative of K252A

C₂₉H₂₅N₃O₅
M = 495.53 g/mol
CAS-No.: 126643-37-6
HS-No.: 29349990

Storage: 2-8°C
protected from light

Specification:

Assay approx. 97 %

Order-No. Quantity
A7839,00001 0.1 mg
A7839,0001 1 mg

Comment: KT5823 is a strong and selective inhibitor of the cGMP-dependent protein kinase (PKG). It induces apoptosis. KT5823 is soluble in DMSO.

Kuromanin chloride HPLC grade

B

Cyanidin-3-glucoside chloride
from *Rubus fruticosus*

C₂₁H₂₁ClO₁₁
M = 484.84 g/mol
CAS-No.: 7084-24-4
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 97 %

Order-No. Quantity
A7888,0010 10 mg
A7888,0020 20 mg

Comment: Documents included: HPLC-DAD with UV spectrum

L-14 see rHu Galectin-1 Page 368

Laburnin see Cytisine HPLC grade Page 256

Lacmus pure (C.I. 1242)

C

Litmus

CAS-No.: 1393-92-6
HS-No.: 32030010

Storage: RT
LGK: 10 - 13
Disposal: 3

Transition interval pH 5.0 - 8.0 (red - violet)

Specification:

λ₁ (pH 5.0) 498 - 503 nm
λ₂ (pH 8.0) 580 - 585 nm
E 1 %/1 cm, λ₁ 10 - 25
E 1 %/1 cm, λ₂ 20 - 50
Loss on drying max. 10 % (110°C)

Order-No. Quantity
A2390,0005 5 g
A2390,0025 25 g
A2390,0100 100 g

Lacmus - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 38220000

Storage: 2-8°C

Composition:

Lacmus (A2390) approx. 4 % (20°C)

Order-No. Quantity
A0583,0100 100 ml
A0583,0500 500 ml

Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)

B

L-Lactic Dehydrogenase, LD-1, LAD-1, LDH-1, [E.C. 1.1.1.27], (S)-Lactate : NAD⁺ oxidoreductase

CAS-No.: 9001-60-9
HS-No.: 35079090

Storage: 2-8°C

supplied liquid as ammonium sulfate
suspension of 75 % in 20 mM Tris · HCl,
1 mM DTE, 1 mM EDTA, pH 8.0
from human heart

Specification:

Assay (LD-Electrophoresis) . min. 98 % (Helena
TITAN Kit)

Activity (37°C) min. 200 U/ml

Order-No.	Quantity
A6960,0010	10 U
A6960,0100	100 U

Comment: Unit Definition: One unit will catalyze the transformation of one micromole of L-lactate to pyruvate per minute at 37°C and pH 8.55.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)

B

LAD-2, LDH-2, L-Lactic Dehydrogenase, (S)-Lactate : NAD⁺ oxidoreductase, [E.C. 1.1.1.27], LD-2

CAS-No.: 9001-60-9
HS-No.: 35079090

Storage: 2-8°C

supplied liquid as ammonium sulfate
suspension of 60 % in 20 mM Tris · HCl,
1 mM DTE, 1 mM EDTA, pH 8.0
from human heart

Specification:

Assay (LD-Electrophoresis) . min. 90 % (Helena
TITAN Kit)

Activity (37°C) min. 200 U/ml

Order-No.	Quantity
A6968,0010	10 U
A6968,0050	50 U

Comment: Unit Definition: One unit will catalyze the transformation of one micromole of L-lactate to pyruvate per minute at 37°C and pH 8.55.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)

B

LDH-3, LD-3, LAD-3, (S)-Lactate : NAD⁺ oxidoreductase, [E.C. 1.1.1.27], Lactic Dehydrogenase

CAS-No.: 9001-60-9
HS-No.: 35079090

Storage: 2-8°C

supplied liquid as ammonium sulfate
suspension of 75 % in 20 mM Tris · HCl,
1 mM DTE, 1 mM EDTA, pH 7.5
from human heart

Specification:

Assay (LD-Electrophoresis) . min. 90 % (Helena
TITAN Kit)

Activity min. 300 U/ml

Order-No.	Quantity
A6976,0010	10 U
A6976,0050	50 U

Comment: Unit Definition: One unit will catalyze the transformation of one micromole of L-lactate to pyruvate per minute at 37°C and pH 8.55.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)

B

[E.C. 1.1.1.27], (S)-Lactate : NAD⁺ oxidoreductase, LAD-4, LDH-4, LD-4

CAS-No.: 9001-60-9
HS-No.: 35079090

Storage: 2-8°C

supplied liquid as ammonium sulfate
suspension
from human liver

Specification:

Assay (LD-Electrophoresis) . min. 95 % (Helena
TITAN Kit)

Activity (37°C) min. 100 U/ml

Order-No.	Quantity
A6985,0010	10 U
A6985,0025	25 U

Comment: Unit Definition: One unit will catalyze the transformation of one micromole of L-lactate to pyruvate per minute at 37°C and pH 8.55.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)

B

Lactic Dehydrogenase, LAD-5, [E.C. 1.1.1.27], LDH-5, (S)-Lactate : NAD⁺ oxidoreductase, LD-5

CAS-No.: 9001-60-9
HS-No.: 35079090

Storage: 2-8°C

supplied liquid as ammonium sulfate
suspension of 75 % in 50 mM Tris · HCl,
1 mM DTE, 1 mM EDTA
from human liver

Specification:

Assay (LD-Electrophoresis) . min. 98 %
Activity (37°C) min. 80 U/ml

Order-No.	Quantity
A6997,0100	100 U
A6997,0500	500 U

Comment: Unit Definition: One unit will catalyze the transformation of one micromole of L-lactate to pyruvate per minute at 37°C and pH 8.55.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

L-Lactate dehydrogenase, bacterial Technical grade

B

[E.C. 1.1.1.27]

supplied liquid in 3.2 M ammonium
sulfate, pH 7.0
of bacterial origin

M = ~140 kDa
HS-No.: 35079090

Storage: 2-8°C
Shipment: wet ice

Specification:

Activity min. 2000 U/ml

Order-No.	Quantity
A7979,0001	1 KU
A7979,0010	10 KU
A7979,0100	100 KU

Comment: The bacterial L- Lactate dehydrogenase is used in the metabolism of α-keto acids and α-hydroxy acids, respectively.

Unit definition: One unit is the amount of enzyme required to metabolize 1 μmol substrate per minute in 100 mM Tris buffer, pH 7.0 at 37°C. This technical enzyme grade is intended for use in chemical synthesis.

(S)-Lactate : NAD⁺ oxidoreductase see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1) Page 475

L(+)-Lactic acid (approx. 90 %) pure Ph. Eur., USP, Food grade

C

*Mixture of (S)-2-Hydroxypropane acid,
its condensation products and water*

C₃H₆O₃
M = 90.08 g/mol
CAS-No.: 79-33-4
HS-No.: 29181100
EC-No.: 201-196-2

Storage: RT
LGK: 10 - 13

WGK: 1
Danger
H318-H315
P280-P305+P351+P338



Specification:

Assay (titr.) 88.0 - 92.0 %
Appearance of substance complies
Density (20°C) 1.20 - 1.21 g/ml
Ether-insoluble subst. complies
Heavy metals (as Pb) max. 0.0005 %
Identity complies
Stereochem. purity (L-isomere)
 min. 95 %
Sulfated ash max. 0.01 %

Citric-, Oxalic-, Phosphoric acids
 complies
Readily carbon. subst. complies
Sugars & other red. subst.
 complies
Chloride max. 0.001 %
Sulfate max. 0.001 %
As max. 0.0001 %
Ca max. 0.02 %

Fe max. 0.001 %

Order-No.	Quantity
A3509,0500	500 ml
A3509,1000	1 L
A3509,10006	6 x 1 L
A3509,2500	2.5 L
A3509,25004	4 x 2.5 L
A3509,5000	5 L
A3509,9010	10 L

Lactic Acid Solution (Supplement) see Supplements for Microbiological Media Page 786

Lactic acid calcium salt see Calcium lactate pentahydrate Page 181

DL-Lactic acid lithium salt crystalline BioChemica

B

Lithium-DL-lactate

C₃H₅LiO₃
M = 96.01 g/mol
CAS-No.: 867-55-0
HS-No.: 29181100
EC-No.: 212-761-8

Storage: RT
LGK: 10 - 13

Specification:

Assay (titr.) min. 98 %
Solubility (1 %; H₂O) clear, colorless
Loss on drying max. 2 %

Order-No.	Quantity
A2184,0010	10 g
A2184,0025	25 g
A2184,0100	100 g

L(+)-Lactic acid lithium salt crystalline BioChemica

B

Lithium-L-lactate

C₃H₅LiO₃
M = 96.01 g/mol
CAS-No.: 27848-80-2
HS-No.: 29181100
EC-No.: 248-692-5

Storage: RT
LGK: 10 - 13

Specification:

Assay (titr.) min. 99 %
Solubility (1 %; H₂O) clear, colorless
Loss on drying max. 2 %

Order-No.	Quantity
A0982,0010	10 g
A0982,0025	25 g
A0982,0100	100 g

L-Lactic acid methyl ester see Methyl lactate Page 539

L(+)-Lactic acid sodium salt crystalline *BioChemica*

B

Sodium-L-lactate

$C_3H_5NaO_3$
 $M = 112.06$ g/mol
 CAS-No.: 867-56-1
 HS-No.: 29181100
 EC-No.: 212-762-3

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay (titr.) min. 99 %
 α 20°C/D; 1 %, H_2O -12° - -13°
 Heavy metals max. 0.0005 %
 Solubility (H_2O) readily soluble

Water (K.F.) max. 1.0 %

Order-No.	Quantity
A1004,0010	10 g
A1004,0050	50 g
A1004,0100	100 g

DL-Lactic acid sodium salt - Solution 50 % *BioChemica*

B

Aqueous solution

HS-No.: 29181100

Storage: RT
 LGK: 10 - 13

WGK: nwg

Specification:

Assay (titr.) 49 - 51 %
 Heavy metals (as Pb) max. 0.001 %
 pH (20 °C; 20°C) 5 - 8
 Chloride max. 0.1 %

Fe max. 0.001 %

Order-No.	Quantity
A1831,0100	100 ml
A1831,0500	500 ml
A1831,1000	1 L

L-Lactic acid sodium salt - Solution 50 % low endotoxin pure Ph. Eur., USP

C

Sodium L-lactate - Solution 50 %

HS-No.: 29181100

Storage: RT
 LGK: 10 - 13

WGK: 1

Specification:

Assay (titr.) min. 50 %
 Appearance of solution complies
 Endotoxins max. 5 I.U./g
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 pH 6.5 - 9.0

Methanol, Methyl esters max. 0.0025 %
 Red. sugars, Sucrose complies
 Chloride max. 0.005 %
 Citrate, Oxalate, Phosphate, Tartrate complies
 Sulfate max. 0.01 %

Al max. 0.00001 %
 Ba complies
 Fe max. 0.001 %

Order-No.	Quantity
A2759,0500	500 ml
A2759,1000	1 L
A2759,10006	6 x 1 L
A2759,2500	2.5 L
A2759,9020	20 L

L(+)-Lactic acid silver salt *BioChemica*

B

Sarcosilactic acid, 2-Hydroxypropionic acid silver salt, Silver L-lactate

$C_3H_5AgO_3$
 $M = 196.94$ g/mol
 CAS-No.: 128-00-7
 HS-No.: 28432900

Storage: RT

Warning
 H315-H319-H335
 P261-P305+P351+P338



Melting range 120 - 122°C

Specification:

Assay (titr.) min. 96 %
 Loss on drying max. 7 %

Order-No.	Quantity
A2959,0005	5 g
A2959,0010	10 g

L-Lactic Dehydrogenase see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1) Page 475
 Lactic Dehydrogenase see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3) Page 475

Lactitol monohydrate *BioChemica*

B

4-O-β-D-Galactopyranosyl-D-glucitol

$C_{12}H_{24}O_{11} \cdot H_2O$
 $M = 362.33$ g/mol
 CAS-No.: 81025-04-9
 HS-No.: 29329900
 EC-No.: 209-566-5

Storage: RT

Specification:

Assay min. 99 %

Order-No.	Quantity
A6863,0001	1 g
A6863,0005	5 g
A6863,0025	25 g

Lactobiose see D(+)-Lactose monohydrate Page 478

apo-Lactoferrin, human

B

supplied frozen in deionized water
from human milk

$M = \sim 90$ kDa
HS-No.: 35040090

Storage: -20°C
Shipment: dry ice

Specification:

Assay (SDS-PAGE) min. 98 %
Protein min. 1 mg/ml

Order-No.	Quantity
A6966,0100	100 µg
A6966,0500	500 µg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lactoflavin see Riboflavin Page 687

Lactoglucose see D(+)-Galactose Page 367

D(+)-Lactose monohydrate

Lactobiose, Milk sugar

$\text{C}_{12}\text{H}_{22}\text{O}_{11} \cdot \text{H}_2\text{O}$
 $M = 360.32$ g/mol
CAS-No.: 10039-26-6
HS-No.: 17021100
EC-No.: 200-559-2

Storage: RT
LGK: 10 - 13

WGK: nwg

Solubility (25°C) 216 g/L (H_2O)

D(+)-Lactose monohydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 $\alpha 20^{\circ}\text{C}/\text{D}$; 10 %, H_2O $+54.4^{\circ}$ - $+55.9^{\circ}$
Heavy metals (as Pb) max. 0.0005 %
Water (K.F.) 4.5 - 5.5 %

Chloride max. 0.005 %
Sulfate max. 0.005 %

Order-No.	Quantity
A3885,0250	250 g
A3885,0500	500 g
A3885,1000	1 kg

D(+)-Lactose monohydrate BioChemica

B

Specification:

$\alpha 20^{\circ}\text{C}/\text{D}$; 10 %, H_2O $+54.4^{\circ}$ - $+55.9^{\circ}$
Heavy metals (as Pb) max. 0.0005 %
Insoluble matter complies
Water (K.F.) 4.5 - 5.5 %

Cr max. 0.0005 %
Fe max. 0.0005 %
Zn max. 0.0005 %

Order-No.	Quantity
A0880,0500	500 g
A0880,1000	1 kg
A0880,5000	5 kg

D(+)-Lactose monohydrate pure Ph. Eur.

C

Specification:

$\alpha 20^{\circ}\text{C}/\text{D}$; 10 %, H_2O $+54.4^{\circ}$ - $+55.9^{\circ}$
Absorption complies
Acidic/alkaline react. subst. complies
Appearance of solution complies
Heavy metals (as Pb) max. 0.0005 %
Identity complies
Microbial limits complies

Sulfated ash max. 0.1 %
Water (K.F.) 4.5 - 5.5 %

Order-No.	Quantity
A3623,0500	500 g
A3623,1000	1 kg
A3623,10006	6 x 1 kg
A3623,5000	5 kg
A3623,9010	10 kg
A3623,9025	25 kg

Lactose Broth

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Lactose 5.0 g/L
Peptones 8.0 g/L

Specification:

pH before autoclaving . . . approx. 6.9 (20°C)

Order-No.	Quantity
A3749,0500	500 g
A3749,5000	5 kg

Literature: (1) Mossel *et al.* (1963) *J. Appl. Bact.* **24**, 444

Comment: This enrichment medium is used for the cultivation and presumptive identification of coliform organisms.

Directions: Suspend 13 g in 1 L of distilled water. Mix well and heat gently to dissolve completely. Distribute into final containers fitted with Durham's tubes. Sterilize by autoclaving at 121°C for 15 minutes. Cool rapidly. Large samples may require double-strength broth to reduce the final volume. Store the prepared medium at $2-8^{\circ}\text{C}$.

Lactose peptone broth, DEV



C

HS-No.: 38210000

Storage: RT
LGK: 10 - 13

Composition:

Bromocresol purple 0.02 g/L
Lactose 10.0 g/L
Peptones 20.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving . . . approx. 7.2 (20°C)

Order-No.	Quantity
A8175,0500	500 g
A8175,5000	5 kg

Lactulose BioChemica

B

4-O-β-D-Galactopyranosyl-D-fructose

$C_{12}H_{22}O_{11}$
 $M = 342.30$ g/mol
 CAS-No.: 4618-18-2
 HS-No.: 29400000
 EC-No.: 225-027-7

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Melting point 163 - 165°C

Specification:

Assay min. 98 %
 α 20°C/D, 1 %, H_2O -46° - -50°
 Heavy metals max. 0.001 %

Sulfated ash max. 0.2 %
 Water (K.F.) max. 1 %

Order-No.
A0887,0010 10 g
A0887,0025 25 g

LAD-1 see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1) Page 475
 LAD-2 see Lactate Dehydrogenase Isoenzyme-2, human (LDH-2) Page 475
 LAD-3 see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3) Page 475
 LAD-4 see Lactate Dehydrogenase Isoenzyme-4, human (LDH-4) Page 475
 LAD-5 see Lactate Dehydrogenase Isoenzyme-5, human (LDH-5) Page 476
 Laemmli buffer see SDS-Tris-Glycine buffer BioChemica Page 707

Lanatosid C HPLC grade



B

Digitalanid C
 from *Digitalis lanata*

$C_{49}H_{76}O_{20}$
 $M = 985.14$ g/mol
 CAS-No.: 17575-22-3
 HS-No.: 29389010
 EC-No.: 241-546-1

Storage: 2-8°C
 LGK: 10 - 13

Class / PG: 6.1/II
 UN2811
 Danger
 H311-H302-H331
 P261-P311-P312-P280



Specification:

Assay min. 99 %

Order-No.
A8712,0050 50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

$La(NO_3)_3 \cdot 6H_2O$ see Lanthanum nitrate hexahydrate p. A. Page 479

Lanthanum nitrate hexahydrate p. A.

C

$La(NO_3)_3 \cdot 6H_2O$

$LaN_3O_9 \cdot 6H_2O$
 $M = 433.02$ g/mol
 CAS-No.: 10277-43-7
 HS-No.: 28469000
 EC-No.: 233-238-0

Storage: RT
 LGK: 5.1 B
 Disposal: 28

Class / PG: 5.1/II
 UN1477
 WGK: 1
 Danger
 H318-H272
 P305+P351+P338



Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.002
 Chloride max. 0.005 %

Sulfate max. 0.005 %
 Fe max. 0.005 %
 Ca max. 0.001 %
 Ce max. 0.05 %

Order-No.
A5441,0100 100 g
A5441,0250 250 g

Lanthanum nitrate - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

Storage: RT

Warning
 H319
 P305+P351+P338



Specification:

Factor limits 0.995 - 1.005

Order-No.
A6550,0500 500 ml
A6550,1000 1 L
A6550,10006 6 x 1 L
A6550,5000PE 5 L

LARC see rHu MIP-3α Page 546

Laureth-23 see Brij® 35 BioChemica Page 157

Lauric acid pure

C

Dodecanoic acid

$C_{12}H_{24}O_2$
 $M = 200.32$ g/mol
 CAS-No.: 143-07-7
 HS-No.: 29159000
 EC-No.: 205-582-1

Storage: RT
 LGK: 10 - 13
 Disposal: 4

WGK: 1
 Warning
 H319
 P305+P351+P338



Specification:

Assay (HPLC) min. 99 %
 Identity (IR) complies
 Melting range 42 - 45°C

Order-No.
A5423,0100 100 g
A5423,0250 250 g
A5423,0500 500 g

Lauroylsarcosinate see N-Lauroylsarcosine sodium salt Page 480

N-Lauroylsarcosine sodium salt

N-Dodecanoyl-*N*-methylglycine sodium salt, Lauroylsarcosinate, Sarkosyl

C₁₅H₂₈NNaO₃
M = 293.39 g/mol
CAS-No.: 137-16-6
HS-No.: 29241900
EC-No.: 205-281-5

Storage: RT
LGK: 6.1 A

Class / PG: 6.1/II
UN2811
WGK: 1
Danger
H319-H315-H330-H317
P302+P352-P280-P304+P340-
P305+P351+P338



CMC 13.7 mM
Classification: anionic detergent

N-Lauroylsarcosine sodium salt Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 97 %
Water (K.F.) max. 6 %

Order-No.	Quantity
A7402,0100	100 g
A7402,0250	250 g
A7402,0500	500 g

N-Lauroylsarcosine sodium salt ultrapure

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Loss on drying max. 0.5 %

pH (5 %; H₂O; 20°C) ... 7.0 - 9.0
Chloride max. 0.005 %
Sulfate max. 0.005 %

Order-No.	Quantity
A1163,0001	1 g
A1163,0010	10 g
A1163,0025	25 g

N-Lauroylsarcosine sodium salt pure

B

Specification:

Assay (titr., calc. on dried substance) min. 97 %
Water (K.F.) max. 6 %

Order-No.	Quantity
A0422,0100	100 g
A0422,0250	250 g
A0422,0500	500 g

Literature: (1) Shmookler, R.J. *et al.* (1974) *Virology* **57**, 122-127
(2) Gariglio, P. *et al.* (1974) *FEBS Letters* **44**, 330-333
(3) Wroblewski, H. *et al.* (1978) *Biochimie* **60**, 389-398
(4) MacDonald, R.J. *et al.* (1987) *Methods Enzymol.* **152**, 219-227

Properties of the Polyoma virus transcription complex obtained from mouse nuclei.
Sarkosyl activation of RNA polymerase activity in mitotic mouse cells.
Solubilization of *Spiroplasma citri* cell membrane proteins with the anionic detergent Sarkosyl.
Isolation of RNA using Guanidinium salts.

Comment: N-Lauroylsarcosine (Sarkosyl) is an anionic detergent. At a concentration of 0.4 %, almost all proteins will be released from chromatin and it increases the activity of RNA polymerase II at chromatin from mice (2). Similar observations have been made with extracts from polyoma-infected mouse cells. Sarkosyl increased the activity of RNA polymerase II probably by improved access of the polymerase to the template (1). The solubilization of membrane proteins from *Spiroplasma* cell membranes was optimal at concentrations ranging from 6 - 20 µM/mg membrane protein (3).
The addition of 10 % sarkosyl solution (final 0.5 %) to cell or tissue homogenates improved the purity of the RNA isolated by the guanidine hydrochloride method (7.5 M) and reduces foaming during homogenisation (4).

N-Lauroylsarcosinate - Solutions

N-Dodecanoyl-*N*-methylglycine sodium salt - Solution, Sodium lauroylsarcosinate - Solutions

HS-No.: 29241900

Storage: 2-8°C
LGK: 10 - 13

N-Lauroylsarcosinate - Solution 30 % ultrapure

B

Danger
H315-H318-H330
P260-P310-P305+P351+P338



Composition:

Lauroylsarcosinate (A1163) . 300 g/L

Specification:

Appearance of solution . clear, colorless
pH (H₂O; 20°C) 7.0 - 8.5

Order-No.	Quantity
A0690,0050	50 ml
A0690,0100	100 ml

N-Lauroylsarcosinate - Solution 30 % pure

B

Danger
H318-H315-H330
P260-P310-P305+P351+P338



Composition:

Lauroylsarcosinate (A0422) . 300 g/L

Specification:

Appearance of solution . clear, yellowish
pH (H₂O; 20°C) 7.0 - 9.0

Order-No.	Quantity
A3457,0100	100 ml
A3457,0500	500 ml

N-Lauroylsarcosinate - Solution 10 % ultrapure

B

Composition:
Lauroylsarcosinate (A1163) . 100 g/L

Specification:
Appearance of solution . clear, colorless
pH (H₂O; 20°C) 7.0 - 8.5

Danger
H318-H331-H315
P305+P351+P338-P310-P260



Order-No.	Quantity
A3486,0050	50 ml
A3486,0100	100 ml
A3486,0250	250 ml

N-Lauroylsarcosinate - Solution 10 % pure

B

Composition:
Lauroylsarcosinate (A0422) . 100 g/L

Specification:
Appearance of solution . clear, yellowish
pH (H₂O; 20°C) 7.0 - 9.0

Danger
H331-H315-H318
P310-P260-P305+P351+P338



Order-No.	Quantity
A2506,0100	100 ml
A2506,0500	500 ml

Comment: Literature and **Comment:** see N-Lauroylsarcosine sodium salt.

Lauryl-β-D-maltoside see n-Dodecyl-β-D-maltoside Page 306
Lauryl-α-maltoside see n-Dodecyl-α-maltoside BioChemica Page 306

Lauryl Sulfate Broth

C

HS-No.: 38220000 Storage: RT
LGK: 10 - 13

Composition:
Buffers 4.9 g/L
Lactose 5.0 g/L
Sodium chloride 5.0 g/L
Sodium lauryl sulfate 0.1 g/L
Tryptose 20.0 g/L

Specification:
pH before autoclaving . . approx. 6.8 (20°C)

Order-No.	Quantity
A5768,0500	500 g
A5768,5000	5 kg

Literature: (1) APHA (1976) Compendium of Methods for the Microbiological Examination of Foods.

Comment: This selective enrichment medium is used for the detection of coliform organisms.
Directions: Suspend 35 g in 1 L of distilled water. Distribute into final containers fitted with Durham's tubes. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at room temperature.

Lauryltrimethylammonium bromide see Dodecyltrimethylammonium bromide BioChemica Page 306

LB-Agar - Powder according to Lennox

B

for Luria-Bertani Agar plates according to
Lennox for cultivation of *E. coli* in molecular
biology

HS-No.: 38210000 Storage: RT

Composition:
Agar (A0949) 15 g/L
NaCl (A1149) 5 g/L
Tryptone (A1553) 10 g/L
Yeast extract (A1552) 5 g/L

Order-No.	Quantity
A7459,0100G	100 g
A7459,0500G	500 g
A7459,1000KG	1 kg
A7459,2500KG	2.5 kg

Comment: The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of LB-Agar according to Lennox, 35 g of powder are dissolved.
Directions to prepare 1 liter medium/agar: Dissolve the powder in 900 ml of water; adjust pH to 7.0 with 5 N NaOH (approx. 0.2 ml), fill to 1000 ml and autoclave. Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive.

LB-Agar - Powder according to Miller

B

for Luria-Bertani Agar plates according to Miller for cultivation of *E. coli* in molecular biology

HS-No.: 38210000

Storage: RT

Composition:

Agar (A0949) 15 g/L
NaCl (A1149) 10 g/L
Tryptone (A1553) 10 g/L
Yeast extract (A1552) 5 g/L

Order-No.	Quantity
A0927,0100G	100 g
A0927,0500G	500 g
A0927,1000KG	1 kg
A0927,2500KG	2.5 kg
A0927,1000	1 L
A0927,5000	5 L
A0927,9010	10 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of LB-Agar according to Miller, 40 g of powder are dissolved.

Directions to prepare 1 liter medium/agar: Dissolve the powder in 900 ml of water; adjust pH to 7.5 with 5 N NaOH (approx. 0.2 ml), fill to 1000 ml and autoclave. Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive.

LB-Medium, high salt see LB-Medium - Powder according to Miller Page 482

LB-Medium - Powder according to Lennox

B

Luria-Bertani - Medium according to Lennox

HS-No.: 38210000

Storage: RT

Luria-Bertani-Medium according to Lennox for cultivation of *E. coli* in molecular biology

Composition:

NaCl (A1149) 5 g/L
Tryptone (A1553) 10 g/L
Yeast extract (A1552) 5 g/L

Order-No.	Quantity
A6666,0100G	100 g
A6666,0500G	500 g
A6666,1000KG	1 kg
A6666,2500KG	2.5 kg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 1.1.2 (Suppl. 59) Greene Publishing & Wiley-Interscience, New York.

Comment: This is another rich medium for the growth of bacteria. The original recipe of LB medium does not contain NaOH. The medium is not very highly buffered, and adjustment of the pH to 7 will not prevent that the pH drops when a culture grows near to saturation. Lennox-Medium differs from Miller-Medium just by the quantity of sodium chloride. The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of LB-Medium according to Lennox, 20 g of powder are dissolved.

Directions to prepare 1 liter medium/agar: Dissolve the powder in 900 ml of water; adjust pH to 7.0 with 5 N NaOH (approx. 0.2 ml), fill to 1000 ml and autoclave. Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive.

LB-Medium - Powder according to Miller

B

LB-Medium, high salt

HS-No.: 38210000

Storage: RT

Luria-Bertani-Medium according to Miller for cultivation of *E. coli* in molecular biology

Composition:

NaCl (A1149) 10 g/L
Tryptone (A1553) 10 g/L
Yeast extract (A1552) 5 g/L

Order-No.	Quantity
A0954,0100G	100 g
A0954,0500G	500 g
A0954,1000KG	1 kg
A0954,2500KG	2.5 kg
A0954,5000	5 L
A0954,9010	10 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of LB-Medium according to Miller, 25 g of powder are dissolved.

Directions to prepare 1 liter medium/agar: Dissolve the powder in 900 ml of water; adjust pH to 7.5 with 5 N NaOH (approx. 0.2 ml), fill to 1000 ml and autoclave. Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive.

LD-1 see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1) Page 475
LD-2 see Lactate Dehydrogenase Isoenzyme-2, human (LDH-2) Page 475
LD-3 see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3) Page 475
LD-4 see Lactate Dehydrogenase Isoenzyme-4, human (LDH-4) Page 475
LD-5 see Lactate Dehydrogenase Isoenzyme-5, human (LDH-5) Page 476
LDH-1 see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1) Page 475
LDH-2 see Lactate Dehydrogenase Isoenzyme-2, human (LDH-2) Page 475
LDH-3 see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3) Page 475
LDH-4 see Lactate Dehydrogenase Isoenzyme-4, human (LDH-4) Page 475
LDH-5 see Lactate Dehydrogenase Isoenzyme-5, human (LDH-5) Page 476
LDL see Lipoprotein, low density (LDL), human Page 491
LDS see Lithium dodecylsulfate *BioChemica* Page 493

Lead(II) acetate trihydrate pure

C

Sugar of leadSolubility (5 %; H₂O) . clear, colorless

C₄H₆O₄Pb · 3H₂O
M = 379.34 g/mol
 CAS-No.: 6080-56-4
 HS-No.: 29152900
 EC-No.: 206-104-4

Storage: RT
 LGK: 6.1 B
 Disposal: 15

Class / PG: 6.1/III
 UN1616
 WGK: 2
 Danger
 H351-H373-H410-H360FD
 P273-P308+P313-P281-P314

**Specification:**

Assay min. 99.5 %
 Chloride max. 0.002 %
 Cu max. 0.001 %
 Fe max. 0.001 %
 Zn max. 0.005 %

Order-No.	Quantity
A7608,0250	250 g
A7608,1000	1 kg
A7608,10006	6 x 1 kg
A7608,5000	5 kg

Lead(II) nitrate - Standard volumetric solutions

HS-No.: 38220000

Storage: RT

Lead(II) nitrate - Standard volumetric solution (0.05 M)

0.05 mol/L (0.1 N Solution)

Danger
 H302-H412-H372-H332-H360
 P309+P311-P201-P280-P273

**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3630,0250	250 ml
A3630,0500	500 ml
A3630,1000	1 L

Lead(II) nitrate - Standard volumetric solution (0.01 M)

0.01 mol/L (0.02 N Solution)

H412
 P273-P305+P351+P338

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3639,0250	250 ml
A3639,0500	500 ml
A3639,1000	1 L

Lecithins**L- α -Phosphatidylcholine**

CAS-No.: 8002-43-5
 HS-No.: 29232000
 EC-No.: 232-307-2

Storage: -20°C

Lecithin from egg BioChemica

B

Specification:

Phosphatidylcholine min. 60 %	Lysophosphatidylcholine max. 3 %
<i>E. coli</i> negative	nonpolar lipides max. 20 %
Iodine value 60 - 70	Water (K.F.) max. 2 %
Peroxide number max. 3.0	

Order-No.	Quantity
A0893,0100	100 g
A0893,0250	250 g
A0893,0500	500 g

Lecithin from soybean 90 %

B

Specification:

Phosphatidylcholine min. 90 %	Iodine value 97 - 107
Endotoxin max. 6 EU/g	Water (K.F.) max. 2 %
Free fatty acids max. 0.5 %	
Heavy metals max. 0.001 %	

Order-No.	Quantity
A2218,0050	50 g
A2218,0100	100 g
A2218,0250	250 g

Lecithin from soybean 30 %

B

Specification:

Phosphatidylcholine approx. 30 %
 Water (K.F.) max. 5 %

Order-No.	Quantity
A2182,0100	100 g
A2182,0500	500 g
A2182,1000	1 kg

Comment: Lecithins are soluble in chloroform, diethylether, petroleum ether, toluene or hexane. Addition to aqueous solutions may result in colloidal emulsions.

Lectin from *Canavalia ensiformis* (Con A)

B

Concanavalin A

M = approx. 110000 g/mol
CAS-No.: 11028-71-0
HS-No.: 29420000
EC-No.: 291-083-4

Danger
H317-H334
P280-P342+P311-P261



Specification:

Activity: < 2 µg/ml with trypsinized human erythrocytes
Isolation: affinity chromatography in the presence of Ca and Mn ions
Solubility: 5 mg/ml in PBS buffer at 20°C
supplied as white lyophilisate, salt-free

Order-No.	Quantity
A1884,0100	100 mg
A1884,0250	250 mg
A1884,0500	500 mg
A1884,0001	1 g

Literature: (1) Thøgers Andersen, A.-S. & Junker, S. (1994) *Nucleic Acids Res.* **22**, 5769-5770

Separation of a few living lymphoid cells from many dead cells.

Leibovitz's L15 - Medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Leibovitz's L15 - Medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1967,1000	1 L
A1967,5000	5 L
A1967,9010	10 L
A1967,9050	50 L

Leibovitz's L15 - Medium

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1323,1000	1 L
A1323,5000	5 L
A1323,9010	10 L
A1323,9050	50 L

Leibovitz's L15 - Medium

B

without L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1968,1000	1 L
A1968,5000	5 L
A1968,9010	10 L
A1968,9050	50 L

Leibovitz's L15 - Medium

B

with L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1954,1000	1 L
A1954,5000	5 L
A1954,9010	10 L
A1954,9050	50 L

Leifson Agar (modified) see Deoxycholate Citrate Agar, Leifson, Modified Page 264

Leiocarposid HPLC grade

B

from *Solidago virgaurea*

$C_{27}H_{34}O_{16}$
 M = 614.56 g/mol
CAS-No.: 71953-77-0
HS-No.: 29420000

Storage: 2-8°C

Warning
H302
P260-P308+P313



Specification:

Assay min. 99 %

Order-No.	Quantity
A7914,0010	10 mg
A7914,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Leishman's Eosin-Methylene blue see Leishman's Stain Page 485

Leishman's Stain

B

Eosin-Methylene blue according to Leishman, Leishman's Eosin-Methylene blue

CAS-No.: 12627-53-1
HS-No.: 32129000

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

$\lambda_{\text{max},1}$ (MeOH) 630 - 640 nm
 $\lambda_{\text{max},2}$ (MeOH) 522 - 525 nm
DC complies

Loss on drying max. 8 %

Order-No.	Quantity
A4277,0025	25 g
A4277,0100	100 g

Comment: Leishman's stain is applied in conventional staining techniques to uniformly stain chromosomes. These techniques leave centromeres constricted, thus enabling the measurement of chromosome length, centromeric position, and arm ratio. Leishman's stain belongs, as Giemsa and Wright's stain, to the group of Romanovsky stains. Slides can be easily destained and banded by most banding procedures. Orcein-stained chromosomes cannot be destained!

Leishman's Stain - Solution

B

ready-to-use indicator solution in methanol

HS-No.: 38220000

Storage: RT

Class / PG: 3(6.1)/II
UN1992
WGK: 1
hygroscopic
Danger
H331-H301-H225-H370-H311
P210-P280-P302+P352



Composition:

Leishman's stain (A4277) ... 0.2 %

Order-No.	Quantity
A6995,0500	500 ml
A6995,1000	1 L
A6995,10006	6 x 1 L

recombinant Human Leptin see rHu Leptin Page 485
recombinant Mouse Leptin see rM Leptin Page 485
recombinant Rat Leptin see rR Leptin Page 486

rHu Leptin



B

recombinant Human Leptin
lyophilized from a conc. (1 mg/ml)
solution with 0.0045 mM NaHCO₃
from *E. coli*

M = 16 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8265,0200	200 µg
A8265,1000	1 mg
A8265,5000	5 mg

Comment: Leptin inhibits food intake and stimulates energy expenditure. Leptin also has thermogenic actions and regulates enzymes of fatty acid oxidation. Severe hereditary obesity in rodents and humans is caused by defects in leptin production. In addition to its critical role in the physiologic regulation of body weight leptin has a variety of other physiologic and pathologic functions resembling those of cytokines. These functions include the regulation of hematopoiesis, angiogenesis, wound healing, inflammation, and immune responses. Recombinant Human Leptin is a single, non-glycosylated, polypeptide chain containing 147 amino acids.

rM Leptin



B

recombinant Mouse Leptin
lyophilized from a conc. (1 mg/ml)
solution with 50 mM NH₄CO₃, pH 8.0
from *E. coli*

M = 16.24 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8353,0200	200 µg
A8353,1000	1 mg
A8353,5000	5 mg

Comment: Leptin inhibits food intake and stimulates energy expenditure. Leptin also has thermogenic actions and regulates enzymes of fatty acid oxidation. Severe hereditary obesity in rodents and humans is caused by defects in leptin production. In addition to its critical role in the physiologic regulation of body weight leptin has a variety of other physiologic and pathologic functions resembling those of cytokines. These functions include the regulation of hematopoiesis, angiogenesis, wound healing, inflammation, and immune responses. Recombinant Mouse Leptin produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 147 amino acids and having a molecular mass of 16,24 kDa.

rR Leptin



B

recombinant Rat Leptin
lyophilized from a conc. (1 mg/ml)
solution with 0.0045 mM NaHCO₃
from *E. coli*

M = 16.24 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8311,0200	200 µg
A8311,1000	1 mg
A8311,5000	5 mg

Comment: Leptin inhibits food intake and stimulates energy expenditure. Leptin also has thermogenic actions and regulates enzymes of fatty acid oxidation. Severe hereditary obesity in rodents and humans is caused by defects in leptin production. In addition to its critical role in the physiologic regulation of body weight leptin has a variety of other physiologic and pathologic functions resembling those of cytokines. These functions include the regulation of hematopoiesis, angiogenesis, wound healing, inflammation, and immune responses. Recombinant Rat Leptin produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 147 amino acids and having a molecular mass of 16.24 kDa.

Leptomycin B BioChemica

B

Elactocin, Mantuamycin

C₃₃H₄₈O₆
M = 540.73 g/mol
CAS-No.: 87081-35-4
HS-No.: 29419000

Storage: -20°C

Specification:

Assay approx. 95 %
λ_{max} 227 nm

Appearance clear, colorless li-
quid

Order-No.	Quantity
A7780,0010	10 µg
A7780,0050	50 µg

Comment: Leptomycin B is an antibiotic originally isolated from *Streptomyces* species. Besides its antifungal activity, it shows antitumor activity. It inhibits the CRM/exportin-1 pathway of the nuclear transport of proteins in eukaryotic cells.

Solubility: Leptomycin B is soluble in methanol, ethanol, ethyl acetate and ethyl ether. It is water-insoluble.

L-Leucine

L-2-Amino-iso-hexanoic acid

C₆H₁₃NO₂
M = 131.18 g/mol
CAS-No.: 61-90-5
HS-No.: 29224985
EC-No.: 200-522-0

Storage: RT
LGK: 10 - 13

WGK: nwg

Solubility (25°C) 24.5 g/L (H₂O)

L-Leucine Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
α20°C/D; 4 %, 6 M HCl +14.9° - +16.5°
Other amino acids max. 0.5 %
Ammonium max. 0.02 %

Chloride max. 0.02 %
Sulfate max. 0.02 %
As max. 0.0001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A3496,0100	100 g
A3496,0250	250 g
A3496,0500	500 g
A3496,1000	1 kg

♦ All amino acids from AppliChem are of non-animal origin!

L-Leucine BioChemica

B

Specification:

Assay (titr.) min. 99 %
α20°C/D; 4 %, 6 M HCl +14.9° - +16.5°
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Other amino acids max. 0.5 %

Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.02 %

A (1 cm/0.1 M in 1 M HCl)
260 nm max. 0.05
280 nm max. 0.05

Order-No.	Quantity
A3460,0100	100 g
A3460,0250	250 g
A3460,0500	500 g
A3460,1000	1 kg

♦ All amino acids from AppliChem are of non-animal origin!

L-Leucine pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %
α20°C/D; 4 %, HCl 250 g/L +14.5° - +16.5°
α25°C/D; 4 %, 6 N HCl +14.9° - +17.3°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies

Loss on drying max. 0.2 %
Organic vol. impurities complies
Residue on ignition max. 0.1 %
pH (1 %; H₂O; 25°C) 5.5 - 7.0
Other amino acids max. 0.5 %
Ammonium max. 0.02 %

Chloride max. 0.02 %
Sulfate max. 0.03 %
Fe max. 0.001 %

Order-No.	Quantity
A1426,0100	100 g
A1426,0250	250 g
A1426,0500	500 g
A1426,1000	1 kg

♦ All amino acids from AppliChem are of non-animal origin!

L-Leucine dehydrogenase, bacterial Technical grade

B

[E.C. 1.4.1.9]

supplied liquid in 50 % glycerol
of bacterial origin

M = ~310 kDa

HS-No.: 35079090

Storage: -20°C

Shipment: wet ice

Temperature optimum 60°C

pH optimum (oxidation)

.....11.5

pH optimum (reduction)

.....8.5 - 9.5

Specification:

Activity min. 150 U/ml

Order-No.

A7940,0200

Quantity

200 U

A7940,1000

1000 U

Comment: The bacterial L-Leucine dehydrogenase is used in the metabolismization of α -keto acids and amino acids with branched side chains, respectively.

Unit definition: One unit is the amount of enzyme required to metabolize 1 μ mol substrate per minute in 125 mM glycine - NaOH buffer, pH 10.5 at 30°C. This technical enzyme grade is intended for use in chemical synthesis.

L-Leucine 2-naphthylamide hydrochloride BioChemica

B

L-Leucine β -naphthylamide
hydrochloride

C₁₆H₂₀N₂O · HCl

M = 292.80 g/mol

CAS-No.: 893-36-7

HS-No.: 29242998

EC-No.: 211-990-0

Storage: RT

WGK: 3

Specification:

Assay (TLC) min. 97 %

Solubility (5 mg/ml) clear

Order-No.

A7711,0001

Quantity

1 g

A7711,0005

5 g

L-Leucine β -naphthylamide hydrochloride see L-Leucine 2-naphthylamide hydrochloride BioChemica Page 487

Leucovorin see Folinic acid calcium salt pentahydrate Page 355

L-Leucyl-L-alanine Cell culture grade

B

C₉H₁₈N₂O₃

M = 202.25 g/mol

CAS-No.: 7298-84-2

HS-No.: 29420000

EC-No.: 230-737-5

Storage: 2-8°C

Specification:

Pyrogen test complies

Assay (TLC) min. 96 %

 α 20°C/D; 2 %, MeOH +16° - +22°

Order-No.

A4411,0250

Quantity

250 mg

A4411,0001

1 g

recombinant Mouse Leukemia Inhibitory Factor see rM LIF bioconfident grade Page 489

Leukocytes, human - sonicated

B

154 mM NaCl solution
from human serum

HS-No.: 30021091

Storage: -20°C

Order-No.

A6958,0500

Quantity

500 μ l

A6958,0005

5 ml

Comment: NOTE: 0.9 ml per liter of urine will give a positive reaction for leukocytes on an Ames or BMD dipstick.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Ac-Leu-Leu-argininal see Leupeptin hemisulfate Page 488

Leupeptin hemisulfate

B

Ac-Leu-Leu-argininal

$C_{20}H_{38}N_6O_4 \cdot \frac{1}{2}H_2SO_4$
M = 475.60 g/mol
 CAS-No.: 103476-89-7
 HS-No.: 29419000

Storage: -20°C
 LGK: 10 - 13

WGK: 1

Specification:

Assay min. 96.5 %
 Solubility (1 %; H₂O) clear

Order-No.	Quantity
A2183,0010	10 mg
A2183,0025	25 mg
A2183,0100	100 mg

Literature: (1) Umezawa, H. (1976) *Methods Enzymol.* **45 (Part B)**, 678-695
 (2) Brass, L.F. & Shattil, S.J. (1988) *J. Biol. Chem.* **263**, 5210-5216

Structures and activities of protease inhibitors of microbial origin.
 Inhibition of Thrombin-induced platelet activation by Leupeptin.

Comment: Leupeptin is a peptide antibiotic, isolated from several *Streptomyces* species. It is a reversible inhibitor of serine and cysteine proteases (e. g. plasmin, trypsin, papain, cathepsin B (1), thrombin (2), calcium-dependent protease calpain (2)). The halfmaximal inhibitory concentration (ID₅₀) depends on the protease and ranges from 0.5 to 10 µg/ml. The working concentration is 10 - 100 µM (corresponds to 5 - 50 µg/ml), but as a starting concentration 2 µM (1 µg/ml) might be sufficient.

Stability: Leupeptin is readily water-soluble. Aqueous stock solutions are set up with a concentration of 1 mg/ml. Leupeptin is stable in solutions at +4°C for approx. one week and at -20°C up to 6 months.

Levamisole hydrochloride

B

Tetramisole hydrochloride

$C_{11}H_{12}N_2S \cdot HCl$
M = 240.76 g/mol
 CAS-No.: 16595-80-5
 HS-No.: 29349990
 EC-No.: 240-654-6

Storage: RT
 protected from light
 LGK: 10 - 13

Class / PG: 6.1/III
 UN2811
 WGK: 3
 Danger
 H301
 P301+P310


Specification:

Assay (titr.) min. 99 %
 α20°C/D; 5 %, H₂O -121°--128°

Order-No.	Quantity
A4341,0001	1 g
A4341,0005	5 g
A4341,0010	10 g

Comment: Levamisole is an inhibitor of alkaline phosphatase in tissues and cells, except for intestinal alkaline phosphatase. It is used for the conventional alkaline phosphatase staining technique for polyclonal antibodies (substrate BCIP/NBT) in the immunohistochemistry for inhibiting endogenous alkaline phosphatase. Levamisole hydrochloride is soluble in water (21 g/100 ml) and ethanol. It is hardly soluble in chloroform, hexane or acetone. Stock solutions (20 mM) are stored at +4°C. The working concentration is 1 - 5 mM.

Levulose see D(-)-Fructose Page 364

LiCl see Lithium chloride Page 492

Lidocaine hydrochloride pure Ph. Eur., USP

B

Melting range 74 - 79°C

$C_{14}H_{22}N_2O \cdot HCl$
M = 270.80 g/mol
 CAS-No.: 73-78-9
 HS-No.: 29242910

Storage: RT

Class / PG: 6.1/III
 UN2811
 Danger
 H301
 P301+P310


Specification:

Assay 99.0 - 101.0 %
 Appearance of solution clear, colorless
 Heavy metals (as Pb) max. 0.0005 %
 Identity complies

Sulfated ash max. 0.1 %
 pH (5 %; H₂O) 4.0 - 5.5
 2,6-Dimethylaniline max. 0.01 %
 Water (K.F.) 5.5 - 7.0 %

Sulfate complies

Order-No.	Quantity
A2870,0025	25 g
A2870,0100	100 g
A2870,0500	500 g

LIDS see Lithium dodecylsulfate *BioChemica* Page 493

rHu LIF bioconfident grade



B

Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from Hordeum vulgare

M = 21.8 kDa
 HS-No.: 29371900

Storage: -20°C
 Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin max. 0.05 EU/µg
 Pyrogen test complies
 Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8934,0010	10 µg
A8934,0050	50 µg
A8934,0100	100 µg
A8934,1000	1 mg

Comment: Recombinant mouse GM-CSF contains 180 amino acids and a 16 amino acid histidine-based tag for a total length of 196 amino acids and has a predicted molecular mass of 16.2 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 25 - 30 kDa in SDS-PAGE.

rM LIF bioconfident grade



B

recombinant Mouse Leukemia Inhibitory Factor

$M = 22.8$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

sterile filtered solution from 274 mM NaCl, 5.5 mM KCl, 16 mM Na₂HPO₄, 3 mM KH₂PO₄, pH 7.2
from *Hordeum vulgare*

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/μg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8831,0010	10 μg
A8831,0050	50 μg
A8831,0100	100 μg
A8831,1000	1 mg

Comment: Recombinant mouse LIF contains 188 amino acids and a 16 amino acid Histidine-based tag for a total length of 204 amino acids and has a predicted molecular mass of 22.8 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 35 kDa in SDS-PAGE.

Ligase, T4 DNA see T4 DNA Ligase Page 790
Ligase, T4 RNA see T4 RNA Ligase Page 790
Linargenin see Acacetin HPLC grade Page 38

Linarin HPLC grade



B

Acacetin-7-rutinoside
from *Linaria vulgaris*

$C_{28}H_{32}O_{14}$
 $M = 592.57$ g/mol
CAS-No.: 480-36-4
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Warning
H302
P308+P313-P260



Specification:

Assay min. 98 %

Order-No.	Quantity
A8716,0010	10 mg
A8716,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Lincocin hydrochloride see Lincocin hydrochloride *BioChemica* Page 489

Lincocin hydrochloride *BioChemica*

B

Lincocin hydrochloride

$C_{18}H_{34}N_2O_6S \cdot HCl$
 $M = 443.00$ g/mol
CAS-No.: 859-18-7
HS-No.: 29419000
EC-No.: 212-726-7

Storage: 2-8°C

Warning
H319-H335-H315
P305+P351+P338-P261



Specification:

Assay (TLC) min. 95 %
Solubility (50 mg/ml; H₂O) .. clear, colorless
Water (K.F) max. 5 %

Order-No.	Quantity
A7697,0001	1 g
A7697,0005	5 g
A7697,0025	25 g

Literature: (1) Chang, F.N. *et al.* (1966) *Proc. Natl. Acad. Sci. USA* **55**, 431-738
(2) Kallia-Raftopoulos, S. & Kalpaxis, D.L. (1999) *Mol. Pharmacol.* , **56**, 1042-1046

Lincocin, an inhibitor of aminoacyl tRNA binding to ribosomes.
Slow Sequential Conformational Changes in *E. coli* Ribosomes Induced by Lincocin: Kinetic Evidence.

Comment: The antibiotic Lincocin hydrochloride (Lincocin A) is, like Clindamycin, a pyranoside, belonging to the group of the Lincosamides. It was isolated from Streptomyces (*Streptomyces lincolnensis*). Lincocin is active against gram positive anaerobic and aerobic bacteria, gram negative anaerobic bacteria and mycoplasma. It consists of the amino acid L-Proline, bound through an amide linkage to the aminosugar Oktose. The bacteriostatic and, depending on sensitivity and concentration, bactericidal activity is based on reversible binding to the 50S subunit of the bacterial ribosome, comparable to macrolide antibiotics. Binding inhibits protein synthesis, but not DNA and RNA synthesis.
Solubility and stability: The hydrochloride form is stable and freely soluble in water. Solutions are stable at a pH range of pH 2-9 (25°C, 2 years, 10 % loss of activity).

linear polyacrylamide see DNA-PrecipitAid Page 304

Linoleate : oxygen oxidoreductase see Lipoxidase from soybean Page 491

Linoleic acid Cell culture grade

B

from sunflower oil

$C_{18}H_{32}O_2$
 $M = 280.50$ g/mol
CAS-No.: 60-33-3
HS-No.: 29161500
EC-No.: 200-470-9

Storage: 2-8°C
under Argon

WGK: 1
P262

Specification:

Assay (HPLC) min. 98 %
Appearance clear, slightly yellowish liquid

Order-No.	Quantity
A4778,0005	5 g
A4778,0010	10 g

Linsmaier, Bednar & Skoog Plant salts

B

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Order-No.	Quantity
A0591,5000	5 L
A0591,9010	10 L
A0591,9050	50 L

LiOH · H₂O see Lithium hydroxide monohydrate p. A. Page 493

Lipase from porcine pancreas

B

PPL, Triacylglycerol lipase, [E.C. 3.1.1.3]

M = ~50000 g/mol
CAS-No.: 9001-62-1
HS-No.: 35079090
EC-No.: 232-619-9

Storage: -20°C
LGK: 10 - 13

Specification:

Activity approx. 20 U/mg

Order-No.	Quantity
A4090,0025	25 g
A4090,0100	100 g
A4090,0250	250 g

Comment: One unit of activity is defined as that amount of enzyme causing the release of 1 µmol fatty acids from triglycerols per minute at pH 8.0 and 37°C.

Lipase, human

B

[E.C. 3.1.1.3], Triacylglycerol lipase,
Triacylglycerol acylhydrolase
supplied liquid in 100 mM NaCl, 100 mM
Tris, 1 mM Benzamidine, 1 mM CaCl₂,
pH 8.0
from human pancreas

CAS-No.: 9001-62-1
HS-No.: 35079090

Storage: 2-8°C

Specification:

Activity (37°C) min. 500 U/ml
Appearance straw colored

Order-No.	Quantity
A6967,0010	10 U
A6967,0100	100 U

Comment: Unit Definition: One unit will catalyze the liberation of one micromole of fatty acid per minute at 37°C.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

DL-α-Lipoic acid BioChemica

B

DL-6,8-Thioctic acid

C₈H₁₄O₂S₂
M = 206.33 g/mol
CAS-No.: 1077-28-7
HS-No.: 29349990
EC-No.: 200-534-6

Storage: 2-8°C
LGK: 10 - 13

WGK: 3*

Melting point 59 - 62°C

Specification:

Assay (titr.) min. 98 %
Heavy metals (as Pb) max. 0.005 %
Loss on drying max. 0.5 %

Sulfated ash max. 0.1 %

Order-No.	Quantity
A4065,0005	5 g
A4065,0025	25 g

α-Lipoprotein see Lipoprotein, high density (HDL), human Page 490

β-Lipoprotein see Lipoprotein, low density (LDL), human Page 491

Lipoprotein, high density (HDL), human

B

High Density Lipoprotein, α-Lipoprotein,
HDL
supplied as frozen liquid, non sterile, no
preservatives
from human serum

HS-No.: 38220000

Storage: -20°C
Shipment: dry ice

Specification:

Lipoprotein Electrophoresis one major band
Appearance orange
Concentration 700-3500 mg/dl

Cholesterol (total) min. 1000 mg/dl

Order-No.	Quantity
A6965,0010	10 mg
A6965,0100	100 mg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lipoprotein, low density (LDL), human

B

LDL, β Lipoprotein, Low Density Lipoprotein
supplied as frozen liquid, non sterile, no preservatives
from human serum

HS-No.: 38220000

Storage: -20°C
Shipment: dry ice

Specification:

Appearance orange
Cholesterol (total) 2000 - 5500 mg/dL
Triglyceride ca. 3000 mg/dL

Order-No.	Quantity
A6961,0010	10 mg
A6961,0100	100 mg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Lipoxidase from soybean

B

Linoleate : oxygen oxidoreductase, Lipoxygenase, [E.C. 1.13.11.12]
salt-free, freeze-dried

$M = \sim 108000$ g/mol
CAS-No.: 9029-60-1
HS-No.: 35079090
EC-No.: 232-853-1

Storage: -20°C

Specification:

Activity min. 50000 U/mg

Order-No.	Quantity
A3386,0015	15 MU
A3386,0075	75 MU
A3386,0150	150 MU

Comment: One unit of activity is defined as that amount of enzyme causing an increase in absorbance at 234 nm of 0.001 per minute at 25°C and pH 9.0 resulting from the oxidation of linoleic acid.

Lipoxygenase see Lipoxidase from soybean Page 491
LIS see Lithium 3,5-diiodosalicylate Page 493

Listeria Selective Agar Base, Oxford

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Ammonium ferric citrate 0.5 g/L
Esculin 1.0 g/L
Lithium chloride 15.0 g/L
Peptones, extracts 23.5 g/L

Sodium chloride 5.0 g/L
Starch soluble 1.0 g/L

Specification:

pH before autoclaving
..... approx. 7.0 (20°C)

Order-No.	Quantity
A5776,0500	500 g
A5776,5000	5 kg

♦ **Attention:** Please note that a supplement (A6787) exists for this agar. Please order separately.

Literature: (1) Curtis *et al.* (1989) *Letters in Appl. Microbiol.* **8**, 95.

Comment: This is a selective and differential medium for the detection of *Listeria monocytogenes*.

Directions: Suspend 29.5 g in 500 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of one vial "Listeria Selective Supplement, Oxford" (A6787) reconstituted with 4 ml of ethanol : sterile distilled water (1:1). Mix well before pouring. Store the prepared plates at 2-8°C.

Listeria Selective Agar Base, Palcam

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Ammonium ferric citrate 0.6 g/L
Esculin 0.8 g/L
Glucose 0.5 g/L
Lithium chloride 15.0 g/L

Mannitol 10.0 g/L
Peptones, extracts 26.0 g/L
Phenol red 0.08 g/L
Sodium chloride 5.0 g/L
Starch soluble 1.0 g/L

Specification:

pH before autoclaving
..... approx. 7.2 (20°C)

Order-No.	Quantity
A5799,0500	500 g
A5799,5000	5 kg

♦ **Attention:** Please note that a supplement (A6788) exists for this agar. Please order separately.

Literature: (1) Van Netten *et al.* (1989) *Int. J. Food Microb.* **8**, 299.

Comment: This is a selective and differential medium for the detection of *Listeria monocytogenes*.

Directions: Suspend 36 g in 500 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of one vial "Listeria Selective Supplement, Palcam" (A6788) reconstituted with 4 ml of sterile distilled water. Mix well before pouring. Store the prepared plates protected from light at 2-8°C and use within 2 weeks.

Listeria Selective Supplement, Oxford see Supplements for Microbiological Media Page 786
Listeria Selective Supplement, Palcam see Supplements for Microbiological Media Page 786

Lithium acetate dihydrate p. A.

B

Solubility (20°C)	 clear, colorless (1 M; H ₂ O)	C ₂ H ₃ LiO ₂ · 2H ₂ O M = 102.01 g/mol CAS-No.: 6108-17-4 HS-No.: 29152900 EC-No.: 208-914-3	Storage: RT LGK: 13 Disposal: 14	WGK: 1

Specification:

Assay (titr.)	 min. 99 %	Ca	 max. 0.005 %	Pb	 max. 0.001 %
pH (1 M; H ₂ O; 25°C)	 7.5 - 9.5	Cu	 max. 0.005 %	Zn	 max. 0.005 %
Chloride	 max. 0.005 %	Fe	 max. 0.005 %		
Sulfate	 max. 0.01 %	Na	 max. 0.01 %		

Order-No.	Quantity
A3478,0100	100 g
A3478,0500	500 g
A3478,1000	1 kg

Literature: (1) Wu, S. & Letchworth, G.J. (2004) *BioTechniques* **36**, 152-154

High efficiency transformation by electroporation of *Pichia pastoris* pretreated with lithium acetate and DTT.

Lithium acetoacetate see Acetoacetic acid lithium salt *BioChemica* Page 43

Lithium benzoate pure

C

Benzoic acid lithium salt	C ₇ H ₅ LiO ₂ M = 128.06 g/mol CAS-No.: 553-54-8 HS-No.: 29163100 EC-No.: 209-042-6	Storage: RT	Warning H302 P302+P352-P305+P351+P338



Specification:

Assay (titr.)	 min. 99 %	Chloride	 max. 0.005 %
Heavy metals (as Pb)	 max. 0.001 %		
Loss on drying	 max. 1 %		

Order-No.	Quantity
A4762,0250	250 g
A4762,1000	1 kg

Lithium carbonate pure

C

Melting point	 720°C	Li ₂ CO ₃ M = 73.89 g/mol CAS-No.: 554-13-2 HS-No.: 28369100 EC-No.: 209-062-5	Storage: RT LGK: 10 - 13 Disposal: 14	WGK: 1 Warning H302-H319 P262-P305+P351+P338



Specification:

Assay (titr.)	 min. 98.5 %	Ca	 max. 0.05 %
Heavy metals (as Pb)	 max. 0.005 %	Fe	 max. 0.005 %
Chloride	 max. 0.05 %	K	 max. 0.02 %
Sulfate	 max. 0.4 %	Na	 max. 0.3 %

Order-No.	Quantity
A6327,0500	500 g
A6327,1000	1 kg
A6327,10006	6 x 1 kg

Lithium chloride

LiCl	CLi M = 42.39 g/mol CAS-No.: 7447-41-8 HS-No.: 28273985 EC-No.: 231-212-3	Storage: RT LGK: 10 - 13 Disposal: 14	WGK: 1 Warning H315-H319-H302 P302+P352-P305+P351+P338



Lithium chloride Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable	Sulfate	 max. 0.01 %	Na	 max. 0.1 %
Assay (titr.)	 min. 99 %	As	 max. 0.005 %		
Insoluble matter	 complies	Ca	 max. 0.01 %		
Loss on drying	 max. 1 %	Fe	 max. 0.005 %		

Order-No.	Quantity
A6286,0050	50 g
A6286,0100	100 g
A6286,0250	250 g

Lithium chloride *BioChemica*

B

Specification:

Assay (titr.)	 min. 99 %	Ca	 max. 0.01 %	A (1 cm/1 M in H ₂ O)	
Insoluble matter	 complies	Fe	 max. 0.005 %	260 nm	 max. 0.05
Loss on drying	 max. 1 %	Na	 max. 0.1 %	280 nm	 max. 0.05
Sulfate	 max. 0.01 %				
As	 max. 0.005 %				

Order-No.	Quantity
A0958,0100	100 g
A0958,0250	250 g
A0958,0500	500 g

Literature: (1) Auffray, C. & Rougeon, F. (1980) *Eur. J. Biochem.* **107**, 303-314

(2) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

(3) Hallcher, L.M. & Sherman, W.R. (1980) *J. Biol. Chem.* **255**, 10896-10901

(4) Martin, T.F.J. (1986) *Methods Enzymol.* **124**, 424-442

(5) Vicent, C.M. & Delseny, M. (1999) *Anal. Biochem.* **268**, 412-413

Purification of mouse immunoglobulin heavy-chain mRNAs from total myeloma tumor RNA.
Precipitation of nucleic acids.
The effect of lithium ions and other agents on the activity of myo-inositol-1-phosphatase from bovine brain.
Measurement of phospholipid turnover in cultured hormone responsive pituitary cells.
Isolation of total RNA from *Arabidopsis thaliana*-seeds.

Lithium chloride pure

C

Specification:

Assay (titr.)	min. 98 %	Na	max. 0.1 %
Heavy metals (as Pb)	max. 0.001 %		
Loss on drying	max. 2 %		
Sulfate	max. 0.01 %		
Ca	max. 0.01 %		

Order-No.	Quantity
A6216,0100	100 g
A6216,0500	500 g
A6216,1000	1 kg
A6216,10006	6 x 1 kg

Lithium 3,5-diiodosalicylate

B

3,5-Diiodo-2-hydroxybenzoic acid
lithium salt, LIS, 3,5-Diiodosalicylic acid
lithium salt

C₇H₃I₂O₃Li
M = 395.85 g/mol
CAS-No.: 653-14-5
HS-No.: 29209010
EC-No.: 211-496-5

Storage: 2-8°C

WGK: 3
Warning
H319-H335-H315
P261-P305+P351+P338



Specification:

Assay (titr.)	min. 99 %
Appearance of solution (1 %; H ₂ O)	clear
Loss on drying	max. 2 %

Order-No.	Quantity
A7086,0001	1 g
A7086,0005	5 g
A7086,0025	25 g

Lithium dodecylsulfate BioChemica

B

Lithium laurylsulfate, LiDS, LDS

C₁₂H₂₅LiO₄S
M = 272.33 g/mol
CAS-No.: 2044-56-6
HS-No.: 29209010
EC-No.: 218-058-2

Storage: RT
LGK: 10 - 13

WGK: 3*
Warning
H319-H315-H302
P280-P302+P352-P305+P351+P338



CMC (25°C) 8.7 mM
Classification: anionic detergent

Specification:

Assay (titr.)	min. 99 %	Pb	max. 0.001 %
Chloride	max. 0.01 %		
Phosphate	max. 0.0001 %		
Cu	max. 0.0005 %		
Fe	max. 0.0005 %		

A (1 cm/ 0.1 M in water)
260 nm max. 0.02
280 nm max. 0.02

Order-No.	Quantity
A1385,0010	10 g
A1385,0050	50 g
A1385,0100	100 g

Literature: (1) Broglie, R.M. et al. (1980) *Proc. Natl. Acad. Sci. USA* **77**, 87-91

(2) Dam, V.T. et al. (1981) *Anal. Biochem.* **114**, 330-335

(3) Kubo, K. & Takagi, T. (1986) *Anal. Biochem.* **156**, 11-16

(4) Suzuki, Y. et al. (2004) *BioTechniques* **37**, 542-544

Isolation and characterization of the pigment-protein complexes of *Rhodospseudomonas sphaeroides* by lithium dodecyl sulfate/polyacrylamide gel electrophoresis.

Separation of poly(ADP-ribosylated) nuclear proteins by polyacrylamide gel electrophoresis at acidic pH and low temperature.

Binding of Lithium dodecyl sulfate to polyacrylamide gel at 4°C perturbs electrophoresis of proteins.

RNA Isolation from siliques, dry seeds, and other tissues of *Arabidopsis thaliana*.

Lithium hydroxide monohydrate p. A.

C

LiOH · H₂O

HLiO · H₂O
M = 41.96 g/mol
CAS-No.: 1310-66-3
HS-No.: 28252000
EC-No.: 215-183-4

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/II
UN2680
WGK: 1
Danger
H302-H314
P305+P351+P338-P280



Solubility (10°C) 223 g/L (H₂O)

Specification:

Assay (titr.)	min. 99 %	Cr	max. 0.0005 %	Zn	max. 0.005 %
Lithium carbonate	max. 1 %	Cu	max. 0.0005 %		
Chloride	max. 0.005 %	Fe	max. 0.0005 %		
Sulfate	max. 0.005 %	K	max. 0.005 %		
Al	max. 0.0005 %	Na	max. 0.005 %		
Ca	max. 0.005 %	Pb	max. 0.005 %		

Order-No.	Quantity
A2570,0250	250 g
A2570,0500	500 g
A2570,1000	1 kg
A2570,10006	6 x 1 kg
A2570,5000	5 kg

Lithium-DL-lactate see DL-Lactic acid lithium salt crystalline BioChemica Page 476

Lithium-L-lactate see L(+)-Lactic acid lithium salt crystalline BioChemica Page 476

Lithium laurylsulfate see Lithium dodecylsulfate BioChemica Page 493

Litmus see Lacmus pure (C.I. 1242) Page 474

Loading buffer DNA I

B

6X Gel loading buffer for DNA samples 6fold
concentrated solution for agarose and
acrylamide gel electrophoresis

HS-No.: 38220000

Storage: RT

Composition:

Bromophenol blue Na-salt . 0.25 %
Ficoll® 400 15 %

Order-No.	Quantity
A3144,0005	5 ml
A3144,0010	10 ml
A3144,0025	25 ml

Loading buffer DNA II

B

6X Gel loading buffer for DNA samples 6fold concentrated solution for agarose and acrylamide gel electrophoresis

HS-No.: 38220000

Storage: RT

Composition:

Bromophenol blue sodium salt 0.25 %
Ficoll® 400 15 %
Xylene cyanol FF 0.25 %

Order-No.	Quantity
A2571,0005	5 ml
A2571,0010	10 ml
A2571,0025	25 ml

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Pages 1.73, 12.71, A8.18. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Loading buffer DNA II b

B

6X Gel loading buffer for DNA samples 6fold concentrated solution for agarose and acrylamide gel electrophoresis

HS-No.: 38220000

Storage: RT

Composition:

Bromophenol blue sodium salt 0.25 % (w/v)
Glycerol 30 % (v/v)
Xylene cyanol FF 0.25 % (w/v)

Order-No.	Quantity
A6307,0005	5 ml
A6307,0010	10 ml
A6307,0025	25 ml

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page A1.19. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Loading buffer DNA III (alkaline)

B

6X Gel loading buffer for DNA samples 6fold concentrated solution

HS-No.: 38220000

Storage: RT

Composition:

Bromocresol green 0.15 %
EDTA · Na₂ 6 mM
Ficoll® 400 18 %
NaOH 300 mM
Xylene cyanol FF 0.25 %

Order-No.	Quantity
A3147,0005	5 ml
A3147,0010	10 ml
A3147,0025	25 ml

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page 5.37. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Loading buffer DNA IV (for Agarose gels)

B

10X Gel loading buffer for DNA samples for agarose gel electrophoresis

HS-No.: 38220000

Storage: RT

Composition:

Bromophenol blue 0.25 %
EDTA · Na₂ (pH 8.0) 100 mM
Ficoll® 400 20 %
SDS 1.0 %
Xylene cyanol FF 0.25 %

Order-No.	Quantity
A3481,0005	5 ml
A3481,0010	10 ml
A3481,0025	25 ml

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page 2.5A.5 Suppl. 51 John Wiley & Sons, New York.

Loading buffer V (for denaturing urea gels)

B

2X Gel loading buffer for oligonucleotide purification for denaturing PAGE

HS-No.: 38220000

Storage: RT

Composition:

Bromophenol blue 0.5 %
Tris · HCl (pH 7.5) 5 mM
Urea 8 M
Xylene cyanol FF 0.5 %

Order-No.	Quantity
A3497,0005	5 ml
A3497,0010	10 ml
A3497,0025	25 ml

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. page 2.5A.5 Suppl. 51 John Wiley & Sons, New York.

Loading buffer VI (for sequencing gels)

B

2X Stop-/Loading buffer for dideoxy sequencing

HS-No.: 38220000

Storage: 2-8°C

Composition:

Bromophenol blue 0.05 %
EDTA · Na₂ (pH 8.0) 20 mM
Xylene cyanol FF 0.05 %

Order-No.	Quantity
A3469,0005	5 ml
A3469,0010	10 ml
A3469,0025	25 ml

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page 7.4A.17 Suppl. 47. John Wiley & Sons, New York.

Loading buffer VII (for denaturing PAGE)

B

2.75X Loading buffer for denaturing PAGE (DNA sequencing)

HS-No.: 38220000

Storage: 2-8°C
LGK: 6.1 A

WGK: 1
Danger
H360



Composition:

Bromophenol blue 0.09 %
Formamide deionized 95 % (v/v)
Xylene cyanol FF 0.09 %

Order-No.	Quantity
A3490,0005	5 ml
A3490,0010	10 ml
A3490,0025	25 ml

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. page 7.4A.14 Suppl. 47. John Wiley & Sons, New York.

Loading buffer VIII (for Glyoxal / DMSO - RNA gels)

B

7.5X Loading buffer for agarose gels for RNA separation treated with DEPC

HS-No.: 38220000

Storage: 2-8°C

Composition:

Bromophenol blue 0.25 %
Glycerol 50 %
Sodium phosphate (pH 7.0) 10 mM
Xylene cyanol FF 0.25 %

Order-No.	Quantity
A3476,0005	5 ml
A3476,0010	10 ml
A3476,0025	25 ml

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page 4.9.15 Suppl. 67. John Wiley & Sons, New York.

Comment: RNA denatures in formaldehyde or glyoxal/DMSO. The RNA probe will be denatured in glyoxal/DMSO sodium phosphate buffer and separated on agarose gels. Since glyoxal reacts with ethidium bromide, these gels are stained after the gel run! Add to 30 µl RNA probe 4 µl of DEPC-treated Loading buffer VIII and the gel immediately.

Loading buffer IX (for SDS gels)

B

2X Loading buffer for SDS-PAGE

HS-No.: 38220000

Storage: RT

Composition:

Bromophenol blue 0.2 %
DTT * 200 mM (final conc.)
Glycerol 20 %
SDS 4 %
Tris · HCl (pH 6.8) 100 mM

Order-No.	Quantity
A3484,0005	5 ml
A3484,0010	10 ml
A3484,0025	25 ml

* Add directly before use; not supplied.

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page A1.20. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Loading buffer X (PCR)

B

HS-No.: 38220000

Storage: 2-8°C

◆ PCR loading solution for the direct loading of reaction products onto agarose gels.

◆ Advantages

- Non-toxic ingredients
- PCR products can be loaded onto agarose gel immediately following amplification.
- The samples can be visualized while loading.
- Ideal for 'high-throughput PCR'
- The red dye serves as a marker dye during gel electrophoresis.

Order-No.	Quantity
A5212,0005	5 ml

Comment: Loading buffer X (PCR) is a 5X loading dye solution containing a PCR compatible red dye and an inert densifying agent. For a 50 µl reaction, take 10 µl of Loading buffer X (PCR) and add template, primers, dNTP's, buffer, enzyme and water in a 40 µl volume. If the master mix is prepared, scale up accordingly. Following amplification, load the PCR products immediately onto agarose gel for electrophoresis.

Loeffler's Methylene blue - Solution Microscopy grade

C

HS-No.: 32041300

Storage: RT
LGK: 3 A

Class / PG: 3/III
UN1993
WGK: 1
Danger
H225
P210

Specification:
 λ_{max} 663 - 667 nm

Order-No.	Quantity
A2515,0100	100 ml
A2515,0500	500 ml
A2515,1000	1 L
A2515,10006	6 x 1 L
A2515,2500	2.5 L

Comment: Loeffler's Methylene blue - Solution is prepared by dissolving the dye in alcohol and subsequent dilution in 0.1 g/L potassium hydroxide. Therefore, we recommend to further dilute the stock solution in 0.1 g/L potassium hydroxide, if necessary. According to ÖAB, 5 g/L dye are employed (saturated solution). During its preparation, AppliChem removes undissolved dye by filtration.

Lomant's reagent see DTSP BioChemica Page 309

 β -Longilobin see Retrorsin HPLC grade Page 685

Low Density Lipoprotein see Lipoprotein, low density (LDL), human Page 491

LPS buffer Molecular biology grade

B

Lysis buffer containing SDS, aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

EDTA (pH 8.0) 37.5 mM
NaCl 5 mM
SDS 0.5 %
Tris · HCl (pH 7.0) 50 mM

Order-No.	Quantity
A4327,0500	500 ml
A4327,1000	1 L

Luciferase assay buffer

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

ATP * 5 mM (final conc.)
Glycylglycine 25 mM
MgSO₄ 15 mM

Order-No.	Quantity
A3820,0100	100 ml
A3820,0250	250 ml

◆ Add directly before use; not supplied.

D-Luciferin free acid

B

Firefly Luciferin, (S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid

C₁₁H₈N₂O₃S₂
M = 280.32 g/mol
CAS-No.: 2591-17-5
HS-No.: 29342080
EC-No.: 219-981-3

Storage: -20°C
protected from light
Shipment: ambient temperature

Melting point 202 - 204°C

Specification:

Assay min. 99 %
Mol. absorption (pH 11.5) .. min. 17500 (385 nm)
Water (K.F.) max. 1.0 %

Order-No.	Quantity
A1029,0010	10 mg
A1029,0025	25 mg
A1029,0050	50 mg
A1029,0100	100 mg

- Literature:** (1) DeLuca, M. & McElroy, W.D. (1978) *Methods Enzymol.* **57**, 3-15
(2) Bowie, L.J. (1978) *Methods Enzymol.* **57**, 15-28
(3) Bronstein, I. et al. (1994) *Anal. Biochem.* **219**, 169-181
(4) Janknecht, R. et al. (1995) *Oncogene* **10**, 1209-1216

Purification and properties of firefly luciferase.
Synthesis of firefly luciferin and structural analogs.
Chemiluminescent and bioluminescent reporter gene assays.
SAP1a is a nuclear target of signaling cascades involving ERKs.

Comment: The luciferase/luciferin assay system is one of the most sensitive reporter gene assays. Luciferase activity from a single microinjected cell can be determined. Therefore it is the assay system of choice for transfection assays with low transfection efficiencies. It is much more sensitive than CAT (approx. 1000X), non-radioactive and therefore less expensive and easier to perform.

Luciferin as powder and aqueous solutions of Luciferin are stable at -20°C or -70°C (long-term storage). Aqueous solutions are usually made up as 25 mM stock solutions (100X) in water (A1006) or in 25 mM NaOH (A1029). Several times freezing and thawing of the stock solution does not influence the quality.

D-Luciferin sodium salt

B

(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid sodium salt

$C_{11}H_7NaN_2O_3S_2$
 $M = 302.31$ g/mol
 CAS-No.: 103404-75-7
 HS-No.: 29342080

Storage: -20°C
 protected from light
 Shipment: ambient temperature

Specification:

Assay min. 98.5 %
 Molar absorption min. 17500 (385 nm
 pH 11.5)
 Solubility clear, yellow (4 mg in
 1 ml 0.005 M
 Glycine)

Order-No.	Quantity
A1006,0010	10 mg
A1006,0025	25 mg
A1006,0050	50 mg
A1006,0100	100 mg

Comment: Literature and **Comment** see D-Luciferin free acid (A1029).

Lugol's - Solution

Iodine-Potassium iodide - Solution

HS-No.: 38220000

Storage: RT
 protected from light
 LGK: 10 - 13

WGK: nwg

Lugol's - Solution (concentrated) 5 % Iodine

C

Composition:

Iodine 50 g/L
 Potassium iodide 100 g/L

Specification:

pH (20°C; H₂O) 4.0 - 4.5

Order-No.	Quantity
A6915,0100	100 ml
A6915,0500	500 ml
A6915,1000	1 L
A6915,10006	6 x 1 L

Lugol's - Solution (diluted) 0.33 % Iodine

C

Composition:

Iodine 3.33 g/L
 Potassium iodide 6.66 g/L

Specification:

pH (20°C; H₂O) 4.0 - 4.5

Order-No.	Quantity
A3505,0250	250 ml
A3505,0500	500 ml
A3505,1000	1 L
A3505,10006	6 x 1 L

Luminol

B

5-Amino-1,2,3,4-tetrahydrophthalazine-1,4-dione, 3-Aminophthalhydrazide

$C_8H_7N_3O_2$
 $M = 177.17$ g/mol
 CAS-No.: 521-31-3
 HS-No.: 29339980
 EC-No.: 208-309-4

Storage: RT
 under argon
 LGK: 10 - 13
 Disposal: 3

WGK: 3
 Warning
 H319-H335-H315
 P305+P351+P338-P280



Melting point 319°C

Specification:

Assay min. 95 %
 λ_{max} 1 (0.1 M NaOH) 344 - 350 nm
 λ_{max} 2 (0.1 M NaOH) 297 - 303 nm
 Water (K.F.) max. 1 %

Order-No.	Quantity
A2185,0005	5 g
A2185,0010	10 g
A2185,0025	25 g

Literature: (1) Roswell, D.F. & White, E.H. (1978) *Methods Enzymol.* **57**, 409-423
 (2) Huu, T.P. et al. (1984) *Anal. Biochem.* **142**, 467-472

(3) Leong, M.M.L. & Fox, G.R. (1990) *Methods Enzymol.* **184**, 442-451
 (4) Yakunin, A.F. & Hellenbeck, P.C. (1998) *Anal. Biochem.* **258**, 146-149

The chemiluminescence of Luminol and related Hydrazides.
 Luminol assay for microdetermination of Superoxide Dismutase activity: Its application to human fetal blood.
 Luminescent detection of immunodot and Western blot.
 Luminol/Iodophenol Detection system for Western-Immunoblots.

Comment: The cyclic diacylhydrazide Luminol is oxidized by hydrogen peroxide, generating a radical of Luminol. This radical forms an endoperoxide which decomposes to form an 3-aminophthalate anion. If this molecule falls back into its ground state, light is emitted. The emission of light is enhanced by derivatives of 6-hydroxybenzothiazole or substituted phenols by a factor of up to 1000. The enhancer serve as mediators of the electron transfer. The chemiluminescence reaction with Luminol can be performed in several solvents, such as water, DMSO, DMF, lower alcohols etc. The pH optimum is pH 9.0 or above that value. Oxidation is the type of chemical reaction, using hypochlorite, potassium ferricyanide and persulfate, respectively, as oxidant (1). Several enzyme reactions, e. g. with dismutase (2) or peroxidases (3), have been coupled with the reaction of Luminol and oxygen radicals to emit light. The optimum conditions of the peroxidase system include approximately 0.2 mM Luminol, 4 mM 4-iodophenol and 17.6 mM hydrogen peroxide (4). The detection limit is far below one nanogram of protein.

For preparing a stock solution one can dissolve 100 mg/ml of Luminol in either DMSO or 10 mM (1.7717 mg/ml) in 50 % of DMSO. The developing solution contains (Ref. 4) 0.5 mM Luminol, 4 mM 4-iodophenol and 50 mM glycine-NaOH buffer (pH 9.6) and can be stored indefinitely at room temperature when protected from light. Hydrogen peroxide (17.6 mM final concentration) is added just before use. The reagent can be used several times. Just hydrogen peroxide has to be added again (4).

Lup-20(29)-en-3,28-diol see Betulin HPLC grade Page 137

Luria-Bertani - Medium according to Lennox see LB-Medium - Powder according to Lennox Page 482

Lutein pure

B

Xanthophyll, β , ϵ -Carotene-3,3'-diol
from *Brassica oleracea*

$C_{40}H_{56}O_2$
 $M = 568.88$ g/mol
CAS-No.: 127-40-2
HS-No.: 29420000

Storage: -20°C

Specification:

Assay min. 90 %

Order-No.
A1283,0005

Quantity
5 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**Luteolin HPLC grade**

B

3',4',5,7-Tetrahydroxyflavone,
Digitoflavone
from *Reseda luteola*

$C_{15}H_{10}O_6$
 $M = 286.23$ g/mol
CAS-No.: 491-70-3
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Warning
H335-H319-H315
P280-P305+P351+P338

**Specification:**

Assay min. 99 %

Order-No. **Quantity**
A3424,0020 20 mg
A3424,0020DOC 20 mg
A3424,0050 50 mg
A3424,0050DOC 50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Luteolin-7-glucoside HPLC grade

B

Cynarosid, Glucoluteolin
from *Reseda luteola*

$C_{21}H_{20}O_{11}$
 $M = 448.38$ g/mol
CAS-No.: 5373-11-5
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No. **Quantity**
A4510,0020 20 mg
A4510,0020DOC 20 mg
A4510,0050 50 mg
A4510,0050DOC 50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Lycopin HPLC grade

B

ψ , ψ -Carotene, (all-trans)-Lycopin
from *Solanum lycopersicum*

$C_{40}H_{56}$
 $M = 536.88$ g/mol
CAS-No.: 502-65-8
HS-No.: 32030010

Storage: -20°C

Specification:

Assay min. 90 %

Order-No. **Quantity**
A5311,0005 5 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**Lympho-Pure**

B

Separation medium for Lymphocytes

HS-No.: 38220000

Storage: 2-8°C

Composition:

Ficoll 28.24 g/L
Sodium diatrizoate 49.85 g/L

Specification:

Pyrogen test complies
Appearance of solution off-white, clear
Density 1.077 - 1.078
Heavy metals max. 10 ppm

pH 7.2 ± 0.2
Chloride max. 0.04 %
Sulfate max. 0.01 %

Order-No. **Quantity**
A4410,0100 100 ml
A4410,0500 500 ml

L-Lysine monohydrate

L-2,6-Diamino-n-hexanoic acid
monohydrate

$C_6H_{14}N_2O_2 \cdot H_2O$
 $M = 164.21 \text{ g/mol}$
CAS-No.: 39665-12-8
HS-No.: 29224100
EC-No.: 200-294-2

Storage: RT
LGK: 10 - 13

Melting point 225°C
Solubility (25°C) 300 g/L (H_2O)

L-Lysine monohydrate Cell culture grade

B

Specification:

Pyrogen test complies	Chloride max. 0.02 %
Assay (titr.) min. 99 %	Sulfate max. 0.02 %
α 20°C/D; 8 % 6 M HCl +25.5° - +27.0°	As max. 0.0001 %
Other amino acids max. 0.5 %	Fe max. 0.001 %
Ammonium max. 0.1 %	Pb max. 0.001 %

Order-No.	Quantity
A3448,0025	25 g
A3448,0100	100 g
A3448,0250	250 g
A3448,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Lysine monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %	Chloride max. 0.02 %
α 20°C/D; 8 % 6 M HCl +25.5° - +27.0°	Sulfate max. 0.02 %
Heavy metals (as Pb) max. 0.001 %	
Other amino acids max. 0.5 %	
Ammonium max. 0.1 %	

Order-No.	Quantity
A3466,0025	25 g
A3466,0100	100 g
A3466,0250	250 g
A3466,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Lysine monohydrate pure DAB

C

Specification:

Assay (titr.) 98.5 - 101.5 %	Sulfated ash max. 0.1 %	Chloride max. 0.03 %	<table> <thead> <tr> <th>Order-No.</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>A1342,0025</td> <td>25 g</td> </tr> <tr> <td>A1342,0100</td> <td>100 g</td> </tr> <tr> <td>A1342,0250</td> <td>250 g</td> </tr> </tbody> </table>	Order-No.	Quantity	A1342,0025	25 g	A1342,0100	100 g	A1342,0250	250 g
Order-No.	Quantity										
A1342,0025	25 g										
A1342,0100	100 g										
A1342,0250	250 g										
α 20°C/D; 8 % 6 M HCl +25.5° - +27.0°	pH (2.5 %; H_2O) 9.0 - 10.5	Sulfate max. 0.02 %									
Appearance of solution complies	Other amino acids max. 0.5 %	Fe max. 0.001 %									
Heavy metals (as Pb) max. 0.001 %	Water (K.F.) 10.0 - 11.5 %										
Identity complies	Ammonium max. 0.02 %										

◆ All amino acids from AppliChem are of non-animal origin!

L-Lysine monohydrochloride

L-2,6-Diamino-n-hexanoic acid
monohydrochloride

$C_6H_{14}N_2O_2 \cdot HCl$
 $M = 182.65 \text{ g/mol}$
CAS-No.: 657-27-2
HS-No.: 29224100
EC-No.: 211-519-9

Storage: RT
LGK: 10 - 13

WGK: 1

Melting point 264 - 265°C
Solubility (25°C) 420 g/L (H_2O)

L-Lysine monohydrochloride Cell culture grade

B

Specification:

Pyrogen test complies	Other amino acids max. 0.5 %	Fe max. 0.001 %	<table> <thead> <tr> <th>Order-No.</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>A3713,0250</td> <td>250 g</td> </tr> <tr> <td>A3713,0500</td> <td>500 g</td> </tr> <tr> <td>A3713,1000</td> <td>1 kg</td> </tr> </tbody> </table>	Order-No.	Quantity	A3713,0250	250 g	A3713,0500	500 g	A3713,1000	1 kg
Order-No.	Quantity										
A3713,0250	250 g										
A3713,0500	500 g										
A3713,1000	1 kg										
Assay (titr.) min. 99 %	Ammonium max. 0.1 %	Pb max. 0.001 %									
α 20°C/D; 8 % 6 M HCl +21.0° - +21.4°	Sulfate max. 0.02 %										
pH (10 %; H_2O) 5 - 6	As max. 0.0001 %										
Identity complies											

◆ All amino acids from AppliChem are of non-animal origin!

L-Lysine monohydrochloride BioChemica

B

Specification:

Assay (titr.) min. 99 %	Ammonium max. 0.1 %	A (1 cm/0.5 M in H_2O)	<table> <thead> <tr> <th>Order-No.</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>A3735,0250</td> <td>250 g</td> </tr> <tr> <td>A3735,0500</td> <td>500 g</td> </tr> <tr> <td>A3735,1000</td> <td>1 kg</td> </tr> </tbody> </table>	Order-No.	Quantity	A3735,0250	250 g	A3735,0500	500 g	A3735,1000	1 kg
Order-No.	Quantity										
A3735,0250	250 g										
A3735,0500	500 g										
A3735,1000	1 kg										
α 20°C/D; 8 % 6 M HCl +21.0° - +22.5°	Sulfate max. 0.02 %	260 nm max. 0.1									
Heavy metals (as Pb) max. 0.001 %		280 nm max. 0.1									
Insoluble matter complies											
Other amino acids max. 0.5 %											

◆ All amino acids from AppliChem are of non-animal origin!

L-Lysine monohydrochloride pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %	Identity complies	Ammonium max. 0.02 %	<table> <thead> <tr> <th>Order-No.</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>A1706,0250</td> <td>250 g</td> </tr> <tr> <td>A1706,0500</td> <td>500 g</td> </tr> <tr> <td>A1706,1000</td> <td>1 kg</td> </tr> <tr> <td>A1706,10006</td> <td>6 x 1 kg</td> </tr> </tbody> </table>	Order-No.	Quantity	A1706,0250	250 g	A1706,0500	500 g	A1706,1000	1 kg	A1706,10006	6 x 1 kg
Order-No.	Quantity												
A1706,0250	250 g												
A1706,0500	500 g												
A1706,1000	1 kg												
A1706,10006	6 x 1 kg												
α 20°C/D; 8 % HCl 250 g/L +21.0° - +22.5°	Loss on drying max. 0.4 %	Chloride 19.0 - 19.6 %											
α 25°C/D; 8 % 6 M HCl +20.4° - +21.4°	Organic vol. impurities complies	Sulfate max. 0.03 %											
Appearance of solution complies	Sulfated ash max. 0.1 %	Fe max. 0.003 %											
Heavy metals (as Pb) max. 0.001 %	Other amino acids max. 0.5 %												

◆ All amino acids from AppliChem are of non-animal origin!

L-Lysine acetate salt pure USP

C

(s)-2,6-Diaminohexanoic acid

 $C_6H_{14}N_2O_2 \cdot C_2H_4O_2$
 $M = 206.24 \text{ g/mol}$
CAS-No.: 57282-49-2
HS-No.: 29224100

Storage: RT

Specification:

Assay (titr.) 98.0 - 102.0 %
 α 20°C/D; 10 %, H₂O +8.4° - +9.9°
Chromatogr. purity complies
Heavy metals (as Pb) max. 0.0015 %
Identity (IR) complies

Loss on drying max. 0.2 % (80°C, 3 h)
Organic vol. impurities complies
Residue on ignition max. 0.4 %
Chloride max. 0.05 %

Sulfate max. 0.03 %
Fe max. 0.003 %

Order-No.	Quantity
A6315,0100	100 g
A6315,0250	250 g
A6315,0500	500 g

♦ All amino acids from AppliChem are of non-animal origin!

Lysis buffer for luciferase assays see Extraction buffer for luciferase and β -galactosidase assay Page 344

Lysis buffer with CTAB see CTAB - Lysis buffer BioChemica Page 248

Lysis solution for red blood cells see DNA Isolation Kits Page 294

Lysozyme

[E.C. 3.2.1.17], Muramidase

Hydrochloride form salt-free, albumin-free, freeze-dried
from chicken egg white

 $M = \text{approx. } 14400 \text{ g/mol}$
CAS-No.: 9001-63-2
HS-No.: 35079090
EC-No.: 232-620-4

Storage: -20°C
LGK: 10 - 13

Lysozyme Molecular Biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Activity (pH 6.2) min. 20000 U/mg

Order-No.	Quantity
A4972,0001	1 g
A4972,0010	10 g
A4972,0050	50 g

Lysozyme BioChemica

B

Specification:

Activity (pH 6.2) min. 20000 U/mg

Order-No.	Quantity
A3711,0001	1 g
A3711,0010	10 g
A3711,0050	50 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001, *Current Protocols in Molecular Biology*, John Wiley & Sons, New York.
(2) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. pp. A1.8+4.51. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Comment: Lysozyme (Muramidase) preferentially hydrolyses the β -1,4-glycosidic binding between N-Acetyl muraminic acid and N-Acetyl glucosamine, a component of the proteoglycan-cell wall of certain microorganisms. The enzyme is present in many organisms. In molecular biology, the enzyme from chicken white egg is used to lyse *E. coli* for the isolation of plasmid-DNA (ref. 1 miniprep: Suppl. 15; pp. 1.6-4-7). The working concentration is 200 μ g/300 μ l. To increase the plasmid yield (approx. 5 - 10 %) in the so-called 'maxiprep', lysozyme may be added (ref. 1 maxiprep: Suppl. 41; pp. 1.7-2-4). Another application is the lysis of bacteria for the preparation of bacterial RNA (ref. 1 Suppl. 15; pp. 4.4-4-5). In this case the working concentration is 40 μ g/ml (stock solution 50 mg/ml).

Form: The protein itself is Lysozyme chloride - the chloride is part of the protein structure. There is no free sodium chloride in the preparation. The maximum chloride content is 4 %.

Stability: The lyophilized powder of lysozyme is stable for many years at +4°C. In solution, the stability at pH values from 4 to 5 at +4°C is several weeks and at room temperature several days. The pH-optimum is at 9.2, the isoelectric point at 11.0. Lysozyme will be inhibited by surfactants like SDS or alcohols and fatty acids, imidazole and indol-derivatives. Stock solutions in 10 mM Tris - HCl (pH 8.0) are prepared with a concentration of 10, 25 or 50 mg/ml, usually just before use.

Lysozyme, human

B

[E.C. 3.2.1.17]

supplied liquid in 50 mM sodium acetate, pH 6.0
from human neutrophil

CAS-No.: 9001-63-2
HS-No.: 35079090

Storage: 2-8°C

Specification:

Activity (37°C) min. 100,000 Shu-gar-U/ml
Protein min. 0.1 mg/ml

Order-No.	Quantity
A6971,0050	50 μ g
A6971,0500	500 μ g

Comment:Unit Definition: One Shugar unit is defined as the amount of enzyme that will cause a decrease in absorbance of 0.001 at 450 nm per minute due to lysis of *Micrococcus lysodeikticus* at 37°C, pH 7.0.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

D-Lyxopyranose see D(-)-Lyxose BioChemica Page 501

L-Lyxopyranose see L(+)-Lyxose BioChemica Page 501

D(-)-Lyxose BioChemicaB

D-Lyxopyranose	C ₅ H ₁₀ O ₅	Storage: RT	hygroscopic		
Substrate for D-Lyxose-keto-isomerase	M = 150.13 g/mol				
	CAS-No.: 1114-34-7				
	HS-No.: 29400000				
	EC-No.: 214-212-8				
Melting range	117 - 118°C				
Specification:				Order-No.	Quantity
Assay	min. 99 %			A6864,0005	5 g
α20°C/D; 4 %, H ₂ O; 1 h	-14.0° ± 0,5°			A6864,0010	10 g
				A6864,0050	50 g

L(+)-Lyxose BioChemicaB

L-Lyxopyranose	C ₅ H ₁₀ O ₅	Storage: RT	hygroscopic		
	M = 150.13 g/mol				
	CAS-No.: 1949-78-6				
	HS-No.: 29400000				
	EC-No.: 217-763-2				
Melting range	116 - 121°C				
Specification:				Order-No.	Quantity
Assay	min. 99 %			A6886,0250	250 mg
α20°C/D; 4 %, H ₂ O	+14.0° ± 0,5°			A6886,0500	500 mg
				A6886,0001	1 g

MacConkey-AgarC

	HS-No.: 38220000	Storage: RT			
		LGK: 10 - 13			
Composition:		Specification:			
Agar	15.0 g/L	pH before autoclaving		Order-No.	Quantity
Bile salts	1.5 g/L	approx. 7.4 (20°C)		A3750,0500	500 g
Crystal violet	0.001 g/L			A3750,5000	5 kg
Lactose	10.0 g/L				
Neutral red	0.03 g/L				
♦ Attention:	Altered composition.				

Literature: (1) MacConkey, A. (1905) *J. Hyg.* **5**, 333-378 Lactose-Fermenting Bacteria in Feces.

Comment: This selective and differential medium is used for the detection of coliform organisms and enteric pathogens.

Directions: Suspend 52 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

MacConkey-Broth (Purple)C

	HS-No.: 38220000	Storage: RT			
		LGK: 10 - 13			
Composition:		Specification:			
Bile salts	5.0 g/L	pH before autoclaving		Order-No.	Quantity
Bromocresol purple	0.01 g/L	approx. 7.4 (20°C)		A3868,0500	500 g
Lactose	10.0 g/L			A3868,5000	5 kg
Peptones	18.0 g/L				
Sodium chloride	5.0 g/L				

Literature: (1) International Standards for Drinking Water. (1963) 2nd ed., World Health Organization, Geneva

Comment: This differential medium containing bromocresol purple is used for the detection of coliform organisms.

Directions: Suspend 38 g in 1 L of distilled water and heat gently to dissolve completely. Mix well and distribute into final containers fitted with Durham's tubes. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Macrofusine see Fumonisin B1 BioChemica Page 366

α₂-MacroglobulinB

lyophilized from 0.025 M Tris · HCl (pH 8.0), with 0.1 M NaCl from human plasma	M = approx. 725000 g/mol	Storage: -20°C	P260-P262		
	HS-No.: 35040090				
Specification:				Order-No.	Quantity
Assay (GE)	min. 96 %			A2186,0001	1 mg
Solubility (0.5 %; H ₂ O)	turbid, light-yellow				
Literature:	(1) Barrett, A.J. (1981) <i>Methods Enzymol.</i> 80 , 737-754	α ₂ -Macroglobulin.			
	(2) Salvesen, G. & Enghild, J. (1993) <i>Methods Enzymol.</i> 223 , 121-141	α-Macroglobulins: Detection and characterization.			

recombinant Human Macrophage Colony Stimulating Factor see rHu M-CSF bioconfident grade Page 521

recombinant Human Macrophage Colony-Stimulating Factor see rHu M-CSF Page 522

recombinant Mouse Macrophage Colony-Stimulating Factor see rM MC-SF Page 522

recombinant Human Macrophage Inflammatory Protein-1α see rHu MIP-1α Page 545

recombinant Human Macrophage Inflammatory Protein-1β see rHu MIP-1β Page 545

recombinant Mouse Macrophage Inflammatory Protein-1α see rM MIP-1α Page 545

recombinant Mouse Macrophage Inflammatory Protein-1β see rM MIP-1β Page 545

recombinant Human Macrophage Inflammatory Protein-3α, see rHu MIP-3α Page 546

recombinant Human Macrophage Inflammatory Protein-3β see rHu MIP-3β Page 546
recombinant Mouse Macrophage Inflammatory Protein-3α see rM MIP-3α Page 546
recombinant Human Macrophage Inflammatory Protein-4 see rHu MIP-4 Page 546
recombinant Human Macrophage Inflammatory Protein-1α see rHu MIP-1α bioconfident grade Page 545
Magenta see Fuchsin basic (C.I. 42510) Microscopy grade Page 364

Magenta-Glucuro CHA salt *BioChemica*

B

5-Bromo-6-chloro-3-indolyl-β-D-glucuronide cyclohexylammonium salt

C₂₀H₂₆BrClN₂O₇
M = 521.79 g/mol
CAS-No.: 144110-43-0
HS-No.: 29389090

Storage: -20°C
protected from light
LGK: 10 - 13

Specification:

Assay min. 98 %
α20°C/D; 1 %, DMF/H₂O -69° ± 2°

Order-No.	Quantity
A1144,0025	25 mg
A1144,0100	100 mg

Magenta Marker see Electrophoresis Size Marker/Standard Protein Page 325
Magnesium glowed see Magnesium oxide Page 506

Magnesium Turnings acc. to Grignard for synthesis

C

suitd for Grignard reactions

Boiling point 1090°C (1000°
hPa)
Melting point 651°C

Mg
M = 24.31 g/mol
CAS-No.: 7439-95-4
HS-No.: 81043000
EC-No.: 231-104-6

Storage: RT
LGK: 4.2
Class / PG: 4.1/III
UN1869
WGK: nwg
Danger
H228-H261-H252
P210-P402+P404



Specification:

Assay min. 99 %

Order-No.	Quantity
A0575,0250	250 g
A0575,0500	500 g
A0575,1000	1 kg
A0575,10006	6 x 1 kg

Magnesium acetate tetrahydrate

Acetic acid magnesium salt tetrahydrate

C₄H₆MgO₄ · 4H₂O
M = 214.46 g/mol
CAS-No.: 16674-78-5
HS-No.: 29152900
EC-No.: 205-554-9

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: nwg

Melting point 80°C
Solubility (15°C) 1200 g/L (H₂O)

Magnesium acetate tetrahydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
pH (10 %; H₂O) 7.0 - 9.0
Chloride max. 0.001 %

Sulfate max. 0.001 %
Cu max. 0.005 %
Fe max. 0.0005 %
Mn max. 0.0005 %

Pb max. 0.0005 %
Zn max. 0.0005 %

Order-No.	Quantity
A7008,0100	100 g
A7008,0250	250 g
A7008,0500	500 g

Magnesium acetate tetrahydrate ultrapure

B

Specification:

Assay (titr.) min. 99.5 %
Nitrogen max. 0.001 %
pH (10 %; H₂O) 7.5 - 8.5
Chloride max. 0.001 %

Sulfate max. 0.001 %
As max. 0.00005 %
Ca max. 0.001 %
Cu max. 0.0005 %

Fe max. 0.0001 %
Pb max. 0.0005 %
Zn max. 0.0002 %

Order-No.	Quantity
A3886,0100	100 g
A3886,0250	250 g
A3886,0500	500 g

Literature: (1) Girbés, T. et al. (1979) *Methods Enzymol.* **59**, 353-362

(2) Amils, R. et al. (1979) *Methods Enzymol.* **59**, 449-461

Preparation and assay of purified *Escherichia coli* polysomes devoid of free ribosomal subunits and endogenous GTPase activities.
Reconstitution of 50 S ribosomal subunits from *Escherichia coli*.

Magnesium acetate tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Insoluble matter max. 0.005 %
Chloride max. 0.001 %
Sulfate max. 0.001 %
Ca max. 0.001 %

Cu max. 0.0005 %
Fe max. 0.0001 %
Mn max. 0.001 %
Na max. 0.001 %
Pb max. 0.0005 %

Zn max. 0.0002 %

Order-No.	Quantity
A1877,0250	250 g
A1877,0500	500 g
A1877,1000	1 kg
A1877,10006	6 x 1 kg

Magnesium acetate tetrahydrate pure Ph. Eur.

C

Specification:

Assay (titr.) 98.0 - 101.0 %
Heavy metals (as Pb) max. 0.004 %
Identity complies
Readily oxid. subst. complies
pH (5 %; H₂O) 7.5 - 8.5
Water (K.F.) 33.0 - 35.0 %

Chloride max. 0.033 %
Nitrate max. 0.0003 %
Sulfate max. 0.06 %
Al max. 0.0001 %
Ca max. 0.01 %
K max. 0.1 %

Na max. 0.5 %

Order-No.	Quantity
A3576,0500	500 g
A3576,1000	1 kg
A3576,10006	6 x 1 kg
A3576,5000	5 kg
A3576,9010	10 kg

Magnesium acetate - Solutions (1 M)

HS-No.: 38220000 Storage: RT
LGK: 13
Disposal: 14

Magnesium acetate - Solution (1 M) Molecular biology grade B

Composition:		Specification:	Order-No.	Quantity
Magnesium acetate	142.39 g/L	DNases/RNases/Proteases	A6999,0005	5 ml
		 not detectable	A6999,0100	100 ml
			A6999,0500	500 ml

Magnesium acetate - Solution (1 M) B

Composition:		Order-No.	Quantity
Magnesium acetate	142.39 g/L	A3887,0500	500 ml
		A3887,1000	1 L

Magnesium-L-aspartate see L-Aspartic acid magnesium salt pure Ph. Eur. Page 122
Magnesium carbonate basic see Magnesium hydroxide carbonate light Page 505

Magnesium chloride hexahydrate

MgCl₂ · 6H₂O Cl₂Mg · 6H₂O Storage: RT WGK: nwg
M = 203.30 g/mol LGK: 10 - 13
Melting point 116°C (dec.) CAS-No.: 7791-18-6 Disposal: 14
Solubility (20°C) 1670 g/L (H₂O) HS-No.: 28273100
EC-No.: 232-094-6

Magnesium chloride hexahydrate Molecular biology grade B

Specification:			Order-No.	Quantity
DNases/RNases/Proteases	not detectable	Phosphate	 max. 0.0005 %	
Assay (titr.)	min. 99.5 %	Sulfate	 max. 0.002 %	
pH (5 %; H ₂ O)	5.0 - 6.5 (20°C)	As	 max. 0.0001 %	
Water (K.F)	51 - 55 %	Ba	 max. 0.002 %	
Ammonium	max. 0.002 %	Ca	 max. 0.005 %	
		Fe	 max. 0.0005 %	
		K	 max. 0.001 %	
		Mn	 max. 0.0005 %	
		Na	 max. 0.001 %	
		Pb	 max. 0.0005 %	
			A4425,0250	250 g
			A4425,0500	500 g
			A4425,1000	1 kg

Magnesium chloride hexahydrate BioChemica B

Specification:			Order-No.	Quantity
Assay (titr.)	min. 99.5 %	Phosphate	 max. 0.0005 %	
Heavy metals (as Pb)	max. 0.001 %	Sulfate	 max. 0.002 %	
Insoluble matter	complies		A (1 cm/1 M in H ₂ O)	
pH (5 %; H ₂ O; 20°C)	5.0 - 6.5		260 nm	 max. 0.03
Ammonium	max. 0.002 %		280 nm	 max. 0.02
			A1036,0500	500 g
			A1036,1000	1 kg
			A1036,5000	5 kg

Literature: (1) Palmiter, R.D. (1974) *Biochemistry* **13**, 3606-3615
(2) Chen, M. & Christen, P. (1997) *Anal. Biochem.* **246**, 263-264

Magnesium precipitation of ribonucleoprotein complexes. Expedient techniques for the isolation of undegraded polysomes and messenger ribonucleic acid.
Removal of chromosomal DNA from *E. coli*-nuclear extracts with magnesium in the lysis buffer.

Magnesium chloride hexahydrate p. A. C

Specification:		Order-No.	Quantity
Assay (titr.)	min. 99 %	A3618,0500	500 g
pH (5 %; H ₂ O)	5.0 - 6.5 (20°C)	A3618,1000	1 kg
Ammonium	max. 0.002 %	A3618,10006	6 x 1 kg
Phosphate	max. 0.0005 %	A3618,5000	5 kg
Sulfate	max. 0.002 %	A3618,9010	10 kg
As	max. 0.0001 %	A3618,9025	25 kg
Ba	max. 0.002 %		
		Ca	 max. 0.005 %
		Fe	 max. 0.0005 %
		K	 max. 0.001 %
		Mn	 max. 0.0005 %
		Na	 max. 0.001 %
		Pb	 max. 0.0005 %

Magnesium chloride hexahydrate pure Ph. Eur., BP, USP, Food grade C

Specification:			Order-No.	Quantity	
Assay (titr.)	98.0 - 101.0 %	pH (5 %; H ₂ O; 20°C)	Ca	A1447,1000	1 kg
Acidic/alkaline react. subst.	complies	Water (K.F.)	Fe	A1447,10006	6 x 1 kg
Appearance of solution	complies	Bromide	Hg	A1447,5000	5 kg
Heavy metals (as Pb)	max. 0.001 %	Sulfate	K	A1447,9010	10 kg
Identity	complies	As	Pb	A1447,9025	25 kg
Insoluble matter	max. 0.005 %	Ba	Zn		
			max. 0.01 %		
			max. 0.001 %		
			max. 0.0001 %		
			max. 0.05 %		
			max. 0.001 %		
			max. 0.0025 %		

Magnesium chloride - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: nwg

Magnesium chloride solution (1 M) Molecular Biology grade		B	
Composition: MgCl ₂ · 6H ₂ O (A4425) 203.30 g/L		Specification: DNases/RNases/Proteases not detectable	
		Order-No. A4998,0500 A4998,1000 A4998,0005	Quantity 500 ml 1 L 5 x1 ml

Magnesium chloride - Solution (1 M)		B	
Composition: MgCl ₂ · 6H ₂ O 203.30 g/L		Order-No. A3888,0500 A3888,1000	Quantity 500 ml 1 L

Magnesium chloride - Solution (100 mM) Molecular biology grade		B	
<i>suitable for PCR</i>			
Specification: DNases/RNases/Proteases not detectable Concentration 100 mM		Order-No. A5324,0001 A5324,0005	Quantity 1 ml 5 ml

Magnesium chloride - Solution (50 mM) Molecular biology grade		B	
<i>suitable for PCR</i>			
Composition: MgCl ₂ · 6H ₂ O (A4425) 10.17 g/L		Specification: DNases/RNases/Proteases not detectable	
		Order-No. A5329,0001 A5329,0005	Quantity 1 ml 5 ml

Magnesium chloride - Solution (25 mM) Molecular biology grade		B	
<i>suitable for PCR</i>			
Composition: MgCl ₂ · 6H ₂ O 5.08 g/L		Specification: DNases/RNases/Proteases not detectable Concentration 25 mM	
		Order-No. A5076,0001 A5076,0005	Quantity 1 ml 5 ml

Magnesium chloride - Solution (100 mM), DNA free		B	
<i>suitable for PCR</i>			
Specification: Bacterial DNA not detectable (min. 40 PCR cycle) Concentration 100 mM MgCl ₂		Order-No. A8512,1005	Quantity 10 x 0,5 ml

Magnesium chloride - Standard volumetric solution (1 M)		C	
<i>1 mol/L (1 N Solution)</i>			
Specification: Factor limits 0.998 - 1.002		Order-No. A1532,0500 A1532,1000 A1532,10006 A1532,5000	Quantity 500 ml 1 L 6 x 1 L 5 L

Magnesium chloride - Standard volumetric solution (0.1 M)		C	
<i>0.1 mol/L (0.1 N Solution)</i>			
Specification: Factor limits 0.998 - 1.002		Order-No. A3328,0500 A3328,1000 A3328,5000	Quantity 500 ml 1 L 5 L

Magnesium citrate pure

C

Magnesium hydrogen citrate, Citric acid
magnesium salt

$C_6H_8MgO_7$
 $M = 214.43 \text{ g/mol}$
CAS-No.: 7779-25-1
HS-No.: 29181500
EC-No.: 231-923-9

Storage: RT
LGK: 10 - 13

WGK: nwg

Solubility (100°C) 250 g/L (H_2O)**Specification:**

Assay (Mg) 8.0 - 9.0 %
pH (5 %; H_2O) 3.5 - 4.5
Sulfate max. 0.2 %
As max. 0.0003 %
Cu max. 0.0025 %
Pb max. 0.001 %

Zn max. 0.0025 %

Order-No.	Quantity
A1556,0500	500 g
A1556,1000	1 kg
A1556,10006	6 x 1 kg
A1556,5000	5 kg
A1556,9010	10 kg

Glycero-3-phosphate magnesium salt/Magnesium glycerophosphate see DL- α -Glycerol phosphate magnesium salt hydrate pure Page 386
Magnesium hydrogen citrate see Magnesium citrate pure Page 505

Magnesium hydroxide carbonate light

$4MgCO_3 \cdot Mg(OH)_2 \cdot 5H_2O$, Magnesium
carbonate basic

$M = 485.00 \text{ g/mol}$
CAS-No.: 12125-28-9
HS-No.: 28369911
EC-No.: 235-192-7

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: nwg

Magnesium hydroxide carbonate light p. A.

C

Specification:

Assay (titr., Mg) min. 24 %
Chloride max. 0.005 %
Sulfate max. 0.005 %

Ba, Sr max. 0.001 %
Cu max. 0.0005 %
Fe max. 0.001 %

Na max. 0.1 %
Zn max. 0.0005 %

Order-No.	Quantity
A1878,0500	500 g
A1878,1000	1 kg

Magnesium hydroxide carbonate light pure Ph. Eur., Food grade

C

Specification:

Assay (titr., calc. on MgO) 40.0 - 45.0 %
Acetic acid-insoluble matter max. 0.05 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %
Identity complies

Water-soluble matter max. 1 %
Chloride max. 0.07 %
Sulfate max. 0.3 %
As max. 0.0002 %
Ca max. 0.75 %

Fe max. 0.04 %

Order-No.	Quantity
A5177,1000	1 kg
A5177,5000	5 kg
A5177,9010	10 kg
A5177,9025	25 kg

Magnesium nitrate hexahydrate $Mg(NO_3)_2 \cdot 6H_2O$

$MgN_2O_6 \cdot 6H_2O$
 $M = 256.41 \text{ g/mol}$
CAS-No.: 13446-18-9
HS-No.: 28342980
EC-No.: 233-826-7

Storage: RT
LGK: 5.1 B
Disposal: 14

Class / PG: 5.1/III
UN1474
Danger
H272
P262



Melting point 89° C

Solubility (20°C) 420 g/L (H_2O)**Magnesium nitrate hexahydrate p. A.**

C

Specification:

Assay (complexometr.) min. 99 %
 H_2O -insoluble matter max. 0.005 %
Heavy metals (as Pb) max. 0.0005 %
pH (5 %; H_2O) 5.0 - 7.0
Ammonium max. 0.001 %

Chloride max. 0.001 %
Phosphate max. 0.0005 %
Sulfate max. 0.002 %
As max. 0.0001 %
Ca max. 0.005 %

Fe max. 0.0005 %
Na max. 0.0005 %

Order-No.	Quantity
A4400,0500	500 g
A4400,1000	1 kg
A4400,10006	6 x 1 kg
A4400,5000	5 kg

Magnesium nitrate hexahydrate pure

C

Specification:

Assay (titr.) min. 98 %
Heavy metals (as Pb) max. 0.001 %
pH (5 %; H_2O) 5.0 - 7.0
Chloride max. 0.005 %
Sulfate max. 0.005 %

Order-No.	Quantity
A7271,0500	500 g
A7271,1000	1 kg
A7271,10006	6 x 1 kg
A7271,5000	5 kg
A7271,9010	10 kg
A7271,9025	25 kg

Magnesium oxide

Magnesium glowed

Boiling point 3600°C
Melting point 2800°C

MgO
M = 40.30 g/mol
CAS-No.: 1309-48-4
HS-No.: 25199010
EC-No.: 215-171-9

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
P260

Magnesium oxide light pure Ph. Eur.

Specification:

Assay (titr., calc. on calcined subst.) 98.0 - 100.5 %
Acetic acid-insoluble matter max. 0.1 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.003 %

Identity complies
Loss on ignition (900°C) max. 8.0 %
Soluble matter max. 2.0 %
Chloride max. 0.15 %
Sulfate max. 1.0 %

As max. 0.0004 %
Ca max. 1.5 %
Fe max. 0.1 %

Order-No.
A2387,0500 500 g
A2387,1000 1 kg

Magnesium oxide heavy pure

Specification:

Assay (titr., calc. on calcined subst.) min. 97.0 %
Loss on ignition (900°C) max. 5 %
Ca max. 0.6 %

Fe max. 0.1 %

Order-No.
A6609,1000 1 kg
A6609,10006 6 x 1 kg
A6609,5000 5 kg

Magnesium silicate activated see Florisil® for chromatography 60-100 mesh Page 352

Magnesium stearate pure Ph. Eur.

Stearic acid magnesium salt

$C_{36}H_{70}MgO_4$
M = 591.27 g/mol
CAS-No.: 557-04-0
HS-No.: 29157000
EC-No.: 209-150-3

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

Assay (titr.) 4.0 - 5.0 % Mg
Acidic/alkaline react. subst. complies
Assay of fatty acid (C_{16} and C_{18}) min. 90 %
Assay of fatty acid (C_{18}) min. 40 %
Bioburden (aerobic bact.) max. 10^3 CFU/g

Colony count (yeasts & moulds) max. 100 CFU/g
Identity complies
Loss on drying max. 6.0 %
Chloride max. 0.1 %
Sulfate max. 0.5 %

Cd max. 0.0003 %
Ni max. 0.0005 %
Pb max. 0.001 %

Order-No.
A2816,0500 500 g
A2816,1000 1 kg
A2816,10006 6 x 1 kg
A2816,5000 5 kg
A2816,9010 10 kg

Magnesium sulfate dried

$MgO_4S \cdot xH_2O$
M = 120.37 g/mol · xH_2O
CAS-No.: 15244-36-7
HS-No.: 28332100
EC-No.: 231-298-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: nwg
hygroscopic

Magnesium sulfate dried p. A.

Specification:

Assay (titr.) 62 - 70 %
Insoluble matter max. 0.05 %
Loss on drying (600°C) 26 - 32 %
Chloride max. 0.01 %

As max. 0.0002 %
Ca max. 0.01 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Zn max. 0.0005 %

Order-No.
A1879,1000 1 kg
A1879,10006 6 x 1 kg
A1879,5000 5 kg

Magnesium sulfate dried pure BP

Specification:

Assay ($MgSO_4$) 62.0 - 70.0 %
Acidity/Alkalinity complies
Heavy metals (as Pb) max. 0.0015 %
Identity complies
Insoluble matter complies

Chloride max. 0.04 %
As max. 0.0003 %
Fe max. 0.003 %

Order-No.
A1811,0500 500 g
A1811,1000 1 kg
A1811,10006 6 x 1 kg
A1811,5000 5 kg

Magnesium sulfate anhydrous pure

MgO_4S
M = 120.37 g/mol
CAS-No.: 7487-88-9
HS-No.: 28332100
EC-No.: 231-98-2

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
hygroscopic

Specification:

Assay (titr.) min. 98 %
Heavy metals (as Pb) max. 0.005 %
Loss on drying (650°C) max. 1 %
 $CaSO_4$ max. 0.5 %

Order-No.
A4837,1000 1 kg
A4837,10006 6 x 1 kg
A4837,5000 5 kg
A4837,9010 10 kg

* Use this product as drying agent only! Do not prepare reagents with this product!

Magnesium sulfate heptahydrate

$MgSO_4 \cdot 7H_2O$

$MgO_4S \cdot 7H_2O$

Storage: RT

WGK: 1

Solubility (20°C) 710 g/L (H_2O)

$M = 246.48$ g/mol

LGK: 10 - 13

CAS-No.: 10034-99-8

Disposal: 14

HS-No.: 2832100

EC-No.: 231-298-2

Magnesium sulfate heptahydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable

Assay (titr.) min. 99.5 %

Total N max. 0.002 %

Chloride max. 0.0005 %

As max. 0.0001 %

Ca max. 0.005 %

Cu max. 0.00005 %

Fe max. 0.0001 %

Mn max. 0.0001 %

Na max. 0.001 %

Pb max. 0.0005 %

Zn max. 0.00001 %

Order-No.

A6287,0250

A6287,0500

A6287,1000

Quantity

250 g

500 g

1 kg

Magnesium sulfate heptahydrate Cell culture grade

B

Specification:

Pyrogen test complies

Assay (titr.) min. 99.5 %

Total N max. 0.002 %

Chloride max. 0.0005 %

As max. 0.0001 %

Ca max. 0.005 %

Cu max. 0.00005 %

Fe max. 0.0001 %

Mn max. 0.0001 %

Na max. 0.001 %

Pb max. 0.0005 %

Zn max. 0.00001 %

Order-No.

A6414,0500

A6414,1000

Quantity

500 g

1 kg

Magnesium sulfate heptahydrate BioChemica

B

Specification:

Assay (titr.) min. 99.5 %

Heavy metals (as Pb) max. 0.001 %

Insoluble matter complies

pH (5 %; H_2O) 5.0 - 8.5 (20°C)

A (1 cm/1 M in H_2O)

260 nm max. 0.01

280 nm max. 0.01

Order-No.

A4101,0500

A4101,1000

A4101,5000

Quantity

500 g

1 kg

5 kg

Literature: (1) Trask, B. & VanDenEngh, G. (1990) *Methods Cell Biol.* **33**, 363-367

Chromosome and nuclei isolation with the $MgSO_4$ procedure.

Comment: Magnesium ions stabilize chromosomes in suspension and nuclei. The isolation buffer contains 10 mM $MgSO_4$ (1).

Magnesium sulfate heptahydrate p. A.

C

Specification:

Assay (titr.) min. 99.5 %

As max. 0.0002 %

Ca max. 0.005 %

Cu max. 0.00005 %

Fe max. 0.0001 %

Mn max. 0.0001 %

Na max. 0.001 %

Pb max. 0.0005 %

Zn max. 0.00001 %

Order-No.

A1037,0500

A1037,1000

A1037,10006

A1037,5000

A1037,9010

A1037,9025

Quantity

500 g

1 kg

6 x 1 kg

5 kg

10 kg

25 kg

Magnesium sulfate heptahydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %

Acidic/alkaline react. subst. complies

Appearance of solution complies

Heavy metals (as Pb) max. 0.001 %

Identity complies

Loss on drying 48 - 52 %

Organic vol. impurities complies

pH (5 %; H_2O) 5.0 - 9.2

Chloride max. 0.014 %

As max. 0.0002 %

Fe max. 0.002 %

Se max. 0.003 %

Order-No.

A1368,1000

A1368,10006

A1368,5000

A1368,9010

A1368,9025

Quantity

1 kg

6 x 1 kg

5 kg

10 kg

25 kg

Magnesium sulfate heptahydrate Technical grade

C

Specification:

Assay (titr.) min. 98 %

Order-No.

A5116,5000

A5116,9010

A5116,9025

Quantity

5 kg

10 kg

25 kg

Magnesium sulfate - Solutions

HS-No.: 38220000

Storage: RT

WGK: nwg

LGK: 10-13

Magnesium sulfate - Solution (1 M)

B

Composition:

$MgSO_4 \cdot 7H_2O$ 246.48 g/L

Order-No.

A3890,0500

A3890,1000

Quantity

500 ml

1 L

Magnesium sulfate - Solution (25 mM) Molecular biology grade

B

suitable for PCR

Composition:

MgSO₄ · 7H₂O 6.16 g/L

Specification:

DNases/RNases/Proteases
..... not detectable
Concentration 25 mM

Order-No.

A5080,0001

A5080,0005

Quantity

1 ml

5 ml

Magnesium sulfate - Standard volumetric Solution (1 M)

C

1 mol/L (2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.

A3507,1000

A3507,5000

Quantity

1 L

5 L

Magnesium sulfate - Standard volumetric Solution (0.5 M)

C

0.5 mol/L (1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.

A3538,1000

A3538,5000

Quantity

1 L

5 L

Magnesium sulfate - Standard volumetric Solution (0.01 M)

C

0.01 mol/L (0.02 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.

A2519,1000

A2519,10006

A2519,5000

Quantity

1 L

6 x 1 L

5 L

Malachite green G see Brilliant green (C.I. 42040) Page 158

Malachite green oxalate (C.I. 42000)

Basic Green 4

Melting point approx. 159°C
Solubility (24°C) 110 g/L (H₂O)
Transition interval pH 0.0 - 2.0
(yellow - green
blue)

C₅₂H₅₄N₄O₁₂
M = 927.02 g/mol
CAS-No.: 2437-29-8
HS-No.: 32041300
EC-No.: 219-441-7

Storage: RT
LGK: 10 - 13

Class / PG: 6.1/III
UN2811
WGK: 3
Danger
H302-H410-H361d-H318
P308+P313-P281-P305+P351+P338-
P273


Malachite green oxalate (C.I. 42000) Protein staining grade

B

Specification:

λ_{max} (H₂O) 616 - 620 nm
Loss on drying max. 8 %
TLC complies

Order-No.

A3889,0025

A3889,0100

Quantity

25 g

100 g

Malachite green oxalate (C.I. 42000)

C

Specification:

Assay (photometr.) min. 90 %
λ_{max} 616 - 620 nm
Loss on drying max. 5 %

Order-No.

A2388,0025

A2388,0100

Quantity

25 g

100 g

Malachite green oxalate - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Malachite green oxalate (A2388)
..... 0.1 %

Order-No.

A0576,0100

A0576,0500

A0576,1000

A0576,10006

Quantity

100 ml

500 ml

1 L

6 x 1 L

Maleic acid pure Ph. Eur.

B

<i>cis</i> -Butenedioic acid	$C_4H_4O_4$ $M = 116.07$ g/mol CAS-No.: 110-16-7 HS-No.: 29171990 EC-No.: 203-742-5	Storage: RT LGK: 8 B Disposal: 4	WGK: 1 Warning H302-H335-H319-H315 P305+P351+P338-P280-P302+P350
Melting point	134 - 138°C		
Solubility (25°C)	788 g/L (H ₂ O)		

**Specification:**

Assay (titr., calc. on anhydrous subst.)	Heavy metals (as Pb)	Fumaric acid	Order-No.	Quantity
99.0 - 101.0 %	max. 0.001 %	... complies	A1841,0100	100 g
Appearance of solution	Identity	Water (K.F.)	A1841,0500	500 g
... complies	... complies	... max. 2.0 %		
	Sulfated ash	Fe		
	... max. 0.1 %	... complies		

Maleic acid disodium salt pure

B

<i>cis</i> -Butenedioic acid disodium salt	$C_4H_2Na_2O_4 \cdot xH_2O$ $M = 160.04$ g/mol CAS-No.: 371-47-1 HS-No.: 29171990 EC-No.: 206-738-1	Storage: RT LGK: 10 - 13 Disposal: 3	Warning H335-H319-H315 P262-P305+P351+P338

**Specification:**

Assay	min. 99 %	Order-No.	Quantity
Heavy metals (as Pb)	max. 0.001 %	A4462,0100	100 g
Loss on drying (110°C; 2 h)	15 - 20 %	A4462,0250	250 g

m-Maleimidobenzoyl-N-hydroxysuccinimide ester see MBS Page 520

m-Maleimidobenzoyl-N-hydroxysulfosuccinimide ester sodium salt see Sulfo-MBS Page 779

N-(γ-Maleimidobutyryloxy) succinimide ester see GMBS Page 389

N-(β-Maleimidopropoxy) succinimide ester see BMPS Page 152

DL-Malic acid

<i>DL</i> -Hydroxysuccinic acid	$C_4H_5O_5$ $M = 134.09$ g/mol CAS-No.: 617-48-1 HS-No.: 29181998 EC-No.: 210-514-9	Storage: RT LGK: 10 - 13	WGK: 1 Warning H302-H335-H319-H315 P261-P305+P351+P338-P280
Melting range	127 - 130°C		
Solubility (20°C)	530 g/L (H ₂ O)		

**DL-Malic acid BioChemica**

B

Specification:

Assay (titr.)	min. 99 %	Insoluble matter	... complies	Maleic acid	... max. 0.05 %	Order-No.	Quantity
α20°C/D; 5 %, Pyridine	-0.1° - +0.1°	pH (1 %; H ₂ O)	2.1 - 2.5	Fe	... max. 0.001 %	A3644,0500	500 g
Heavy metals (as Pb)	max. 0.001 %	Fumaric acid	... max. 1 %			A3644,1000	1 kg

DL-Malic acid pure Ph. Eur., NF, E 296

C

Specification:						Order-No.	Quantity
Assay (titr.)	99.0 - 100.5 %	Related subst.	... complies	Pb	... max. 0.0002 %	A1427,0500	500 g
α20°C/D; 20 %, H ₂ O	-0.10° - +0.10°	Sulfated ash	... max. 0.1 %			A1427,1000	1 kg
Appearance of solution	... complies	Fumaric acid	... max. 1 %			A1427,10006	6 x 1 kg
H ₂ O-insoluble matter	... max. 0.1 %	Maleic acid	... max. 0.05 %			A1427,5000	5 kg
Heavy metals (as Pb)	... max. 0.002 %	Water (K.F.)	... max. 2.0 %			A1427,9010	10 kg
Identity	... complies	As	... max. 0.0003 %			A1427,9025	25 kg
Organic vol. impurities	... complies	Hg	... max. 0.0001 %				

DL-Malic acid monosodium salt pure

C

<i>DL</i> -Hydroxysuccinic acid monosodium salt	$C_4H_5NaO_5$ $M = 156.07$ g/mol CAS-No.: 68303-40-2 HS-No.: 29181998	Storage: RT

Specification:

Assay (titr.)	min. 98 %	Order-No.	Quantity
Heavy metals (as Pb)	max. 0.001 %	A6324,0025	25 g
Water (K.F.)	max. 2 %	A6324,0100	100 g
		A6324,0250	250 g

L(-)-Malic acid

Melting range 101 - 104°C
Solubility (20°C) 160 g/L (H₂O)

C₄H₆O₅
M = 134.09 g/mol
CAS-No.: 97-67-6
HS-No.: 29181998
EC-No.: 202-601-5

Storage: RT
LGK: 10 - 13

Warning
H319-H315-H335
P305+P351+P338

**L(-)-Malic acid BioChemica**

B

S(-)-2-Hydroxysuccinic acid

Specification:

Assay (titr.) min. 99 %
α20°C/D; 5 %, Pyridine -27° - -30°
Solubility (5 %; H₂O) clear, colorless
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A2130,0025	25 g
A2130,0100	100 g
A2130,0500	500 g

L(-)-Malic acid pure

C

Specification:

Assay (titr.) min. 99.0 %
α20°C/D -1.6° - -2.6°
Heavy metals max. 0.002 %
Residue on ignition max. 0.1 %

Fumaric acid max. 0.1 %
Maleic acid max. 0.05 %
Chloride max. 0.005 %
Sulfate max. 0.03 %

As max. 0.0002 %

Order-No.	Quantity
A7947,0025	25 g
A7947,0100	100 g
A7947,0500	500 g

L-Malic acid disodium salt monohydrate BioChemica

B

C₄H₄Na₂O₅ · H₂O
M = 196.06 g/mol
CAS-No.: 64887-73-6
HS-No.: 29181998

Storage: RT

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %

Order-No.	Quantity
A4984,0025N	25 g
A4984,0100	100 g

L(-)-Malic acid monosodium salt BioChemica

B

S(-)-2-Hydroxysuccinic acid sodium salt

C₄H₅NaO₅
M = 156.07 g/mol
CAS-No.: 68303-40-2
HS-No.: 29181998

Storage: RT
LGK: 10 - 13

Danger
H335-H318-H315
P280-P305+P351+P338-P261

**Specification:**

Assay (titr.) min. 98 %
Water (K.F.) max. 2 %

Order-No.	Quantity
A1642,0005	5 g
A1642,0025	25 g
A1642,0100	100 g

Malonic acid for synthesis

C

CH₂(COOH)₂

C₃H₄O₄
M = 104.06 g/mol
CAS-No.: 141-82-2
HS-No.: 29171910
EC-No.: 205-503-0

Melting point 136°C
Solubility (20°C) 735 g/L (H₂O)

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1
Warning
H319-H302
P260-P305+P351+P338-P262

**Specification:**

Assay (titr.) min. 99 %
Identity (IR) complies

Order-No.	Quantity
A3330,0250	250 g
A3330,0500	500 g
A3330,1000	1 kg
A3330,10006	6 x 1 kg

Malt extract Microbiology grade

B

CAS-No.: 8002-48-0
HS-No.: 38210000
EC-No.: 232-310-9

Storage: RT
LGK: 10 - 13

Specification:

E. coli negative/10 g
Loss on drying max. 6 %
Residue on ignition max. 4.5 %
Salmonella negative/25 g

Total aerobic microbial counts max. 10000/g
Yeast and moulds max. 20/g
pH (3 %; H₂O) 4.8 - 5.8

Maltose min. 60 %
Chloride (as NaCl) max. 1 %

Order-No.	Quantity
A3215,0100	100 g
A3215,0250	250 g
A3215,0500	500 g

Malt Extract Agar Microbiology grade
 C

	HS-No.: 38210000	Storage: RT LGK: 10 - 13	WGK: nwg	
Composition:	Specification:		Order-No.	Quantity
Agar 15 g/L	pH before autoclaving . . approx. 5.4 (20°C)		A5789,0500	500 g
Malt extract 30 g/L			A5789,5000	5 kg
Peptones 5 g/L				

♦ **Attention:** Please note that a supplement (A6789) exists for this agar. Please order separately.

Literature: (1) Galloway & Burgess (1952) *Applied Mycology and Bacteriology* 3rd ed.: 54.

Comment:This medium is used for the detection, isolation and enumeration of yeast and moulds.
Direction: Suspend 50 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 115°C for 10 minutes. If it is desired to adjust the reaction to pH 3.5, cool to 55°C and add Lactic acid Solution (A6789) to the agar in the quantity required. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Once acidified with lactic acid, the medium should not be re-heated. Store the prepared medium at 2-8°C.

Maltobiose see D(+)-Maltose monohydrate Page 511

Maltodextrin white pure
 B

	CAS-No.: 9050-36-6 HS-No.: 35051010 EC-No.: 232-940-4	Storage: RT	WGK: 3	
Specification:			Order-No.	Quantity
Appearance white powder	As max. 0.000002 %	Mg max. 0.0002 %	A4804,1000	1 kg
Solubility (5 %; H ₂ O) clear, colorless	Ca max. 0.001 %	Na max. 0.03 %	A4804,5000	5 kg
Sulfated ash max. 0.1 %	Cd max. 0.000001 %	Pb max. 0.000005 %		
pH (40 %; H ₂ O; 20°C) 4.0 - 5.0	Hg max. 0.000001 %			
Water (K.F.) max. 5 %	K max. 0.0005 %			

Maltopentaose BioChemica
 B

	C ₃₀ H ₅₂ O ₂₆ M = 828.72 g/mol CAS-No.: 34620-76-3 HS-No.: 29400000 EC-No.: 252-118-9	Storage: RT	WGK: 3	
Specification:			Order-No.	Quantity
Assay min. 95 %			A7728,0025	25 mg
Water (K.F.) max. 5 %			A7728,0100	100 mg
			A7728,0500	500 mg

D(+)-Maltose monohydrate

	C ₁₂ H ₂₂ O ₁₁ · H ₂ O M = 360.32 g/mol CAS-No.: 6363-53-7 HS-No.: 17029010 EC-No.: 200-716-5	Storage: RT LGK: 10 - 13	WGK: nwg	
Specification:				
Melting range 118 - 122°C				
Solubility (20°C) 1080 g/L (H ₂ O)				

D(+)-Maltose monohydrate BioChemica
 B

Specification:			Order-No.	Quantity
Assay min. 95 %	Glucose (TLC) max. 1 %	A (1 cm/0.1 M in H ₂ O)	A3891,0100	100 g
α20°C/D; 4 %; H ₂ O +135° - +139°	Water (K.F.) max. 6.0 %	260 nm max. 0.1	A3891,0250	250 g
Heavy metals (as Pb) max. 0.0005 %		280 nm max. 0.1	A3891,0500	500 g
Sulfated ash max. 0.1 %			A3891,1000	1 kg
Glucose (TLC) max. 1 %				
Water (K.F.) max. 6.0 %				
pH (20 %; H ₂ O; 25°C) 4.0 - 6.5				
As max. 0.0001 %				

D(+)-Maltose monohydrate pure
 C

Specification:		Order-No.	Quantity
Assay min. 95 %		A3631,0100	100 g
α20°C/D; 4 %; H ₂ O +135° - +139°		A3631,0250	250 g
Heavy metals (as Pb) max. 0.001 %		A3631,0500	500 g
Sulfated ash max. 0.1 %		A3631,1000	1 kg
Glucose (TLC) max. 1 %		A3631,10006	6 x 1 kg
Water (K.F.) max. 6.0 %		A3631,5000	5 kg
As max. 0.0001 %			

Maltotetraose BioChemica

B

Solubility (5 %; H₂O) . . . clear, colorless

C₂₄H₄₂O₂₁
M = 666.58 g/mol
 CAS-No.: 34612-38-9
 HS-No.: 29400000
 EC-No.: 252-111-0

Storage: RT

WGK: 1

Specification:

Assay min. 95 %
 Water (K.F.) max. 5 %

Order-No.	Quantity
A7739,0025	25 mg
A7739,0100	100 mg
A7739,0500	500 mg

Maltotriose BioChemica

B

C₁₈H₃₂O₁₆
M = 504.44 g/mol
 CAS-No.: 1109-28-0
 HS-No.: 29400000
 EC-No.: 214-174-2

Storage: RT

WGK: 3

Specification:

Assay min. 97 %
 α 20°C/D; 3 %; H₂O +164° - +166°
 Water (K.F.) max. 5 %

Order-No.	Quantity
A7782,0001	1 g
A7782,0005	5 g
A7782,0025	25 g

Maltulose monohydrate BioChemica

B

α -D-Glucopyranosyl-D-fructose
 monohydrate

C₁₂H₂₂O₁₁ · H₂O
M = 360.32 g/mol
 CAS-No.: 17606-72-3
 HS-No.: 29389090

Storage: RT

Melting point 120°C

Specification:

Assay min. 99 %
 α 20°C/D; 5 %; H₂O; 1 h +55° ± 2°
 Loss on drying max. 0.6 %

Order-No.	Quantity
A6875,0001	1 g
A6875,0005	5 g

Malvidin chloride HPLC grade

B

from *Malva silvestris*

C₁₇H₁₅ClO₁₇
M = 366.75 g/mol
 CAS-No.: 643-84-5
 HS-No.: 29329900
 EC-No.: 211-403-8

Storage: 2-8°C

Specification:

Assay min. 97 %

Order-No.	Quantity
A8720,0010	10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Malvidin-3,5-diglucoside see Malvin chloride Page 512
 Malvidin-3,5-diglucoside chloride see Malvin chloride Page 512
 Malvidin-3-glucoside see Oenin chloride Page 582
 Malvin see Malvin chloride Page 512

Malvin chloridefrom *Malva paradisi*

C₂₉H₃₅ClO₁₇
M = 691.02 g/mol
 CAS-No.: 16727-30-3
 HS-No.: 29389090

Storage: 2-8°C

Malvinchlorid HPLC grade

B

Malvidin-3,5-diglucoside chloride,
 Malvin

Specification:

Assay min. 97 %

Order-No.	Quantity
A8704,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Malvin chloride pure

B

Malvidin-3,5-diglucoside
Specification:

Assay min. 90 %

Order-No.
A6757,0100

Quantity
100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Manassantin A HPLC grade



B

from Saururus chinensis
 $C_{42}H_{52}O_{11}$
 $M = 732.34$ g/mol
CAS-No.: 88497-87-4
HS-No.: 29321900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.
A8989,0010
A8989,0020

Quantity
10 mg
20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Manassantin B HPLC grade



B

from Saururus chinensis
 $C_{41}H_{48}O_{11}$
 $M = 716.30$ g/mol
CAS-No.: 88497-88-5
HS-No.: 29321900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.
A9007,0010
A9007,0020

Quantity
10 mg
20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

D-Mandelate dehydrogenase, bacterial Technical grade

B

[E.C. 1.1.1.-]
supplied liquid in 50 % glycerol
of bacterial origin

 $M = \sim 60$ kDa
HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

Specification:

Activity min. 8000 U/ml

Order-No.
A7834,0001
A7834,0010
A7834,1000

Quantity
1 KU
10 KU
1 MU

Comment: The bacterial D-Mandelate dehydrogenase metabolizes aliphatic and aromatic α -keto acid substrates.

Unit definition: One unit is the amount of enzyme required to metabolize 1 μ mol substrate per minute in 100 mM potassium phosphate buffer, pH 7.0 at 30°C. This technical enzyme grade is intended for use in chemical synthesis.

Manganese(II) acetate tetrahydrate pure

C

Solubility (20°C) 330 g/L (H₂O)

 $C_4H_6MnO_4 \cdot 4H_2O$
 $M = 245.09$ g/mol
CAS-No.: 6156-78-1
HS-No.: 29152900
EC-No.: 211-334-3

Storage: RT

P280-P305+P351+P338-P262

Specification:

Assay (titr.) min. 99 %
Chloride max. 0.002 %
Sulfate max. 0.005 %
Ca max. 0.01 %
Fe max. 0.001 %
Pb max. 0.005 %
Zn max. 0.005 %

Order-No.
A2606,0100
A2606,0500
A2606,1000
A2606,10006
A2606,5000
A2606,9010

Quantity
100 g
500 g
1 kg
6 x 1 kg
5 kg
10 kg

Manganese(II) acetate - Solution (25 mM) Molecular biology grade

B

suitable for PCR

HS-No.: 38220000

Storage: RT

Composition:

Manganese(II) acetate 6.127 g/L

Specification:

DNases/RNases/Proteases
..... not detectable

Order-No.
A5127,0001
A5127,0005

Quantity
1 ml
5 ml

Manganese(II) chloride tetrahydrate

 $MnCl_2 \cdot 4H_2O$
 $Cl_2Mn \cdot 4H_2O$

Storage: RT

Class / PG: 9/III

Melting point 58°C

 $M = 197.91 \text{ g/mol}$

LGK: 10 - 13

UN3077

Solubility (20°C) 1980 g/L (H_2O)

CAS-No.: 13446-34-9

Disposal: 15

WGK: 1

HS-No.: 28273985

hygroscopic

EC-No.: 231-869-6

Warning

H302-H411

P260-P273-P280



Manganese(II) chloride tetrahydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H_2O) 3.5 - 6.0 (20°C)
Sulfate max. 0.002 %

A (1 cm/0.5 M in H_2O)
260 nm max. 0.01
280 nm max. 0.01

Order-No.	Quantity
A2087,0100	100 g
A2087,0500	500 g
A2087,1000	1 kg

Literature: (1) Deng, G.-R. & Wu, R. (1983) *Methods Enzymol.* **100**, 96-101
(2) Bauer, P. et al. (1997) *Biotechniques* **22**, 1128-1132

Terminal transferase: "Tailing" of DNA and *in vitro* mutagenesis.
Manganese in RT-PCR reduces PCR artifacts of the DNase I digest.

Manganese(II) chloride tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
Red. substances max. 0.0005 %
pH (5 %; H_2O) 3.5 - 6.0 (20°C)
Sulfate max. 0.005 %
Ca max. 0.001 %

Cu max. 0.0005 %
Fe max. 0.0005 %
K max. 0.001 %
Mg max. 0.005 %
Na max. 0.005 %

Ni max. 0.0005 %
Pb max. 0.0005 %
Zn max. 0.001 %

Order-No.	Quantity
A7326,0500	500 g
A7326,1000	1 kg
A7326,10006	6 x 1 kg

Manganese(II) chloride - Solution for determination of oxygen in water

C

acc. to Winkler DEV G 2

HS-No.: 38220000

Storage: RT

Class / PG: 9/III

UN3082

WGK: 1

H411

P280-P273



Composition:

 $MnCl_2 \cdot 4H_2O$ 2 M

Order-No.	Quantity
A4674,0100	100 ml
A4674,0250	250 ml
A4674,1000	1 L

Manganese(II) chloride - Solution (25 mM) Molecular biology grade

B

suitable for PCR

HS-No.: 38220000

Storage: RT

Composition:

 $MnCl_2 \cdot 4H_2O$ 4.95 g/L

Specification:

DNases/RNases/Proteases
..... not detectable
Concentration 25 mM

Order-No.	Quantity
A5457,0001	1 ml
A5457,0005	5 ml

Manganese(II) sulfate monohydrate

 $MnSO_4 \cdot H_2O$
 $MnO_4S \cdot H_2O$

Storage: RT

Class / PG: 9/III

Melting point 117°C (dec.)

 $M = 169.02 \text{ g/mol}$

LGK: 10 - 13

UN3077

Solubility (20°C) 762 g/L (H_2O)

CAS-No.: 10034-96-5

Disposal: 15

WGK: 1

HS-No.: 28332980

Warning

EC-No.: 232-089-9

H411-H373

P314-P273



Manganese(II) sulfate monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Chloride max. 0.005 %

Order-No.	Quantity
A3892,0250	250 g
A3892,0500	500 g
A3892,1000	1 kg

Manganese(II) sulfate monohydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
Chloride max. 0.005 %
As max. 0.0001 %
Ca max. 0.005 %
Cu max. 0.0005 %

Fe max. 0.001 %
Mg max. 0.005 %
Na max. 0.005 %
Pb max. 0.002 %
Zn max. 0.005 %

Order-No.	Quantity
A1038,0250	250 g
A1038,0500	500 g
A1038,1000	1 kg
A1038,10006	6 x 1 kg

Manganese(II) sulfate monohydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.0 - 102.0 %
 Assay (titr., calc. on calcined subst.)
 99.0 - 101.0 %
 (NH₄)₂S non precip. subst. max. 0.5 %
 Appearance of solution complies

Heavy metals (as Pb) ... max. 0.002 %
 Identity complies
 Loss on ignition (500°C) . 10.0 - 12.0 %
 Organic vol. impurities . complies
 Chloride max. 0.01 %

Fe max. 0.001 %
 Zn max. 0.005 %

Order-No.	Quantity
A1369,0500	500 g
A1369,1000	1 kg
A1369,10006	6 x 1 kg
A1369,5000	5 kg

Manganese(II) sulfate - Solution acc. to Reinhardt-Zimmermann

C

HS-No.: 38220000

Storage: RT

Class / PG: 8/II

UN3264

Danger

H314

P280-P305+P351+P338-P313



Composition:

Manganese(II) sulfate 67 g/L
 Phosphoric acid 85 % 333 ml/L
 Sulfuric acid 96 % 133 ml/L

Order-No.	Quantity
A4663,0100	100 ml
A4663,1000	1 L

D-Mannite see D(-)-Mannitol Page 515

D(-)-Mannitol

D-Mannite, (2R,3R,4R,5R)-Hexane-1,2,3,4,5,6-hexol

C₆H₁₄O₆
 M = 182.17 g/mol
 CAS-No.: 69-65-8
 HS-No.: 29054300
 EC-No.: 200-711-8

Storage: RT
 LGK: 10 - 13

Melting range 164 - 169°C
 Solubility (18°C) 156 g/L (H₂O)

D(-)-Mannitol BioChemica

B

Specification:

Assay min. 99 %
 α20°C/D; 8 %, borate compl.
 +23° - +25°
 Heavy metals (as Pb) max. 0.0005 %
 Insoluble matter complies

Loss on drying max. 0.1 %
 Chloride max. 0.005 %
 Sulfate max. 0.01 %

A (1 cm/1 M in H₂O)
 260 nm max. 0.05
 280 nm max. 0.05

Order-No.	Quantity
A1903,0250	250 g
A1903,0500	500 g
A1903,1000	1 kg

Literature: (1) Lin, Y. & Jamieson, D. (1992) *Pharmacol. Toxicol.* **70**, 271-277
 (2) Desesso, J.M. et al. (1994) *Teratology* **49**, 248-259

Effects of antioxidants on oxygen toxicity *in vivo* and lipid peroxidation *in vitro*.
 D-Mannitol, a specific hydroxyl free radical scavenger, reduced the developmental toxicity of hydroxyurea in rabbits.

Comment: Besides its physiological function of a 'plain' sugar, Mannitol can function as an antioxidant, which is able to scavenge OH-radicals (e. g. ref. 1).

D(-)-Mannitol p. A.

C

Specification:

Assay min. 98 %
 α20°C/D; 8 %, borate compl.
 +23° - +25°
 Insoluble matter complies
 Loss on drying max. 0.1 %

Related subst. max. 2 %
 Chloride max. 0.005 %
 Sulfate max. 0.01 %
 As max. 0.0001 %
 Fe max. 0.0001 %

Ni max. 0.0001 %
 Pb max. 0.00005 %

Order-No.	Quantity
A5292,0250	250 g
A5292,0500	500 g
A5292,1000	1 kg
A5292,10006	6 x 1 kg

D(-)-Mannitol pure low endotoxin, Ph. Eur., BP, USP, JP

C

Specification:

Assay (HPLC, calc. on dried subst.)
 98.0 - 101.5 %
 α20°C/D; 8 %, borate compl.
 +23° - +25°
 α25°C/D; 1 %, molybdate compl.
 +137° - +145°
 E. coli in 1 g subst. not detectable
 Pseudomonas aeruginosa ... in 1 g subst. not detectable
 Salmonella species in 10 g subst. not detectable
 Staphylococcus aureus in 1 g subst. not detectable
 Acidic/alkaline react. subst. complies
 Appearance white powder
 Appearance of solution complies (20 %, H₂O)

H₂O)
 Colony count (aerobic bact.)
 max. 200 CFU/g
 Colony count (yeasts & moulds)
 max. 100 CFU/g
 Conductivity (25°C; 20 % in H₂O)
 max. 20 µS/cm
 Endotoxins max. 1 I.U./g
 Heavy metals (as Pb) ... max. 0.0005 %
 Identity (IR) complies
 Loss on drying max. 0.3 %
 Melting range (beginning)
 ≥ 164°C
 Melting range (end) 165.5 - 169.0°C
 Microbiological test complies
 Red. sugars (as Glc) ... max. 0.05 %

Related subst. (HPLC)
 max. 2.0 % (Sorbitol)
 Residues of solvents
 excluded by manufacturing process
 Sulfated ash ... max. 0.1 %
 Sum of rel. subst.
 max. 2.0 %
 Loss on drying . max. 0.5 %
 Chloride max. 0.005 %
 Sulfate max. 0.01 %
 As max. 0.0001 %
 Ni max. 0.0001 %
 Pb max. 0.00005 %

Order-No.	Quantity
A4831,1000	1 kg
A4831,10006	6 x 1 kg
A4831,5000	5 kg
A4831,9010	10 kg

Red. sugars after hydrolysis/total sugars (as Glucose) max. 0.4 %
 Related subst. (HPLC; unknown impurities, single) max. 0.1 %

D(-)-Mannitol pure Ph. Eur., USP

C

Specification:

Assay (titr., calc. on anhydrous subst.)
 α 25°C/D; 1 %, molybdate compl.
 +137° - +145°
 Acidity complies
 Appearance of solution complies
 Conductivity (25°C; 20 %; H₂O)
 max. 20 μ S/cm
 Identity (IR) complies

Loss on drying max. 0.3 %
 Red. sugars complies
 Related subst. complies
 Water (K.F.) max. 0.5 %
 Chloride max. 0.007 %
 Sulfate max. 0.01 %
 As max. 0.0001 %
 Ni max. 0.0001 %
 Pb max. 0.00005 %

Order-No.	Quantity
A2773,0250	250 g
A2773,0500	500 g
A2773,1000	1 kg
A2773,10006	6 x 1 kg
A2773,5000	5 kg
A2773,9010	10 kg
A2773,9025	25 kg

L-Mannopyranose see L(-)-Mannose *BioChemica* Page 516

 α -D-Mannopyranosyl-1-phosphate see α -D-Mannose-1-phosphate dipotassium salt dihydrate Page 516

D(+)-Mannose *BioChemica*

B

Melting point 133°C

C₆H₁₂O₆
 $M = 180.16$ g/mol
 CAS-No.: 3458-28-4
 HS-No.: 29400000
 EC-No.: 222-392-4

Storage: RT
 LGK: 10 - 13

Specification:

Assay min. 98 %
 α 20°C/D; 10 %, H₂O +13.5° - +14.9°
 Heavy metals max. 0.001 %
 Loss on drying max. 0.5 %

Order-No.	Quantity
A2187,0025	25 g
A2187,0050	50 g
A2187,0100	100 g
A2187,0250	250 g

L(-)-Mannose *BioChemica*

B

L-Mannopyranose

C₆H₁₂O₆
 $M = 180.16$ g/mol
 CAS-No.: 10030-80-5
 HS-No.: 29400000
 EC-No.: 233-080-2

Storage: RT

Specification:

Assay min. 99 %
 α 20°C/D; 4 %, H₂O; 24 h -14.3° $\pm$ 0.2°

Order-No.	Quantity
A6876,0250	250 mg
A6876,0500	500 mg
A6876,0001	1 g

α -D-Mannose-1-phosphate dipotassium salt dihydrate

B

α -D-Mannopyranosyl-1-phosphate
 synthetic

C₆H₁₁K₂O₉P · 2H₂O
 $M = 372.36$ g/mol
 CAS-No.: 71888-67-0
 HS-No.: 29400000

Storage: 2-8°C

Melting range 180 - 197°C

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, H₂O +35.5° - +37.5°
 Ba-, Li-, Na-, CHA salts max. 0.01 %
 Solubility (1 %; H₂O; 21°C) clear, colorless

free phosphate max. 0.1 %

Order-No.	Quantity
A6825,0100	100 mg
A6825,0500	500 mg
A6825,0001	1 g

Mantuamycin see Leptomycin B *BioChemica* Page 486

Marble granular for producing CO₂

C

CaCO₃, Calcium carbonate

CCaO₃
 $M = 100.09$ g/mol
 CAS-No.: 471-34-1
 HS-No.: 25174100
 EC-No.: 207-439-9

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: nwg

Particle size 150 - 300 μ m

Specification:

Identity complies

Order-No.	Quantity
A6297,1000	1 kg
A6297,10006	6 x 1 kg
A6297,5000	5 kg

Matrix effect reduction see Immunoassay Buffer Page 446

maxXbond™

HS-No.: 38220000

Storage: RT

maxXbond™

B

Regeneration Kit for DNA Binding
Columns

◆ suited for pure silica matrices: 100 % - no DNA detectable

- quick & easy: 30 minutes only!
- bio-degradable and non-toxic
- no damage to silica matrix
- just like new: full binding capacity after the regeneration
- ◆ savings of up to 70 % when isolating nucleic acids

Order-No.	Quantity
MB007,0100	1 Kit
MB007,0200	1 Kit
MB007,1000	1 Kit

* Attention: New formulation of regeneration solution 1!

Comment:MaxXbond™ is the first regeneration system for silica matrices for the isolation and purification of nucleic acid. The silica columns used today are high tech products of high value. The fact that not all nucleic acids are eluted from the silica matrix after the first usage is the reason that these valuable columns are not recycled. Usually, about 5 to 10 % of the isolated nucleic acids remain trapped in the silica matrix. This residual DNA contains both free molecules and molecules complexed with protein particles or bacterial fragments. Therefore, even when reusing the columns for the preparation of the identical plasmid, DNA binding capacity is reduced. Further, the used columns that are contaminated by recombinant DNA molecules and bacteria should be autoclaved to guarantee environmentally friendly disposal. As a result, laboratories that use DNA binding columns for the isolation and purification of nucleic acids not only dispose of a high-value item, but they must also deal with the costs of excessive biohazardous waste. Here we present the innovative maxXbond™ regeneration system for use with nucleic acid binding columns. Both agarose gel electrophoresis and PCR analysis demonstrate that the regenerated columns are 100 % nucleic acid-free. We project that usage of regenerated columns could lead to a cost reduction of up to 70 % for the isolation and purification of nucleic acids. For more informations please see www.maxxbond.de. The volumes required to regenerate the different types of columns varies:

Column Size	maxXbond™ RG1	maxXbond™ RG2
Mini	750 µl	750 µl
Midi	4 ml	4 ml

maxXbond™ is a registered trademark of AppliChem GmbH.

maxXbond™ AX

B

◆ suited for silica-based anion exchanger matrices: 100 % - no DNA detectable

- quick & easy: approx. 60-90 minutes only!
- bio-degradable and non-toxic
- no damage to the matrix
- just like new: full binding capacity after the regeneration
- ◆ savings of up to 70 % when isolating nucleic acids

Order-No.	Quantity
MB1AX,0100	1 Kit
MB1AX,0250	1 Kit
MB1AX,1000	1 Kit

* maxXbond™ is a registered trademark of AppliChem GmbH.

Comment:Today the rapid isolation of pure DNA samples is supported by a large number of commercial kits. These kits contain high affinity DNA-binding materials and all reagents for binding, purification and elution. The two major DNA-binding materials integrated into these products are pure silica-matrices or silica-based anion-exchange resins. The very different physical characteristics of these two DNA-binding materials require different buffer systems and protocols for purification. maxXbond™ AX is the optimized regeneration kit for the multiple usage of silica-based anion exchange resins. The kit is based on the two regeneration buffers RG1-AX and RG2-AX and fulfills all requirements that have already been defined for maxXbond. For more informations please see www.maxxbond.de. The volumes required to regenerate the different types of columns varies:

Column Size	maxXbond™ RG1-AX	maxXbond™ RG2-AX
Mini	1.5 ml	1.5 ml
Midi	8 ml	8 ml
Maxi	20 ml	20 ml
Mega	70 ml	70 ml
Giga	150 ml	150 ml



AppliChem.

Wherever you need us !

maxXmore™

HS-No.: 38220000

Storage: RT

The introduction of **maxXbond** for the regeneration of DNA binding matrices leads to an increased demand of refill buffer sets for the isolation of DNA with silica columns or silica-based ion exchange membranes. Matrices of several suppliers have been regenerated up to 20 times with **maxXbond** - without any loss of the binding capacity. AppliChem now offers for both systems the optimized buffer solutions **maxXmore** - *ready-to-use* to be stored at room temperature.

maxXmore™ Mini

B

Refill Buffer Set for DNA Isolation Spin Kits

- Universal set of buffers for **silica-based** DNA binding columns
- all buffers can be stored at ambient temperature
- New formulation: Does not require addition of ethanol to wash buffer S5!
- ◆ **use in combination with maxxbond™**
- ◆ sufficient for at least 100, 250 and 1250 isolations, respectively

Order-No.	Quantity
MB008,0100MINI	1 Kit
MB008,0250MINI	1 Kit
MB008,1250MINI	1 Kit

* maxXmore™ is a registered trademark of AppliChem GmbH.

Comment: This is AppliChem's 5* Star buffer set (S1 - S5): An universal set of buffers for all DNA binding columns based on silica matrices for the recovery of DNA. All buffers are *ready-to-use* and can be stored at room temperature. The new formulation requires no addition of ethanol to wash buffer S5. Use of this buffer set is highly recommended, when columns have been regenerated with maxxbond™ (MB007) for multiple reuse.

Principle of the DNA isolation with silica matrices: DNA adsorbs to silica surfaces in the presence of high concentrations of salts. After modified alkaline lysis, the supernatant containing the plasmid DNA is loaded onto a spin column. Plasmid DNA is adsorbed on the surface of the silica filter, while contaminants pass through without being adsorbed. After washing, pure DNA is eluted in a low salt buffer (TE, Tris buffer) or water.

maxXmore™ AX Midi

B

- Universal set of buffers for **silica-based anion exchange**-based DNA binding columns
- all buffers can be stored at ambient temperature
- New formulation: All solutions *ready-to-use*! No additions required!
- ◆ **use in combination with maxxbond™ AX**
- ◆ sufficient for 25 and 50 isolations, respectively

Order-No.	Quantity
MB009,0025MIDI	1 Kit
MB009,0050MIDI	1 Kit

* maxXmore™ is a registered trademark of AppliChem GmbH.

Comment: The "midi" sized plasmid isolation kits are usually based on silica-based anion-exchange membranes, as well as the "maxi", "mega", and "giga" sized kits. This type of DNA-binding matrix requires a buffer system, differing from the one applied for silica columns. Therefore, AppliChem's 6* star buffer set is optimized for ion exchange DNA isolation systems. All buffers are *ready-to-use* and can be stored at room temperature. The new formulation doesn't require any additions. Use of this buffer set is highly recommended, when columns have been regenerated with maxxbond™ AX (MB1AX) for multiple reuse.

maxXmore™ AX Maxi

B

- Universal set of buffers for **silica-based anion exchange**-based DNA binding columns
- all buffers can be stored at ambient temperature
- New formulation: All solutions *ready-to-use*! No additions required!
- ◆ **use in combination with maxxbond™ AX**
- ◆ sufficient for 15 isolations

Order-No.	Quantity
MB010,0015MAXI	1 Kit

* maxXmore™ is a registered trademark of AppliChem GmbH.

maxXmore™ AX Mega

B

- Universal set of buffers for **silica-based anion exchange**-based DNA binding columns
- all buffers can be stored at ambient temperature
- New formulation: All solutions *ready-to-use*! No additions required!
- ◆ **use in combination with maxxbond™ AX**
- ◆ sufficient for 10 isolations

Order-No.	Quantity
MB011,0010MEGA	1 Kit

* maxXmore™ is a registered trademark of AppliChem GmbH.

maxXmore™ AX Giga

B

- Universal set of buffers for **silica-based anion exchange**-based DNA binding columns
- all buffers can be stored at ambient temperature
- New formulation: All solutions *ready-to-use!* No additions required!
- ◆ **use in combination with maxXbond™ AX**
- ◆ sufficient for 8 isolations

Order-No. Quantity
MB012,0008GIGA 1 Kit

* maxXmore™ is a registered trademark of AppliChem GmbH.

May-Gruenwald - Eosin - Methylene blue

C

HS-No.: 32041900

Storage: RT
LGK: 10 - 13

WGK: 3*
Warning
H302-H319
P305+P351+P338-P260


Specification:

λ_1 (MeOH) 648 - 653 nm
 λ_2 (MeOH) 520 - 525 nm
E 0.0005 %/1 cm, λ_1 1100 - 1350
E 0.0005 %/1 cm, λ_2 600 - 800

Identity complies
Loss on drying max. 10 %

Order-No. Quantity
A2968,0010 10 g
A2968,0025 25 g
A2968,0100 100 g

May-Gruenwald - Solution Microscopy grade

C

*Eosin-Methylene blue - Solution acc. to
May-Grünwald*

HS-No.: 32041900

Storage: RT
LGK: 3 A

Class / PG: 3(6.1)/II
UN1230
WGK: 1
Danger
H370-H331-H301-H311-H225
P280-P210-P302+P352



for preparation of the blood elements; in
combination with Giemsa - Solution
(A0885) for panoptical staining by
Pappenheim

Boiling point 65°C

Order-No. Quantity
A0415,0500 500 ml
A0415,1000 1 L
A0415,10006 6 x 1 L
A0415,2500 2.5 L
A0415,25004 4 x 2.5 L

Mayer's Hemalaun - Solution Microscopy grade

C

for Cytodiagnostic

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: nwg
Warning
H302
P330-P264-P301+P312



Order-No. Quantity
A0884,0100 100 ml
A0884,0500 500 ml
A0884,1000 1 L
A0884,10006 6 x 1 L
A0884,2500 2.5 L
A0884,25004 4 x 2.5 L

Mayer's Hematoxylin - Solution

C

HS-No.: 38220000

Storage: RT

Warning
H302
P330-P264-P301+P312



Specification:

Density (d 20°C/4°C) 1.042 - 1.046

Order-No. Quantity
A4840,0500 500 ml
A4840,1000 1 L
A4840,10006 6 x 1 L

MBS

B

m-Maleimidobenzoyl-*N*-hydroxysuccinimide ester

$C_{15}H_{10}N_2O_6$
 $M = 314.30$ g/mol
CAS-No.: 58626-38-3
HS-No.: 29280090

Storage: -20°C

Melting point 175 - 177°C

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.	Quantity
A7833,0050	50 mg
A7833,0100	100 mg
A7833,0250	250 mg

Comment: MBS is a non-cleavable, water-insoluble, aromatic heterobifunctional reagent. It reacts toward sulfhydryl and primary amine groups. The NHS ester reacts with primary amines at pH 7 - 9, while maleimide reacts with thiols at pH 6.5 - 7.5. The aryl maleimide is less stable than alkyl maleimide linkers.

McCoy's 5A - Medium (modified)

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

McCoy's 5A - Medium (modified)

B

without L-Glutamine
without Serum
without Sodium hydrogen carbonate

Order-No.	Quantity
A2034,1000	1 L
A2034,5000	5 L
A2034,9010	10 L
A2034,9050	50 L

McCoy's 5A - Medium (modified)

B

with L-Glutamine
without Serum
without Sodium hydrogen carbonate

Order-No.	Quantity
A1324,1000	1 L
A1324,5000	5 L
A1324,9010	10 L
A1324,9050	50 L

McCoy's 5A - Medium (modified)

B

without L-Glutamine
with 25 mM HEPES
without Serum
without Sodium hydrogen carbonate

Order-No.	Quantity
A2035,1000	1 L
A2035,5000	5 L
A2035,9010	10 L
A2035,9050	50 L

McCoy's 5A - Medium (modified)

B

with L-Glutamine
with 25 mM HEPES
without Serum
without Sodium hydrogen carbonate

Order-No.	Quantity
A1955,1000	1 L
A1955,5000	5 L
A1955,9010	10 L
A1955,9050	50 L

MCP see *m*-Cresol purple Page 246

rHu MCP-1



B

recombinant Human Monocyte Chemotactic Protein
lyophilized without additives
from *E. coli*

$M = 13.8$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8196,0005	5 µg
A8196,0020	20 µg
A8196,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
Recombinant Mouse MCP-1 is a single, non-glycosylated, polypeptide chain containing 125 amino acids.

rHu MCP-2



B

recombinant Human Monocyte
Chemotactic Protein 2, CCL 8
lyophilized without additives
from *E. coli*

M = 8.90 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8236,0002	2 µg
A8236,0010	10 µg
A8236,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
Recombinant Human MCP-2 is a non-glycosylated, Polypeptide chain containing 76 amino acids.

rHu MCP-3



B

CCL7, recombinant Human Monocyte
Chemotactic Protein 3
lyophilized without additives
from *E. coli*

M = 9.01 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8261,0100	100 µg
A8261,0010	10 µg
A8261,0002	2 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
Recombinant Human MCP-3 produced is a non-glycosylated, polypeptide chain containing 76 amino acids.

rM MCP-3



B

CCL7, recombinant Mouse Monocyte
Chemotactic Protein-3
lyophilized without additives
from *E. coli*

M = 8.51 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin (LAL test) max. 0.1 EU/µg
Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8347,0002	2 µg
A8347,0010	10 µg
A8347,0100	100 µg

Comment: Recombinant Mouse Monocyte Chemotactic Protein-3 (rM MCP-3), also known as CCL7 and SCYA7 is produced in a variety of tumor cells and has been shown to induce chemotaxis in monocytes, basophils, NK cells and dendrocytes. Recombinant Mouse MCP-3 is produced in *E. coli*, and is a non-glycosylated, polypeptide chain that contains 74 amino acids and has a molecular mass of 8.51 kDa.

rHu MCP-4



B

CCL13, recombinant Human Monocyte
Chemotactic Protein 4
lyophilized without additives
from *E. coli*

M = 8.51 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8332,0005	5 µg
A8332,0020	20 µg
A8332,0100	100 µg

Comment: Recombinant Human MCP-4 produced in *E. coli* is a non-glycosylated, polypeptide chain containing 74 amino acids and having a molecular mass of 8.51 kDa.

rHu M-CSF bioconfident grade



B

recombinant Human Macrophage
Colony Stimulating Factor
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 20.7 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8836,0010	10 µg
A8836,0050	50 µg
A8836,0100	100 µg
A8836,1000	1 mg

Comment: Recombinant human M-CSF contains 159 amino acids and a 16 amino acid Histidine-based tag for a total length of 175 amino acids and has a predicted molecular mass of 20.7 kDa. The recombinant protein migrates with an apparent molecular mass of 21 kDa in SDS-PAGE.

rHu M-CSF



B

recombinant Human Macrophage
Colony-Stimulating Factor, CSF-1
lyophilized without additives
from *E. coli*

M = 36.8 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8238,0002	2 µg
A8238,0010	10 µg
A8238,0100	100 µg

Comment: Macrophage colony-stimulating factor (M-CSF) is one of the glycoproteins called colony-stimulating factors (CSFs). A mononuclear phagocyte colony-stimulating factor (M-CSF) synthesized by mesenchymal cells. The compound stimulates the survival, proliferation, and differentiation of hematopoietic cells of the monocyte-macrophage series. Some clinical investigations have shown autologous production of M-CSF various human cell lines in vitro and by tumors in vivo. Recombinant Human M-CSF produced in *E. coli* is a disulfide linked homodimer, non-glycosylated, polypeptide chain containing 2 x 159 amino acids and having a total molecular mass of 36.8 kDa.

rM M-CSF



B

recombinant Mouse Macrophage
Colony-Stimulating Factor, CSF-1
lyophilized from 0.5X PBS, pH 8.0
from *E. coli*

M = 36.8 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8317,0002	2 µg
A8317,0010	10 µg
A8317,0100	100 µg

Comment: M-CSF is produced by a wide variety of cells including fibroblasts, monocytes, lymphocytes, osteoblasts, and mesenchymal cells to name a few. It stimulates the proliferation and differentiation of hematopoietic cells and plays an important role in the life of blood monocytes. Comprised of two 159 amino acid chains, this disulfide-linked homodimer has a molecular weight of 36.8 kDa.

MDL 28170 see Calpain Inhibitor III Page 183

AC-Media hi



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Cell Culture complies
Cell Line as reported
Osmolality 310 - 342 mOsm/kg
Sterility complies
pH 6.8 - 7.4

Order-No.	Quantity
A8301,0100	100 ml
A8301,0500	500 ml

Comment: AC-Media hi is a high protein formulation, serum-free, BSA containing medium. The product is *ready-to-use* and needs only the addition of L-glutamine. It is intended for use in applications, such as the culture of myeloma and hybridoma cells, monoclonal antibody production and the culture of human lymphocyte cells (including stimulated or transformed cells). Related products are AC-Media mid (A8307) with a mid-level protein content and AC-Media lo (A8322), a BSA-free formulation.

AC-Media mid



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Cell Culture complies
Osmolality 300 - 328 mOsm/kg
Sterility complies
pH 7.1 - 7.5

Order-No.	Quantity
A8307,0100	100 ml
A8307,0500	500 ml

Comment: AC-Media mid is a mid-level protein formulation, serum-free, BSA containing medium. The product is *ready-to-use* and needs only the addition of L-glutamine. It is intended for use in applications, such as the culture of myeloma and hybridoma cells, monoclonal antibody production and the culture of human lymphocyte cells (including stimulated or transformed cells), and viral production. Related products are AC-Media hi (A8301) with a high protein content and AC-Media lo (A8322), a BSA-free formulation.

AC-Media lo



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Cell Culture complies
Osmolality 290 - 333 mOsm/kg
Sterility complies
pH 7.2 - 7.5

Order-No.	Quantity
A8322,0100	100 ml
A8322,0500	500 ml

Comment: AC-Media lo is a bovine serum albumin-free formulation. The protein content is less than 18 µg/ml. Despite this very low protein content, AC-Media lo has proven to be remarkably effective for the growth of a wide variety of hybridomas and other lymphocytes. L-Glutamine must be added prior to use. Related products are the BSA-containing media AC-Media hi (A8301) with a high protein content and AC-Media mid (A8307), a mid-level protein containing formulation.

Medium 199 with Earle's Salts

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Medium 199 with Earle's Salts			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A2022,1000	1 L	
	A2022,5000N	5 L	
	A2022,9010	10 L	
	A2022,9050	50 L	

Medium 199 with Earle's Salts			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1325,1000	1 L	
	A1325,5000	5 L	
	A1325,9010	10 L	
	A1325,9050	50 L	

Medium 199 with Earle's Salts			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2030,1000	1 L	
without Sodium hydrogen carbonate	A2030,5000	5 L	
	A2030,9010	10 L	
	A2030,9050	50 L	

Medium 199 with Earle's Salts			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1326,1000	1 L	
without Sodium hydrogen carbonate	A1326,5000	5 L	
	A1326,9010	10 L	
	A1326,9050	50 L	

Medium 199 with Hanks' Salts

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Medium 199 with Hanks' Salts			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A2031,1000	1 L	
	A2031,5000	5 L	
	A2031,9010	10 L	
	A2031,9050	50 L	

Medium 199 with Hanks' Salts			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1327,1000	1 L	
	A1327,5000	5 L	
	A1327,9010	10 L	
	A1327,9050	50 L	

Medium 199 with Hanks' Salts			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2021,1000	1 L	
without Sodium hydrogen carbonate	A2021,5000	5 L	
	A2021,9010	10 L	
	A2021,9050	50 L	

Medium 199 with Hanks' Salts			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1328,1000	1 L	
without Sodium hydrogen carbonate	A1328,5000	5 L	
	A1328,9010	10 L	
	A1328,9050	50 L	

MEGA-8

B

OMEGA, Octanoyl-N-methylglucamide	$C_{15}H_{31}NO_6$ $M = 321.42$ g/mol CAS-No.: 85316-98-9 HS-No.: 29241900	Storage: 2-8°C LGK: 10 - 13
CMC (H ₂ O) 79 mM		
Melting point 88 - 89°C		

Specification:

Assay min. 99 %	A (1 cm/1 %, water HPLC grade)
α 20°C/D; 2 %, H ₂ O -16.5° - -18.5°	260 nm max. 0.01
Solubility (2 %, H ₂ O; 20°C) clear, colorless	
pH (1 %; H ₂ O) 5.5 - 6.5	

Order-No.	Quantity
A1386,0001	1 g
A1386,0005	5 g

Literature: (1) Hildreth, J.E.K. (1982) *Biochem. J.* **207**, 363-366

N-D-Gluco-*N*-methylalkanamide compounds, a new class of non-ionic detergents for membrane biochemistry.

MEGA-9

B

<i>N</i>-(D-Glucityl)-<i>N</i>-methylnonanamide, <i>N</i>-Nonanoyl-<i>N</i>-methylglucamide	$C_{16}H_{33}NO_6$ $M = 335.44$ g/mol CAS-No.: 85261-19-4 HS-No.: 29241900	Storage: 2-8°C LGK: 10 - 13
CMC (H ₂ O) 25 mM		
Melting point 89 - 90°C		

Specification:

Assay min. 99 %	A (1 cm/1 %, water HPLC grade)
α 20°C/D; 2 %, H ₂ O -16.0° - -17.0°	260 nm max. 0.02
Solubility (2 %, H ₂ O; 21°C) clear, colorless	
pH (1 %; H ₂ O) 6.0 - 7.5	

Order-No.	Quantity
A3893,0001	1 g
A3893,0005	5 g

Literature: (1) Hildreth, J.E.K. (1982) *Biochem. J.* **207**, 363-366

N-D-Gluco-*N*-methylalkanamide compounds, a new class of non-ionic detergents for membrane biochemistry.
Solution and reconstitution of *E. coli* membrane proteins with alkanoyl-*N*-methylglucamides.

(2) Hanatani, M. *et al.* (1984) *J. Biochem.* **95**, 1349-1353

MEGA-10

B

<i>N</i>-Decanoyl-<i>N</i>-methylglucamine	$C_{17}H_{35}NO_6$ $M = 349.42$ g/mol CAS-No.: 85261-20-7 HS-No.: 29241900	Storage: 2-8°C
CMC (H ₂ O) 6-7 mM		
Melting point 91 - 93°C		

Specification:

Assay (HPLC) min. 99 %	pH (1 %; H ₂ O) 6.0 - 7.0
α 20°C/D; 2 %, H ₂ O -15.5° - -16.5°C	
Solubility (1 %; H ₂ O; 21°C) clear, colorless	

Order-No.	Quantity
A4761,0001	1 g
A4761,0005	5 g

MEK see Methyl ethyl ketone Page 538
Meletin see Quercetin HPLC grade Page 680

D(+)-Melezitose monohydrate BioChemica

B

<i>O</i>-α-D-Glucopyranosyl-(1$\rightarrow$3)-β-D-fructofuranosyl-α-D-glucopyranoside	$C_{18}H_{32}O_{16} \cdot H_2O$ $M = 522.45$ g/mol CAS-No.: 10030-67-8 HS-No.: 29400000 EC-No.: 209-894-9	Storage: RT	WGK: 3
Solubility (5 %; H ₂ O) clear, colorless			

Specification:

Assay min. 99 %
α 20°C/D; 4 %, H ₂ O +86° - +90°
Sulfated ash max. 0.5 %

Order-No.	Quantity
A7721,0010	10 g
A7721,0025	25 g
A7721,0100	100 g

D(+)-Melibiose monohydrate BioChemica

B

6-<i>O</i>-α-D-Galactopyranosyl-D-glucose	$C_{12}H_{22}O_{11} \cdot H_2O$ $M = 360.32$ g/mol CAS-No.: 66009-10-7 HS-No.: 29400000 EC-No.: 209-568-6	Storage: RT	WGK: 3
Melting point 176 - 181°C			
Solubility (10 %; H ₂ O) clear, colorless			

Specification:

Assay min. 99 %
α 20°C/D; 5 %, H ₂ O; 10 h +134° - +140°
Heavy metals max. 0.001 %
Fe max. 0.0005 %

Order-No.	Quantity
A7715,0005	5 g
A7715,0010	10 g
A7715,0025	25 g
A7715,0050	50 g

Melitose see D(+)-Raffinose pentahydrate BioChemica Page 681
Melitriose see D(+)-Raffinose pentahydrate BioChemica Page 681

α-MEM

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

α-MEM

without L-Glutamine
without Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1971,1000	1 L
A1971,5000	5 L
A1971,9010	10 L
A1971,9050	50 L

B

α-MEM

with L-Glutamine
without Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1330,1000	1 L
A1330,5000	5 L
A1330,9010	10 L
A1330,9050	50 L

B

α-MEM

without L-Glutamine
with Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1913,1000	1 L
A1913,5000	5 L
A1913,9010	10 L
A1913,9050	50 L

B

α-MEM

with L-Glutamine
with Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1329,1000	1 L
A1329,5000	5 L
A1329,9010	10 L
A1329,9050	50 L

B

α-MEM

without L-Glutamine
with 25 mM HEPES
without Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1980,1000	1 L
A1980,5000	5 L
A1980,9010	10 L
A1980,9050	50 L

B

α-MEM

with L-Glutamine
with 25 mM HEPES
without Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1972,1000	1 L
A1972,5000	5 L
A1972,9010	10 L
A1972,9050	50 L

B

α-MEM

without L-Glutamine
with 25 mM HEPES
with Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1949,1000	1 L
A1949,5000	5 L
A1949,9010	10 L
A1949,9050	50 L

B

α-MEM

with L-Glutamine
with 25 mM HEPES
with Ribonucleosides
without Sodium hydrogen carbonate

Order-No.	Quantity
A1914,1000	1 L
A1914,5000	5 L
A1914,9010	10 L
A1914,9050	50 L

B

MEM with Earle's salts

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

MEM with Earle's salts			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1331,1000	1 L	
	A1331,5000	5 L	
	A1331,9010	10 L	
	A1331,9050	50 L	

MEM with Earle's salts			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1332,1000	1 L	
	A1332,5000	5 L	
	A1332,9010	10 L	
	A1332,9050	50 L	

MEM with Earle's salts, autoclavable			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A2597,1000	1 L	
	A2597,5000	5 L	
	A2597,9010	10 L	
	A2597,9050	50 L	

MEM with Earle's salts			B
without L-Glutamine	Order-No.	Quantity	
with NEAA	A2018,1000N	1 L	
without Sodium hydrogen carbonate	A2018,5000	5 L	
	A2018,9010N	10 L	
	A2018,9050	50 L	

MEM with Earle's salts			B
with L-Glutamine	Order-No.	Quantity	
with NEAA	A1334,1000	1 L	
without Sodium hydrogen carbonate	A1334,5000	5 L	
	A1334,9010	10 L	
	A1334,9050	50 L	

MEM with Earle's salts			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2019,1000	1 L	
without Sodium hydrogen carbonate	A2019,5000	5 L	
	A2019,9010	10 L	
	A2019,9050	50 L	

MEM with Earle's salts			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1333,1000	1 L	
without Sodium hydrogen carbonate	A1333,5000	5 L	
	A1333,9010	10 L	
	A1333,9050	50 L	

MEM with Earle's salts			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2032,1000	1 L	
with NEAA	A2032,5000	5 L	
without Sodium hydrogen carbonate	A2032,9010	10 L	
	A2032,9050	50 L	

MEM with Earle's salts			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1956,1000	1 L	
with NEAA	A1956,5000	5 L	
without Sodium hydrogen carbonate	A1956,9010	10 L	
	A1956,9050	50 L	

MEM with Hanks' salts

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

MEM with Hanks' salts			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1957,1000	1 L	
	A1957,5000	5 L	
	A1957,9010	10 L	
	A1957,9050	50 L	

MEM with Hanks' salts			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1335,1000	1 L	
	A1335,5000	5 L	
	A1335,9010	10 L	
	A1335,9050	50 L	

MEM with Hanks' salts			B
without L-Glutamine	Order-No.	Quantity	
with NEAA	A2041,1000	1 L	
without Sodium hydrogen carbonate	A2041,5000	5 L	
	A2041,9010	10 L	
	A2041,9050	50 L	

MEM with Hanks' salts			B
with L-Glutamine	Order-No.	Quantity	
with NEAA	A1337,1000	1 L	
without Sodium hydrogen carbonate	A1337,5000	5 L	
	A1337,9010	10 L	
	A1337,9050	50 L	

MEM with Hanks' salts			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2042,1000	1 L	
without Sodium hydrogen carbonate	A2042,5000	5 L	
	A2042,9010	10 L	
	A2042,9050	50 L	

MEM with Hanks' salts			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1336,1000	1 L	
without Sodium hydrogen carbonate	A1336,5000	5 L	
	A1336,9010	10 L	
	A1336,9050	50 L	

MEM with Hanks' salts			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A2043,1000	1 L	
with NEAA	A2043,5000	5 L	
without Sodium hydrogen carbonate	A2043,9010	10 L	
	A2043,9050	50 L	

MEM with Hanks' salts			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1958,1000	1 L	
with NEAA	A1958,5000	5 L	
without Sodium hydrogen carbonate	A1958,9010	10 L	
	A1958,9050	50 L	

S-MEM, modified for spinner culture

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13hygroscopic
P262**S-MEM, modified for spinner culture**with Earle's salt (modified)
without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1338,1000	1 L
A1338,5000	5 L
A1338,9010	10 L
A1338,9050	50 L

B

S-MEM, modified for spinner culturewith Earle's salts (modified)
with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1308,1000	1 L
A1308,5000	5 L
A1308,9010	10 L
A1308,9050	50 L

B

S-MEM, modified for spinner culture, autoclavablewith Earle's salt (modified)
without L-Glutamine
without Sodium hydrogen carbonate
autoclavable

Order-No.	Quantity
A1975,1000	1 L
A1975,5000	5 L
A1975,9010	10 L
A1975,9050	50 L

B

MenadioneVitamin K₃, 2-Methyl-1,4-
naphthoquinoneC₁₁H₈O₂
M = 172.19 g/mol
CAS-No.: 58-27-5
HS-No.: 29146990
EC-No.: 200-372-6Storage: RT
protected from light
LGK: 10 - 13WGK: 3*
Warning
H335-H302-H315-H319
P262-P305+P351+P338

Melting point 104 - 106°C

**Specification:**Assay min. 97 %
Loss on drying max. 0.5 %

Order-No.	Quantity
A2091,0025	25 g
A2091,0050	50 g

Literature: (1) Auscher, C. & Amory, N. (1976) *Biomedicine* 25, 37-38

The histochemical localization of xanthin oxidase in rat liver.

Comment: Menadione serves as an intermediate hydrogen carrier for the promotion of the staining reaction of the reduction of nitroblue tetrazoliumchloride (NBT) in the histochemical staining (1). It is one of fat-soluble vitamins (vit. A, D, E, K). One gram dissolves in about 60 ml alcohol, 10 ml benzene or 50 ml vegetable oil. It is insoluble in water. Solutions may be heated to 120°C without decomposition (according to Merck Index 13th ed.)**(-)-Menthol crystalline pure Ph. Eur., USP**(1R,2S,5R)-(-)-2-Isopropyl-5-methyl-
cyclohexanolC₁₀H₂₀O
M = 156.27 g/mol
CAS-No.: 2216-51-5
HS-No.: 29061100
EC-No.: 248-690-9Storage: RT
LGK: 10 - 13
Disposal: 3WGK: 1
Warning
H315
P302+P352-P280**Specification:**α20°C/D; 10 %, 96 % EtOH -51° - -48°
Acidic/alk. react. subst. ... complies
Appearance of solution ... compliesIdentity complies
Melting range 41 - 44°C
Non-volatile matter max. 0.05 %Organic vol. impurities
..... complies
Related subst. ... complies

Order-No.	Quantity
A5322,0025	25 g
A5322,0100	100 g

Mercaptoacetic acid see Thioglycolic acid Page 813
2-Mercaptoethanol see β-Mercaptoethanol Page 529

β-Mercaptoethanol

Monothioethylene glycol, 2-Mercaptoethanol

C₂H₆OS
M = 78.13 g/mol
CAS-No.: 60-24-2
HS-No.: 29309099
EC-No.: 200-464-6

Storage: 2-8°C
LGK: 6.1 B
Disposal: 6

Class / PG: 6.1/II
UN2966
WGK: 3
Danger
H301-H315-H330-H310-H318-H410
P304+P341-P273-P302+P352-P305+P351+P338-P280



Boiling point 157°C
Density (d 20°C/4°C) ... 1.12 g/ml
Melting point -40°C
n 20°C/D 1.5006

β-Mercaptoethanol Molecular biology grade

B

Specification:
DNases/RNases/Proteases not detectable
Assay (HPLC) min. 99 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A1108,0025	25 ml
A1108,0100	100 ml
A1108,0250	250 ml
A1108,0500	500 ml

Literature: (1) Keutmann, H.T. & Potts, I.T. (1969) *Anal. Biochem.* **29**, 175-185
(2) Roth, M. (1971) *Anal. Chem.* **43**, 880-882

Improved recovery of methionine after acid hydrolysis using β-mercaptoethanol.
Fluorescence reaction of amino acids.

Comment: β-Mercaptoethanol is used as a reducing agent to prevent the oxidation of proteins (working concentration 5 - 20 mM) or to reduce disulfide bridges in proteins. Very often, β-mercaptoethanol is replaced by DTT or DTE (same concentration or 1 - 5 mM), which is less toxic, less smelling and more effective. The concentration of pure β-mercaptoethanol is 14.3 M.

β-Mercaptoethanol BioChemica

B

Specification:
Assay (HPLC) min. 99 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A4338,0100	100 ml
A4338,0250	250 ml
A4338,0500	500 ml

2-Mercaptoethylamine hydrochloride see Cysteamine hydrochloride BioChemica Page 254

3-Mercaptopicolinic acid hydrochloride

B

C₆H₅NO₂S · HCl
M = 191.60 g/mol
CAS-No.: 14623-54-2
HS-No.: 29309099

Storage: 2-8°C

Specification:
Assay min. 95 %

Order-No.	Quantity
A4963,0100	100 mg
A4963,0500	500 mg
A4963,0001	1 g

Comment: 3-Mercaptopicolinic acid is an inhibitor of phosphoenolpyruvate carboxykinase.

6-Mercaptopurine monohydrate BioChemica

B

6-Thiohypoxanthine, 6-Purinethiol

C₅H₄N₄S · H₂O
M = 170.19 g/mol
CAS-No.: 6112-76-1
HS-No.: 29335995

Storage: RT

WGK: 3
Warning
H302-H315-H335-H319
P305+P351+P338-P261



Specification:
Assay (titr.) min. 99 %

Order-No.	Quantity
A7698,0001	1 g
A7698,0005	5 g
A7698,0010	10 g

Mercury(II) sulfate

Thermal dec. 450°C

HgSO₄
M = 296.65 g/mol
CAS-No.: 7783-35-9
HS-No.: 28520000
EC-No.: 231-992-5

Storage: RT
LGK: 6.1 B

Class / PG: 6.1/II
UN1645
WGK: 3
Danger
H310-H300-H330-H373-H410
P273-P304+P341-P302+P352



Mercury(II) sulfate p. A.

C

Specification:
Assay min. 99 %
Residue on ignition max. 0.02 %
Chloride max. 0.003 %
Fe max. 0.005 %
Hg(II) max. 0.1 %

Order-No.	Quantity
A0393,0100	100 g
A0393,0250	250 g
A0393,0500	500 g
A0393,1000	1 kg
A0393,10006	6 x 1 kg

Mercury(II) sulfate pure

C

Specification:

Assay	min. 98 %	Hg(II)	max. 0.2 %
Residue on ignition	max. 0.1 %		
Chloride	max. 0.005 %		
Fe	max. 0.01 %		

Order-No.	Quantity
A3895,0100	100 g
A3895,0250	250 g
A3895,0500	500 g

Mercury(II) sulfate - Solutions for COD - determination

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 20

Mercury(II) sulfate - Solution I for COD - determination

DIN 38409 (H44)

C

Class / PG: 8(6.1)/II
UN2922
WGK: 2
Danger
H311-H301-H314-H373-H412-H331
P309+P311-P305+P351+P338-P273-
P280-P302+P352

**Composition:**

Mercury(II) sulfate	20 g/L
Potassium dichromate	0.005 mol/L
Sulfuric acid (96 %)	176 g/L

Order-No.	Quantity
A3535,0500	500 ml
A3535,1000	1 L
A3535,10006	6 x 1 L
A3535,2500	2.5 L

Mercury(II) sulfate - Solution II for COD - determination

C

Class / PG: 8(6.1)/III
UN2922
WGK: 3
Danger
H340-H373-H411-H330-H351-H300-
H314-H310
P280-P302+P352-P273-
P305+P351+P338-P309+P311

**Composition:**

Mercury(II) sulfate	80 g/L
Potassium dichromate	0.02 mol/L
Sulfuric acid (96 %)	176 g/L

Order-No.	Quantity
A3014,1000	1 L
A3014,10006	6 x 1 L
A3014,2500	2.5 L
A3014,25004	4 x 2.5 L

Mercury(II) sulfate - Solution III for COD - determination

DIN 38409 (H43)

C

Class / PG: 8(6.1)/II
UN2922
WGK: 3
Danger
H300-H373-H330-H411-H314-H310
P302+P352-P305+P351+P338-P280-
P273-P309+P311

**Composition:**

Mercury(II) sulfate	200 g/L
Sulfuric acid (96 %)	176 g/L

Order-No.	Quantity
A3570,1000	1 L
A3570,2500	2.5 L

Merthiolate see Thimerosal BioChemica Page 812

MES anhydrous

2-Morpholinoethanesulfonic acid

$C_6H_{13}NO_4S$
 $M = 195.24 \text{ g/mol}$
 CAS-No.: 4432-31-9
 HS-No.: 29349990
 EC-No.: 224-632-3

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Melting point > 300°C
 Useful pH range pH 5.5 - 6.7
 pK_a (20°C) 6.15

MES anhydrous Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99.5 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying max. 0.01 %
 pH (0.5 M; H_2O) 2.5 - 4.0 (25°C)

Loss on drying max. 0.5 %
 Chloride max. 0.01 %
 Sulfate max. 0.05 %

Order-No.	Quantity
A4298,0025	25 g
A4298,0100	100 g
A4298,0250	250 g

MES anhydrous BioChemica

B

Specification:

Assay (titr.) min. 99.5 %
 Heavy metals (as Pb) max. 0.001 %
 pH (0.5 M; H_2O ; 25°C) 2.5 - 4.0
 Loss on drying max. 0.5 %
 Chloride max. 0.01 %
 Sulfate max. 0.05 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.05
 280 nm max. 0.02

Order-No.	Quantity
A0689,0050	50 g
A0689,0100	100 g
A0689,0250	250 g
A0689,0500	500 g
A0689,1000	1 kg

MES hemisodium salt Buffer grade

B

$C_{12}H_{25}N_2NaO_6S_2$
 $M = 412.46 \text{ g/mol}$
 CAS-No.: 4432-31-9
 HS-No.: 29349990

Storage: RT

Specification:

Assay min 99 %
 Heavy metals (as Pb) max. 0.0005 %
 pH (10 %; H_2O) 5.7 - 6.3
 Water (K.F.) max. 10 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.05
 280 nm max. 0.02

Order-No.	Quantity
A3237,0025	25 g
A3237,0100	100 g

MES monohydrate

Useful pH range pH 5.5 - 6.7
 pK_a (20°C) 6.15

$C_6H_{13}NO_4S \cdot H_2O$
 $M = 213.25 \text{ g/mol}$
 CAS-No.: 145224-94-8
 HS-No.: 29349990
 EC-No.: 224-632-3

Storage: RT
 LGK: 10 - 13
 Disposal: 3

MES monohydrate Molecular Biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying max. 9.5 %
 pH (1 %; H_2O) 2.5 - 4.0 (25°C)

Chloride max. 0.01 %
 Sulfate max. 0.05 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.05
 280 nm max. 0.02

Order-No.	Quantity
A4730,0050	50 g
A4730,0100	100 g
A4730,0250	250 g

MES monohydrate Buffer grade

B

2-Morpholinoethanesulfonic acid

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying max. 9.5 %
 pH (1 %; H_2O ; 25°C) 2.5 - 4.0
 Chloride max. 0.01 %
 Sulfate max. 0.05 %

A (1 cm/0.1 M in H_2O)
 260 nm max. 0.05
 280 nm max. 0.02

Order-No.	Quantity
A1074,0050	50 g
A1074,0100	100 g
A1074,0250	250 g
A1074,0500	500 g
A1074,1000	1 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
 (2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
 (3) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers for biological research.
 Hydrogen ion buffers.
 Hydrogen ion buffers for biological research.

Comment: MES does not interfere with the Folin protein assay. MES partially decomposes, when autoclaved in the presence of glucose. MES is component of e. g. the DNase buffer (10 mM MES, pH 6 in 0.1 M NaCl; 5 mM $MgCl_2$; 2 mM $CaCl_2$).

MES potassium salt Molecular biology grade

B

2-Morpholinoethanesulfonic acid
potassium salt

C₆H₁₂KNO₄S
M = 233.32 g/mol
CAS-No.: 39946-25-3
HS-No.: 29349100

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
pH (1 %; H₂O) 8.5 - 9.5
Water (K.F.) max. 1 %
Fe max. 0.0005 %

Pb max. 0.0005 %
A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.04

Order-No.
A6109,0025 25 g
A6109,0100 100 g

MES sodium salt

C₆H₁₂NNaO₄S
M = 217.20 g/mol
CAS-No.: 71119-23-8
HS-No.: 29349990
EC-No.: 275-203-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

MES sodium salt Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
pH (1 %; H₂O) 8.5 - 9.5
Water (K.F.) max. 10 %
Fe max. 0.0005 %

Pb max. 0.0005 %
A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.04

Order-No.
A4731,0025 25 g
A4731,0100 100 g

MES sodium salt Buffer grade

B

Specification:

Assay (titr.) min. 99 %
pH (1 %; H₂O) 8.5 - 9.5
Water (K.F.) max. 10 %

A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.04

Order-No.
A3101,0025 25 g
A3101,0100 100 g
A3101,0250 250 g

Metal-Aluminosilicate see Molecular sieves Page 548

Metamycin see Paromomycin sulfate BioChemica Page 592

Metanil yellow

C

3-(4-Anilinophenylazo)-benzenesulfonic
acid sodium salt

C₁₈H₁₄N₃NaO₃S
M = 375.38 g/mol
CAS-No.: 587-98-4
HS-No.: 29270000
EC-No.: 209-08-2

Storage: RT
LGK: 10 - 13

WGK: 2
Danger
H412-H318
P273-P305+P351+P338

Transition interval pH 1.2 - 2.3 (red -
yellow)

Specification:

Sensitivity test complies
Solubility (H₂O, 20°C) 25 g/L

Order-No.
A2825,0010 10 g
A2825,0025 25 g

Methacrylic acid 3-trimethoxysilylpropyl ester see 3-Methacryloxypropyl trimethoxysilane Page 532

3-Methacryloxypropyl trimethoxysilane

B

Binding silane, Silane A 174, Methacrylic
acid 3-trimethoxysilylpropyl ester, 3-
(Trimethoxysilyl)propyl methacrylate

C₁₀H₂₀O₅Si
M = 248.35 g/mol
CAS-No.: 2530-85-0
HS-No.: 29310099
EC-No.: 219-785-8

Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1
Warning
H319-H315
P305+P351+P338

Melting point -48°C

Specification:

Assay (HPLC) approx. 98 %
Identity (IR) complies

Order-No.
A3797,0010 10 ml
A3797,0050 50 ml

Literature: (1) Ren, J. et al. (1997) *Anal. Biochem.* **245**, 79-84

(2) Tereba, A. et al. (1998) *BioTechniques* **25**, 892-897

Analysis of SSCP by capillary electrophoresis with Laser-Induced Fluorescence Detection Using Short-Chain Polyacrylamide as Sieving Medium.

Reuse of Denaturing Polyacrylamide Gels for Short Tandem Repeat Analysis.

Comment: 3-Methacryloxypropyltrimethoxysilane (Silane A 174) is soluble in 50 % acetic acid, methanol, ethanol, chloroform, acetone, toluene and xylene. For health reasons the use of ethanol or acetic acid is recommended. This substance is used in polyacrylamide gel electrophoresis for fixing the acrylamide gel to one of the glass plates. A treatment with 2 % Silane A 174 in 50 % acetic acid in capillary electrophoresis (1) or 9 µl in 3 ml 0.5 % acetic acid in 95 % ethanol (2) is described. The other glass plate is normally treated with dimethyldichlorosilane (A0818) or, alternatively, with GelSave (A2574) to prevent sticking of the gel to the glass plate.

Methanesulfonic acid 70 % pure

C

MSA	CH ₃ O ₃ S M = 96.11 g/mol CAS-No.: 75-75-2 HS-No.: 29041000 EC-No.: 200-898-6	Storage: RT LGK: 8 B Disposal: 4	Class / PG: 8/III UN2586 WGK: 1 Danger H314 P280-P301+P330+P338- P305+P351+P338-P260



Specification:

Assay (titr.)	69.0 - 70.0 %
Density (20°C)	1.34 - 1.36 g/ml
Chloride	max. 0.005 %
Sulfate	max. 0.05 %

Order-No.	Quantity
A7524,1000	1 L
A7524,10006	6 x 1 L
A7524,2500	2.5 L
A7524,25004	4 x 2.5 L

Methanesulfonic acid sodium salt pure

B

Sodium methanesulfonate	CH ₃ NaO ₃ S M = 118.09 g/mol CAS-No.: 2386-57-4 HS-No.: 29041000 EC-No.: 219-203-2	Storage: RT LGK: 10 - 13	Warning H319-H315-H335 P261-P305+P351+P338



Specification:

Assay (titr.)	min. 98 %
Solubility (10 %; H ₂ O)	clear, colorless
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A1268,0010	10 g
A1268,0025	25 g
A1268,0050	50 g

Methanol

Methyl alcohol	CH ₃ O M = 32.04 g/mol CAS-No.: 67-56-1 HS-No.: 29051100 EC-No.: 200-659-6	Storage: RT LGK: 3 A Disposal: 1	Class / PG: 3(6.1)/II UN1230 WGK: 1 hygroscopic Danger H225-H301-H331-H370-H311 P280-P233-P310-P309-P302+P352- P210



Methanol ultrapure

C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity/Alkalinity	max. 0.0002 meq/g
Non-volatile matter	max. 2 ppm
Total P	max. 0.02 ppm
Total S	max. 0.1 ppm
Aldehydes	max. 0.001 %
Ethanol	max. 0.01 %

Water (K.F.)	max. 0.05 %	Li	max. 0.005 ppm
Al	max. 0.02 ppm	Mg	max. 0.02 ppm
Ba	max. 0.005 ppm	Mn	max. 0.005 ppm
Ca	max. 0.05 ppm	Na	max. 0.2 ppm
Cd	max. 0.005 ppm	Ni	max. 0.005 ppm
Cr	max. 0.005 ppm	Pb	max. 0.005 ppm
Fe	max. 0.05 ppm	Zn	max. 0.01 ppm

Order-No.	Quantity
A2389,0250	250 ml
A2389,0500	500 ml
A2389,1000	1 L
A2389,10006	6 x 1 L

Methanol Residue analysis grade

C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity/Alkalinity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.1 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard)	max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard)	max. 10 ng/L

Order-No.	Quantity
A1633,2500	2.5 L
A1633,25004	4 x 2.5 L

Methanol LC-MS grade



C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity	max. 0.0005 meq/g
Non-volatile matter	max. 0.0005 %
Loss on drying	max. 0.05 %
Ca	max. 0.1 ppm
K	max. 0.1 ppm
Mg	max. 0.1 ppm
Na	max. 0.1 ppm
GC/ECD individual signals (lindane standard)	max. 5 ng/L
GC/NPD individual signals (ethylparathion standard)	max. 10 ng/L

Order-No.	Quantity
A8968,1000	1 L
A8968,10006	6 x 1 L
A8968,2500	2.5 L
A8968,25004	4 x 2.5 L

Methanol HPLC grade (fluorescence grade)

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)	Fluorescence (Quinine)	
Acidity/Alkalinity	max. 0.0002 meq/g	210 nm	max. 0.2	
Non-volatile matter	max. 0.0005 %	230 nm	max. 0.1	
Water (K.F.)	max. 0.02 %	250 nm	max. 0.005	
			254 nm	max. 1 ppb
			365 nm	max. 1 ppb

Order-No.	Quantity
A0578,1000	1 L
A0578,10006	6 x 1 L
A0578,2500	2.5 L
A0578,25004	4 x 2.5 L

Methanol HPLC grade (gradient grade)

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0002 meq/g	230 nm max. 0.1
Non-volatile matter	max. 0.0005 %	250 nm max. 0.01
Water (K.F.)	max. 0.02 %	Gradient grade
		235 nm max. 0.02 AU

Order-No.	Quantity
A2391,1000	1 L
A2391,10006	6 x 1 L
A2391,2500	2.5 L
A2391,25004	4 x 2,5 L

Methanol HPLC grade (electrochemical detection)

C

Specification:

Assay (HPLC)	min. 99.9 %
Acidity/Alkalinity	max. 0.0002 meq/g
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.02 %

Order-No.	Quantity
A2400,1000	1 L
A2400,2500	2.5 L
A2400,25004	4 x 2,5 L

Methanol HPLC grade

C

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	220 nm max. 0.15
Non-volatile matter	max. 0.0005 %	230 nm max. 0.1
Water (K.F.)	max. 0.05 %	240 nm max. 0.01
		250 nm max. 0.005

Order-No.	Quantity
A1635,1000	1 L
A1635,10006	6 x 1 L
A1635,2500	2.5 L
A1635,25004	4 x 2,5 L

Methanol Peptid sequencing grade

B

Specification:

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0003 meq/g	210 nm max. 0.40
Residue after evaporation	max. 0.0002 %	230 nm max. 0.15
Loss on drying	max. 0.02 %	250 nm max. 0.01

Order-No.	Quantity
A4321,1000	1 L
A4321,2500	2.5 L

Methanol BioChemica

B

Specification:

Assay (HPLC)	min. 99.8 %
Acidity/Alkalinity	max. 0.0005 meq/g
Heavy metals (as Pb)	max. 0.0005 %
Non-volatile matter	max. 0.001 %
2-Propanol	max. 0.005 %
Ethanol	max. 0.01 %
Water (K.F.)	max. 0.05 %

Order-No.	Quantity
A3493,1000GL	1 L
A3493,10006GL	6 x 1 L
A3493,1000PE	1 L
A3493,10006PE	6 x 1 L
A3493,2500GL	2.5 L
A3493,25004GL	4 x 2,5 L
A3493,2500PE	2.5 L
A3493,25004PE	4 x 2,5 L
A3493,5000	5 L
A3493,9010	10 L

Methanol dried p. A.

C

Specification:

Assay (HPLC)	min. 99.8 %
Non-volatile matter	max. 0.001 %
Acetone	max. 0.001 %
Ethanol	max. 0.01 %
Water (K.F.)	max. 0.005 %

Order-No.	Quantity
A0556,0500	500 ml
A0556,1000	1 L
A0556,10006	6 x 1 L
A0556,2500	2.5 L
A0556,25004	4 x 2,5 L

◆ This product contains molecular sieve as a drying agent!

Methanol p. A.

C

Specification:

Assay (HPLC)	min. 99.8 %	Zn max. 0.000005 %
Acidity/Alkalinity	max. 0.0005 meq/g	
Non-volatile matter	max. 0.001 %	
Total P	max. 0.00005 %	
Total S	max. 0.00001 %	
Total Si	max. 0.00001 %	
2-Propanol	max. 0.005 %	
Ethanol	max. 0.01 %	
Water (K.F.)	max. 0.05 %	
Ca	max. 0.000002 %	
Cu	max. 0.00002 %	
Fe	max. 0.00001 %	
K	max. 0.00005 %	
Mg	max. 0.000005 %	
Na	max. 0.00005 %	
Pb	max. 0.000002 %	

Order-No.	Quantity
A0688,0100	100 ml
A0688,1000GL	1 L
A0688,10006GL	6 x 1 L
A0688,1000PE	1 L
A0688,10006PE	6 x 1 L
A0688,2500GL	2.5 L
A0688,25004GL	4 x 2,5 L
A0688,2500PE	2.5 L
A0688,25004PE	4 x 2,5 L
A0688,5000	5 L
A0688,9010	10 L
A0688,9025BK	25 L
A0688,9025PE	25 L

Methanol pure Ph. Eur.

C

Specification:

Acidic/alk. react. subst.	complies	A (1 cm/1 M in H ₂ O)	
Appearance	clear, colorless li- quid	230 nm	max. 0.15
		250 nm	max. 0.05
Benzene	max. 0.0002 % (v/v)	270 nm	max. 0.02
Identity	complies	290 nm	max. 0.01
Red. substances	complies		
Related subst.	complies		
Relative density	0.791 - 0.793		
Residue after evaporation	max. 0.001 %		
Water (K.F.)	max. 0.1 %		

Order-No.	Quantity
A1833,1000	1 L
A1833,10006	6 x 1 L
A1833,2500	2.5 L
A1833,25004	4 x 2,5 L
A1833,5000	5 L
A1833,9010	10 L
A1833,9025BK	25 L
A1833,9025PE	25 L

Methanol for synthesis

C

Specification:

Assay (HPLC)	min. 99 %
Water (K.F.)	max. 0.25 %

Order-No.	Quantity
A0645,1000	1 L
A0645,10006	6 x 1 L
A0645,2500	2.5 L
A0645,25004	4 x 2,5 L
A0645,5000	5 L
A0645,9010	10 L
A0645,9025BK	25 L
A0645,9025PE	25 L

Methanol Technical grade

C

Specification:

Assay (HPLC)	approx. 98 %
Water (K.F.)	max. 1 %

Order-No.	Quantity
A2954,2500	2.5 L
A2954,25004	4 x 2,5 L
A2954,5000	5 L
A2954,9010	10 L
A2954,9025BK	25 L
A2954,9025PE	25 L

Methanol D₄

C

Boiling point	65°C
Density (d 20°C/4°C)	0.89
Melting point	-99°C

CD ₃ O	
M = 36.07 g/mol	
CAS-No.: 811-98-3	
HS-No.: 28459010	
EC-No.: 212-378-6	

Storage: RT	
LGK: 3 A	
Disposal: 1	

Class / PG: 3(6.1)/II
 UN1230
 WGK: 1
 hygroscopic
 Danger
 H370-H331-H225-H301-H311
 P280-P310-P302+P352-P309-P233-
 P210

**Specification:**

Deuteration degree	min. 99.8 %

Order-No.	Quantity
DS-14,0005	5 ml
DS-14,0025	25 ml

L-Methionine

L-2-Amino-4-methylmercaptobutyric
acid

C ₅ H ₁₁ NO ₂ S	
M = 149.21 g/mol	
CAS-No.: 63-68-3	
HS-No.: 29304010	
EC-No.: 200-562-9	

Storage: RT	
LGK: 10 - 13	

WGK: nwg

Solubility (20°C)	48 g/L (H ₂ O)

L-Methionine Cell culture grade

B

Specification:

Pyrogen test	complies	Ammonium	max. 0.02 %	Pb	max. 0.001 %
Assay (titr.)	min. 99 %	Chloride	max. 0.02 %		
α20°C/D; 2 %, 6 M HCl	+22.5° - +24.0°	Sulfate	max. 0.02 %		
pH (1 %; H ₂ O)	5.6 - 6.1 (25°C)	As	max. 0.0001 %		
Other amino acids	max. 0.5 %	Fe	max. 0.001 %		

Order-No.	Quantity
A3897,0050	50 g
A3897,0100	100 g
A3897,0500	500 g
A3897,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Methionine BioChemica

B

Specification:

Assay (titr.)	min. 99 %	Other amino acids	max. 0.5 %	A (1 cm/0.5 M in 1 M HCl)	
α20°C/D; 2 %, 6 M HCl	+22.5° - +24.0°	Ammonium	max. 0.02 %	260 nm	max. 0.5
Heavy metals (as Pb)	max. 0.001 %	Chloride	max. 0.02 %	280 nm	max. 0.1
Insoluble matter	complies	Sulfate	max. 0.02 %		
pH (1 %; H ₂ O)	5.6 - 6.1 (25°C)				

Order-No.	Quantity
A3491,0050	50 g
A3491,0100	100 g
A3491,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Methionine pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.0 - 101.0 %	Loss on drying	max. 0.3 %
α 20°C/D; 2 %, 6 M HCl	+22.5° - +24.0°	Organic vol. impurities	complies
Appearance of solution	complies	Sulfated ash	max. 0.1 %
Heavy metals (as Pb)	max. 0.001 %	pH (1 %; H ₂ O)	5.6 - 6.1
Identity	complies	Other amino acids	max. 0.5 %

Ammonium	max. 0.02 %
Chloride	max. 0.02 %
Sulfate	max. 0.03 %
Fe	max. 0.001 %

Order-No.	Quantity
A1340,0050	50 g
A1340,0100	100 g
A1340,0500	500 g
A1340,1000	1 kg

♦ All amino acids from AppliChem are of non-animal origin!

Methotrexate BioChemica

B

(+)-Amethopterin, 4-Amino-10-methyl folic acid, MTX, 4-Amino-10-methylpteroyl-L-glutamic acid

C₂₀H₂₂N₈O₅
 M = 454.45 g/mol
 CAS-No.: 59-05-2
 HS-No.: 29335995
 EC-No.: 200-413-8

Storage: 2-8°C
 protected from light
 LGK: 10 -13
 Disposal: 3

Class / PG: 6.1/III
 UN1544
 Danger
 H360-H301-H319-H315
 P305+P351+P338-P301+P310-P201-
 P308+P313



Specification:

Assay	min. 99 % (Sum of enantiomers)
α 20°C/D; 1 %, 0.05 M Na ₂ CO ₃	+19° - +24°

Order-No.	Quantity
A3798,0005	5 mg
A3798,0010	10 mg
A3798,0025	25 mg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. pp. 16.14.1-16.14.7 and 16.14.10+11 Suppl. 18 John Wiley & Sons, New York.

Comment: Methotrexate (MTX) is an analog of folic acid. MTX binds to and inhibits the enzyme dihydrofolate reductase (DHFR), an important enzyme in the purine-, amino acid- and in the nucleoside-biosynthesis. Inhibition of the enzyme leads to cell death. When cells are exposed to low concentrations of MTX, the DHFR-content increases and cell populations may survive. By expressing DHFR on a plasmid after transfection, it can be used as a selection marker. The preferred cell line is the Chinese hamster ovary cell line (CHO). Usually, three different concentrations are applied (0.005, 0.02 and 0.05 μ M MTX) to find out at which level the new recombinant cell line will survive.

Methotrexate is dissolved directly in the culture medium at a concentration of 5 mM and filter-sterilized. Since the efficiency varies from lot to lot, it is recommended to use a single lot for a selection. The dry substance is stable for up to 3 years at -20°C. Store the stock solution protected from light. Methotrexate is not stable in alkaline solutions.

(2R,3S,4S)-2-(4-Methoxybenzyl)-3,4-pyridinediol-3-acetate see Anisomycin BioChemica Page 110

3-Methoxy-5-methyl-4-oxohexa-2,5-diene acid see Penicillic acid BioChemica Page 601

1-Methoxy-5-methylphenazine methosulfate BioChemica

B

1-Methoxy PMS, 1-Methoxy-5-methylphenazinium methyl sulfate

C₁₅H₁₆N₂O₅S
 M = 336.40 g/mol
 CAS-No.: 65162-13-2
 HS-No.: 29339980

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

Warning
 H351-H319-H315-H302
 P305+P351+P338-P281



Specification:

Assay	approx. 95 %

Order-No.	Quantity
A3799,0050	50 mg
A3799,0100	100 mg
A3799,0250	250 mg

1-Methoxy-5-methylphenazinium methyl sulfate see 1-Methoxy-5-methylphenazine methosulfate BioChemica Page 536

2-Methoxy-6-pentyl-1,4-benzoquinone synthetic, allergen from Primula see Primin HPLC grade Page 662

1-Methoxy PMS see 1-Methoxy-5-methylphenazine methosulfate BioChemica Page 536

1-Methoxy-2-propanol pure

C

Propyleneglycol monomethyl ether

C₄H₁₀O₂
 M = 90.12 g/mol
 CAS-No.: 107-98-2
 HS-No.: 29094980
 EC-No.: 203-539-1

Storage: RT
 LGK: 3 A

Class / PG: 3/III
 UN3092
 WGK: 1
 Warning
 H226-H336
 P210



Boiling point	120°C
Melting point	-97°C

Specification:

Assay (HPLC)	min. 98.5 %
Heavy metals (as Pb)	max. 0.001 %
2-Methoxy-1-propanol	max. 0.5 % (GC)
Peroxide	max. 0.005 %

Order-No.	Quantity
A4956,1000	1 L
A4956,10006	6 x 1 L
A4956,2500	2.5 L
A4956,25004	4 x 2,5 L

Methyl alcohol see Methanol Page 533

N-[2-(Methylamino)-ethyl]-5-isoquinoline sulfonamide dihydrochloride see H-8 BioChemica Page 395

Methylbenzene see Toluene Page 821

4-(6-Methylbenzothiazole-2-yl)anilin see APMBT ultrapure Page 113

Methyl blue see Acid blue 93 (C.I. 42780) Page 50

2-Methylbutane

iso-Pentane, Isopentane

Boiling point 28°C
Density (d 20°C/4°C) ... 0.61
Melting point -160°C

C₅H₁₂
M = 72.15 g/mol
CAS-No.: 78-78-4
HS-No.: 29011000
EC-No.: 201-142-8

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/1
UN1265
WGK: 1
Danger
EUH066-H224-H304-H336-H411
P273-P243-P210-P403+P235-
P301+P310-P331



2-Methylbutane p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
Non-volatile matter max. 0.001 %
Loss on drying max. 0.02 %
Al max. 0.0001 %
Co max. 0.000005 %

Cr max. 0.000005 % Pb max. 0.00001 %
Cu max. 0.000005 % Zn max. 0.00001 %
Fe max. 0.00001 %
Mn max. 0.000005 %
Ni max. 0.000005 %

Order-No.	Quantity
A0440,0500	500 ml
A0440,1000	1 L
A0440,10006	6 x 1 L
A0440,2500	2.5 L

2-Methylbutane pure

C

Specification:

Assay (HPLC) min. 99 %
Loss on drying max. 0.05 %
Pd max. 0.001 %

Order-No.	Quantity
A1263,0500	500 ml
A1263,1000	1 L
A1263,10006	6 x 1 L
A1263,2500	2.5 L
A1263,25004	4 x 2.5 L
A1263,5000	5 L

3-Methyl-1-butanol see Isoamyl alcohol Page 463
Methyl tert.-butyl ether see *tert.*-Butyl methyl ether Page 174
Methyl cyanide see Acetonitrile Page 45

Methylcyclohexane for synthesis

C

Hexahydrotoluene

Boiling point 100.9°C
Melting point -126°C
Solubility (20°C) 0.014 g/L (H₂O)

C₇H₁₄
M = 98.19 g/mol
CAS-No.: 108-87-2
HS-No.: 29021900
EC-No.: 203-624-3

Storage: RT
LGK: 3 A
Disposal: 3

Class / PG: 3/II
UN2296
WGK: 2

Specification:

Assay (HPLC) min. 99 %
Density (d 20°C/4°C) 0.768 - 0.770
Identity (IR) complies

Order-No.	Quantity
A7592,0100	100 ml
A7592,1000	1 L
A7592,2500	2.5 L

N-Methyldiethanolamine for synthesis

C

*N,N-Bis(2-hydroxyethyl)-methylamine,
N-Methyl-2,2'-iminodiethanol*

Boiling point 243°C
Density (d20°C/4°C) ... 1.039 - 1.041
Melting point -21°C

C₅H₁₃NO₂
M = 119.16 g/mol
CAS-No.: 105-59-9
HS-No.: 29221920
EC-No.: 203-312-7

Storage: RT
LGK: 10 - 13
Disposal: 1

WGK: 1
Warning
H319
P262-P305+P351+P338



Specification:

Assay (HPLC) min. 98 %
n 20°C/D 1.467 - 1.471

Order-No.	Quantity
A4965,1000	1 L
A4965,2500	2.5 L
A4965,25004	4 x 2.5 L
A4965,9010	10 L

4-Methyl-1,3-dioxolan-2-one see Propylene carbonate pure Page 670
Methyleneazure see Azure B (C.I. 52010) Page 124
N,N-Methylenebisacrylamide see Bisacrylamide Page 143

Methylene blue (C.I. 52015)

Methylthioninium chloride

C₁₆H₁₈ClN₃S

Storage: RT

WGK: 2



Melting point 180°C (dec.)
Solubility (20°C) 50 g/L (H₂O)

M = 319.86 g/mol
CAS-No.: 61-73-4
HS-No.: 29343090
EC-No.: 200-515-2

LGK: 10 - 13

Warning
H315-H302-H335-H319
P261-P305+P351+P338

Methylene blue (C.I. 52015) BioChemica

B

Specification:

Assay (photometr.) min. 85 %
 λ_{max} (50 % EtOH) 663 - 667 nm
E 1 %/1 cm, λ_{max} 2200 - 2750
Loss on drying max. 15 %

Order-No.	Quantity
A1402,0010	10 g
A1402,0025	25 g
A1402,0100	100 g

Literature: (1) Peacock, A.C. & Dingman, C.W. (1967) *Biochemistry* 6, 1818-1827

Resolution of multiple ribonucleic acid species by polyacrylamide gel electrophoresis.

Methylene blue (C.I. 52015) pure USP, BP

C

Specification:

Assay (titr., dried substance) 96.0 - 101.0 %
Chromatogr. purity complies
Identity complies
Loss on drying (105°C) 8.0 - 15.0 %
Loss on drying (75°C; 5 mmHg; 4 h) max. 0.0008 %

Cu or Zn (USP) complies
Fe max. 0.05 %
Pb max. 0.002 %

Order-No.	Quantity
A4084,0025	25 g
A4084,0100	100 g
A4084,0250	250 g

Methylene blue DNA staining reagent see DNA-Dye Methylene blue Page 302

Methylene blue - Solution

C

Ready-to-use aqueous redox indicator solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: 1

Composition:

Methylene blue (A1402) 0.1 % (20°C)

Order-No.	Quantity
A1568,0100	100 ml
A1568,0500	500 ml
A1568,1000	1 L
A1568,10006	6 x 1 L

Methylene chloride see Dichloromethane Page 275

3,4-Methylenedioxyphenol see Sesamol Page 710

Methylene succinic acid see Itaconic acid pure Page 467

Methyl ethyl ketone

2-Butanone, Ethyl methyl ketone, MEK

C₄H₈O

Storage: RT

Class / PG: 3/II



Boiling point 79°C
Melting point -86°C
Solubility (20°C) 290 g/L (H₂O)
n_D 20°C/D 1.3788

M = 72.11 g/mol
CAS-No.: 78-93-3
HS-No.: 29141200
EC-No.: 201-159-0

LGK: 3 A
Disposal: 1

UN1193
WGK: 1
Danger
EUH066-H336-H225-H319
P210-P403+P233-P305+P351+P338

Methyl ethyl ketone p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.001 %
Total P max. 0.00001 %
Total S max. 0.000002 %
Total Si max. 0.000002 %
2-Butanol max. 0.02 %
Acetone max. 0.2 %
Butyl acetate max. 0.05 %

Ethyl acetate max. 0.05 %
Methanol max. 0.05 %
Water (K.F.) max. 0.1 %
Ca max. 0.00002 %
Cr max. 0.00005 %
Cu max. 0.00002 %
Fe max. 0.00001 %
K max. 0.00005 %
Mg max. 0.000005 %

Na max. 0.00005 %
Pb max. 0.000002 %
Zn max. 0.00001 %

Order-No.	Quantity
A2395,0500	500 ml
A2395,1000	1 L
A2395,10006	6 x 1 L
A2395,2500	2.5 L
A2395,25004	4 x 2.5 L
A2395,5000	5 L
A2395,9010	10 L

Methyl ethyl ketone pure

C

Specification:

Assay (HPLC) min. 99 %
Chloride max. 0.005 %
As max. 0.0002 %
Ca max. 0.02 %
Fe max. 0.001 %
Pb max. 0.002 %

Order-No.	Quantity
A0579,1000	1 L
A0579,10006	6 x 1 L
A0579,2500	2.5 L
A0579,25004	4 x 2.5 L
A0579,5000	5 L
A0579,9010	10 L
A0579,9025BK	25 L
A0579,9025PE	25 L

Methyl green (C.I. 42590)

C

Ethyl green, Methyl green zinc chloride double salt

$C_{27}H_{35}BrCl_3N_3Zn$
 $M = 653.26$ g/mol
 CAS-No.: 7114-03-6
 HS-No.: 32041300
 EC-No.: 230-415-4

Storage: RT
 LGK: 10 - 13

WGK: 3
 Danger
 H314-H411
 P280-P273-P301+P330+P338-
 P305+P351+P338



Solubility (20°C) 60 g/L (H₂O)
 Transition interval pH 0.1 - 2.3
 (yellow - blue)

Specification:

Assay (photometr.) approx. 60 %
 λ_{max} 630 - 635 nm
 Loss on drying max. 8 %

Order-No.	Quantity
A1403,0005	5 g
A1403,0010	10 g
A1403,0025	25 g

Literature: (1) Müller, W. & Gautier, F. (1975) *Eur. J. Biochem.* **54**, 385-394

Interactions of heteroaromatic compounds with nucleic acids: A-T-specific non-intercalating DNA ligands.

Comment: Methyl green stains DNA by specific binding to AT-base pairs without intercalation. The separation capacity in CsCl-gradients of different DNAs is improved.

Methyl green - Solution

C

Ready-to-use aqueous indicator solution

HS-No.: 32041300
 EC-No.: 230-415-4

Storage: RT
 LGK: 10 - 13

WGK: 1

Composition:

Methyl green (A1403) 0.1 % (20°C)

Order-No.	Quantity
A0554,0100	100 ml
A0554,0500	500 ml
A0554,1000	1 L

Methyl green zinc chloride double salt see Methyl green (C.I. 42590) Page 539
 1-Methylhexane see *n*-Heptane Page 403

Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC

C

Methylparaben, 4-Hydroxybenzoic acid methylester

$C_8H_8O_3$
 $M = 152.15$ g/mol
 CAS-No.: 99-76-3
 HS-No.: 29182900
 EC-No.: 202-785-7

Storage: RT
 protected from light
 LGK: 10 - 13

WGK: 1

Solubility (25°C) 2.5 g/L (H₂O)

Specification:

Assay (titr.) 99.0 - 100.5 %
 Acidity complies
 Appearance of solution complies
 Identity (IR) complies
 Loss on drying max. 0.5 %

Melting point 125 - 128°C
 Organic impurities max. 1.0 %
 Pb max. 0.0002 %
 Related subst. max. 0.5 %
 Sulfated ash max. 0.05 %

Order-No.	Quantity
A6603,0250	250 g
A6603,1000	1 kg
A6603,10006	6 x 1 kg
A6603,5000	5 kg

2-Methyl-3-hydroxy-4-formyl-5-hydroxy-methylpyridine hydrochloride see Pyridoxal hydrochloride *BioChemica* Page 678
 (S)-2-Methyl-5-hydroxy-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid see Hydroxyectoine Page 425
 N-Methyl-2,2'-iminodiethanol see N-Methyldiethanolamine Page 537
 Methyl isobutyl ketone see 4-Methyl-2-pentanone Page 541

Methyl lactate

L-Lactic acid methyl ester

$C_4H_8O_3$
 $M = 104.11$ g/mol
 CAS-No.: 27871-49-4
 HS-No.: 29181100
 EC-No.: 248-704-9

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/III
 UN3272
 Warning
 H335-H319-H226
 P262-P305+P351+P338



Methyl lactate p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
 α 20°C/D (undiluted) -8° - -9°
 Acidity max. 0.2 %
 Appearance of liquid clear, colorless

Distillation range (5 - 95 %) 140 - 150°C (1013 mbar)
 Non-volatile matter max. 0.01 %

Water (K.F.) max. 0.05 %

Order-No.	Quantity
A4985,0250	250 ml
A4985,0500	500 ml
A4985,1000	1 L

Methyl lactate for synthesis

C

Specification:

Assay (HPLC) min. 99 %
 Acidity max. 0.2 %
 Distillation range (5 - 95 %) 140 - 150°C (1013 mbar)

Non-volatile matter max. 0.01 %
 Water (K.F.) max. 0.1 %

Order-No.	Quantity
A4701,0500	500 ml
A4701,1000	1 L

Methyl linoleate Cell culture grade

B

Boiling point 340°C

$C_{19}H_{34}O_2$
 $M = 294.48$ g/mol
CAS-No.: 112-63-0
HS-No.: 29161500
EC-No.: 203-993-0

Storage: 2-8°C
LGK: 10 - 13
Disposal: 1

WGK: 1

Specification:

Assay (HPLC) min. 99 %

Order-No.
A4108,0001
A4108,0005

Quantity
1 g
5 g

5-Methyl-2-(1-methylethyl)-phenol see Thymol pure Ph. Eur. Page 815

2-Methyl-1,4-naphthoquinone see Menadione Page 528

N-(Methylnitrosocarbamoyl)- α -D-glucosamine see Streptozotocin Page 774

N-Methyl-N-nitrosourea see N-Nitroso-N-methylurea Page 575

Methyl orange (C.I. 13025)

C

Tropaeoline, Orange III, Helianthine,
Gold Orange

$C_{14}H_{14}N_3NaO_3S$
 $M = 327.34$ g/mol
CAS-No.: 547-58-0
HS-No.: 29270000
EC-No.: 208-925-3

Storage: RT
LGK: 6.1 A
Disposal: 3

Class / PG: 6.1/II
UN2811
WGK: 3*
Danger
H301
P310-P309


Specification:

Assay (photometr.) min. 85 %
 λ_1 (pH 3.1) 501 - 504 nm
 λ_2 (pH 4.4) 467 - 471 nm
Loss on drying max. 6 %

Order-No.
A0581,0025
A0581,0100
A0581,0250

Quantity
25 g
100 g
250 g

Literature: (1) Yang, Y.-I. *et al.* (2001) *Electrophoresis* **22**, 855-859

Counterion-dye staining method for DNA in agarose gels using crystal violet and methyl orange.

Comment: The commonly used DNA staining method employing ethidium bromide (EtBr) has two major drawbacks: The DNA has to be illuminated with UV-light damaging the DNA and the laboratory personnel and it is a strong mutagen. Therefore, staining methods employing visible light and less hazardous dyes are preferable. Crystal violet (CV) has a positively charged ammonium ion and three aromatic rings, binding to the negatively charged phosphate backbone of DNA. The optimal concentration for staining DNA in agarose gels turned out to be 0.001 % in the pH range of 6 - 8. Staining for 30 minutes resulted in a detection limit of 16 ng DNA. Thus, CV staining is four times less sensitive than EtBr staining. Combination of CV with the negatively charged counterion-dye methyl orange (MO), having 2 aromatic rings and one negatively charged sulfonic group, sensitivity could be improved to 8 ng detection limit. Under identical conditions (see above), CV was applied at a concentration of 0.0025 % and MO of 0.0005 %, respectively. Stock solutions were made up each at 0.25 %.

Since both dyes are easily removed (destaining for 2 hours with 50 % ethanol, subsequently 1 hour equilibration with distilled water), DNA was successfully applied in PCR assays and cloning experiments (ref. 1).

Methyl orange - Solution (in diluted Ethanol)

C

ready-to-use indicator solution in diluted
ethanol

HS-No.: 38220000
EC-No.: 208-925-3

Storage: RT
LGK: 10 - 13
Disposal: 1

Composition:

Methyl orange (A0581) 0.04 %

Order-No.
A0550,0100
A0550,0500
A0550,1000
A0550,10006

Quantity
100 ml
500 ml
1 L
6 x 1 L

Methyl orange - Solution (in water)

C

Ready-to-use aqueous indicator solution

HS-No.: 38220000

Storage: RT
Disposal: 28

WGK: nwg

Composition:

Methyl orange (A0581) 0.1 %

Order-No.
A6253,0100
A6253,0500
A6253,1000
A6253,10006

Quantity
100 ml
500 ml
1 L
6 x 1 L

Methylparaben see Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC Page 539

2-Methyl pentane see *iso*-Hexane (*n*-Hexane < 5 %) Page 406

(±)-2-Methyl-2,4-pentanediol *BioChemica*

B

Hexylene glycol, MPD

C₆H₁₄O₂

Storage: RT
protected from light

WGK: 1
Warning
H319-H315
P302+P352-P305+P351+P338



Boiling point 197°C
Density 0.925 g/ml

M = 118.17 g/mol
CAS-No.: 107-41-5
HS-No.: 29053995
EC-No.: 203-489-0

Specification:

Assay (HPLC) min. 99 %
Solubility (1 M; H₂O; 20°C) clear, colorless
Chloride max. 0.005 %
Sulfate max. 0.005 %

Cr max. 0.0001 %
Cu max. 0.0001 %
Fe max. 0.0001 %
Mn max. 0.0001 %
Ni max. 0.0001 %
Pb max. 0.0001 %
Zn max. 0.0001 %

Order-No.
A6620,0025 **Quantity**
25 ml
A6620,0100 100 ml

Literature: (1) Watson, J.C. & Thompson, W.F. (1986) *Methods Enzymol.* **118**, 57-75
(2) Peterson, D.G. *et al.* (1997) *Plant Mol. Biol. Repr.* **15**, 148-153

Purification and Restriction Endonuclease Analysis of Plant Nuclear DNA.
Isolation of Milligram Quantities of Nuclear DNA From Tomato (*Lycopersicon
esculentum*), A Plant Containing High Levels of Polyphenolic Compounds.

Comment: Hexylene glycol stabilizes isolated mitotic chromosomes from animal and plant cells and is therefore applied for the isolation of nuclear DNA. The chromatin within nuclei prepared in hexylene glycol buffers is packed into a typical nucleosomal structure. The extraction buffer contains 1 M hexylene glycol, 10 mM PIPES-KOH (pH 7.0), 10 mM MgCl₂, 5 mM 2-mercaptoethanol and the gradient buffer as a Percoll® gradient in 0.5 M hexylene glycol, 10 mM PIPES-KOH (pH 7.0), 10 mM MgCl₂, 5 mM 2-mercaptoethanol, 0.5 % Triton® X-100 (according to Ref. 1).

4-Methyl-2-pentanone

Isopropylacetone, Methyl isobutyl
ketone, MIBK

C₆H₁₂O

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1245
WGK: 1
Danger
EUH066-H319-H335-H225-H332
P305+P351+P338-P210-P304+P340



Boiling point 116 - 118°C
Melting point -84°C
n 20°C/D 1.3959

M = 100.16 g/mol
CAS-No.: 108-10-1
HS-No.: 29141300
EC-No.: 203-550-1

4-Methyl-2-pentanone p. A.

C

Specification:

Assay (HPLC) min. 99 %
Acidity/Alkalinity max. 0.002 meq/g
Non-volatile matter max. 0.001 %
Water (K.F.) max. 0.1 %
Al max. 0.00005 %
Ca max. 0.00005 %

Cd max. 0.000005 %
Co max. 0.000002 %
Cr max. 0.000002 %
Cu max. 0.000002 %
Fe max. 0.00001 %
Mg max. 0.00001 %
Mn max. 0.000002 %
Na max. 0.000002 %
Ni max. 0.000005 %
Pb max. 0.00001 %
Zn max. 0.00001 %

Order-No. **Quantity**
A2394,0500 500 ml
A2394,1000 1 L
A2394,10006 6 x 1 L
A2394,2500 2.5 L
A2394,25004 4 x 2.5 L

4-Methyl-2-pentanone pure

C

Specification:

Assay (HPLC) min. 99 %
Non-volatile matter max. 0.005 %
Ca max. 0.02 %
Fe max. 0.001 %
Pb max. 0.002 %

Order-No. **Quantity**
A2405,1000 1 L
A2405,10006 6 x 1 L
A2405,2500 2.5 L
A2405,5000 5 L

N-Methylphenazinium methylsulfate see Phenazine methosulfate Page 611

2-Methyl-1-propanol see Isobutanol Page 463

N-Methylpyrrolidine-2-one see 1-Methyl-2-pyrrolidone Page 541

1-Methyl-2-pyrrolidone

N-Methylpyrrolidine-2-one, NMP

C₅H₉NO

Storage: RT
LGK: 10 - 13
Disposal: 5

WGK: 1
Danger
H360D-H315-H335-H319
P201-P308+P313-P302+P352-
P305+P351+P338



Boiling point 202°C
Melting point -24°C
n 20°C/D 1.4684

M = 99.13 g/mol
CAS-No.: 872-50-4
HS-No.: 29337900
EC-No.: 212-828-1

1-Methyl-2-pyrrolidone pure

C

Specification:

Assay (HPLC) min. 99.5 %
Acidity/Alkalinity max. 0.0002 meq/g
Non-volatile matter max. 0.005 %
Water (K.F.) max. 0.05 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No. **Quantity**
A4849,0500 500 ml
A4849,1000 1 L
A4849,10006 6 x 1 L
A4849,2500 2.5 L
A4849,25004 4 x 2.5 L

1-Methyl-2-pyrrolidone for synthesis

C

Specification:

Assay (HPLC) min. 99 %
Acidity/Alkalinity max. 0.0005 meq/g
Water (K.F.) max. 0.1 %

Order-No. **Quantity**
A3524,0500 500 ml
A3524,1000 1 L
A3524,10006 6 x 1 L
A3524,2500 2.5 L
A3524,25004 4 x 2.5 L

4'-O-Methylquercetin see Isorhamnetin HPLC grade Page 466

Methyl red (C.I. 13020)

C

4-(Dimethylamino)-azobenzene-2'-carboxylic acid

$C_{15}H_{15}N_3O_2$
 $M = 269.31$ g/mol
 CAS-No.: 493-52-7
 HS-No.: 29270000
 EC-No.: 207-776-1

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 2

Melting point 179 - 182°C
 Transition interval pH 4.5 - 6.2
 (violet-red - brownish)

Specification:

Assay (photometr.) min. 95 %
 λ_1 (pH 4.5) 523 - 526 nm
 λ_2 (pH 6.2) 427 - 437 nm
 E 1 %/1 cm, λ_1 min. 1300

E 1 %/1 cm, λ_2 min. 700
 Loss on drying max. 5 %

Order-No.	Quantity
A2392,0025	25 g
A2392,0100	100 g
A2392,0250	250 g

Methyl red - Solution

C

Ready-to-use indicator solution in 96 % ethanol

HS-No.: 38220000
 EC-No.: 207-776-1

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1993
 Danger
 H225
 P210

**Composition:**

Methyl red (A2392) 0.1 %

Order-No.	Quantity
A0545,0100	100 ml
A0545,0500	500 ml
A0545,1000	1 L

Methyl red sodium salt

C

4-(Dimethylamino)-azobenzene-2'-carboxylic acid sodium salt

$C_{15}H_{14}N_3NaO_2$
 $M = 291.29$ g/mol
 CAS-No.: 845-10-3
 HS-No.: 29270000
 EC-No.: 212-682-9

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 3*

Solubility (25°C) 800 g/l (H₂O)
 Transition interval pH 4.5 - 6.2
 (violet-red - brownish)

Specification:

Assay (photometr.) min. 95 %
 λ_1 (pH 4.5) 523 - 526 nm
 λ_2 (pH 6.2) 430 - 438 nm

Loss on drying (110°C) . max. 5 %

Order-No.	Quantity
A2401,0025	25 g
A2401,0100	100 g

Methyl red sodium salt - Solution

C

ready-to-use aqueous indicator solution

HS-No.: 38220000

Storage: RT

Composition:

Methyl red Na salt (A2401) . 1 %

Order-No.	Quantity
A0582,0100	100 ml
A0582,0500	500 ml

Methyl salicylate

Boiling point 224°C
 Melting point -8°C

$C_8H_8O_3$
 $M = 152.15$ g/mol
 CAS-No.: 119-36-8
 HS-No.: 29182300
 EC-No.: 204-317-7

Storage: RT
 LGK: 3 B

WGK: 1
 Warning
 H302
 P305+P351+P338

**Methyl salicylate pure Ph. Eur., NF**

C

Specification:

Assay (HPLC) 99.0 - 100.0 %
 Acidic/alk. react. subst. . complies
 Appearance of solution . complies
 Density (20°C) 1.180 - 1.186 g/ml
 Heavy metals (as Pb) . max. 0.002 %

Identity complies
 Opt. rotation inactive
 Refractive index (n₂₀²⁰/D) 1.5350 - 1.5380
 Solubility in EtOH 70 % . complies

Volatile organic subst.
 complies

Order-No.	Quantity
A7010,0500	500 ml
A7010,1000	1 L
A7010,10006	6 x 1 L
A7010,2500	2.5 L

Methyl salicylate for synthesis

C

Specification:

Assay (HPLC) min. 99 %
 Density (25°C) 1.180 - 1.186 g/ml
 Refractive index (20°C) 1.5350 - 1.5380

Order-No.	Quantity
A4643,1000	1 L
A4643,10006	6 x 1 L
A4643,2500	2.5 L

3-(Methylsulfonyl)propylglucosinolate potassium salt see Glucoiberin HPLC grade Page 376
 Methylsulfoxide see Dimethyl sulfoxide Page 286

2-Methyltetrahydrofuran pure

C

Tetrahydro-2-methylfuran
stabilized with 150 - 400 ppm BHT

$C_5H_{10}O$
 $M = 86.13$ g/mol
CAS-No.: 96-47-9
HS-No.: 29321900
EC-No.: 202-507-4

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN2536
WGK: 2
Danger
EUH019-H335-H225-H319
P210-P243-P305+P351+P338-P233



Boiling point 78 - 80°C
Density (20°C) 0.854 g/cm³
Melting point -136°C
Solubility (H₂O; 25°C) . 150 g/L

Specification:

Assay (HPLC) min. 99 %
Density (d₂₀⁴/4°C) 0.852 - 0.855
Identity complies
Moisture max. 0.03 %

Order-No.	Quantity
A7503,1000	1 L
A7503,10006	6 x 1 L
A7503,2500	2.5 L
A7503,25004	4 x 2.5 L

(S)-2-Methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid see Ectoine Page 312
4-Methylthiobutylglucosinolate potassium salt see Glucoerucin HPLC grade Page 376
Methylthionium chloride see Methylene blue (C.I. 52015) Page 538
6-Methyl-1,3,8-trihydroxyanthraquinone see Emodin HPLC grade Page 326

N-Methyl-N-(trimethylsilyl)-acetamide

C

MSA

$C_6H_{15}NOSi$
 $M = 145.28$ g/mol
CAS-No.: 7449-74-3
HS-No.: 29310099
EC-No.: 231-217-0

Storage: RT
LGK: 10 - 13
Disposal: 24

Class / PG: 3/III
UN1993
Warning
H226
P260-P262



Boiling point 160°C

Specification:

Assay (HPLC) min. 97 %

Order-No.	Quantity
A1653,0001	1 ml
A1653,0005	5 ml

N-Methyl-N-(trimethylsilyl)-2,2,2-trifluoroacetamide

C

MSTFA

$C_6H_{12}F_3NOSi$
 $M = 199.25$ g/mol
CAS-No.: 24589-78-4
HS-No.: 29310099
EC-No.: 246-331-6

Storage: RT
LGK: 3A
Disposal: 24

Class / PG: 3/III
UN1993
Warning
H226-H335-H319-H315
P302+P352-P305+P351+P338-P210-
P304+P340



Boiling point 132°C

Specification:

Assay (HPLC) min. 95 %

Order-No.	Quantity
A1654,0001	1 ml
A1654,0005	5 ml

Comment: Silylating agent for numerous functional groups, practicable with DMF or pyridine.

4-Methylumbelliferyl-2-acetamido-2-deoxy β -D-galactopyranoside see MU-N-acetyl- β -D-galactosaminide *BioChemica* Page 551
4-Methylumbelliferyl acetate see MUAcetate *BioChemica* Page 551
4-Methylumbelliferyl-N-acetyl β -D-galactosaminide see MU-N-acetyl- β -D-galactosaminide *BioChemica* Page 551
4-Methylumbelliferyl- β -D-galactopyranoside see MUGalactoside *BioChemica* Page 552
4-Methylumbelliferyl- β -D-glucopyranoside see MUGlucoside *BioChemica* Page 552
4-Methylumbelliferyl- β -D-glucuronide trihydrate see MUG trihydrate *BioChemica* Page 552
4-Methylumbelliferyl-phosphate disodium salt trihydrate see MUPhosphate disodium salt trihydrate *BioChemica* Page 553
Methyl violet 10 B see Crystal violet (C.I. 42555) Page 247
Methyl violet 2B see Methyl violet (C.I. 42535) Page 543

Methyl violet (C.I. 42535)

C

Methyl violet 2B, Basic Violet 1

$C_{24}H_{26}ClN_3$
 $M = 393.96$ g/mol
CAS-No.: 8004-87-3
HS-No.: 32041300
EC-No.: 210-042-3

Storage: RT
LGK: 10 - 13

Class / PG: 9/III
UN3077
WGK: 2
Danger
H302-H351-H318-H410
P273-P305+P351+P338-P308+P313



Melting range 137°C
Solubility (25°C) 30 g/L (H₂O)

Specification:

Assay (photometr.) min. 75 %
 λ_{max} 583 - 587 nm
E 1 %/1 cm, λ_{max} 1600 - 1800
Loss on drying max. 10 %

Order-No.	Quantity
A2397,0025	25 g
A2397,0100	100 g
A2397,0250	250 g

Methyl violet - Solution

C

Ready-to-use indicator solution in 96 % ethanol

HS-No.: 38220000
EC-No.: 210-042-3

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1993
Danger
H225
P210



Composition:
Methyl violet (A2397) 0.1 %

Order-No.	Quantity
A0552,0100	100 ml
A0552,0500	500 ml
A0552,1000	1 L
A0552,10006	6 x 1 L

Methyl yellow see Dimethyl yellow (C.I. 11020) Page 288
MgCl₂ · 6H₂O see Magnesium chloride hexahydrate Page 503
4MgCO₃ · Mg(OH)₂ · 5H₂O see Magnesium hydroxide carbonate light Page 505
Mg(NO₃)₂ · 6H₂O see Magnesium nitrate hexahydrate Page 505
MgSO₄ · 7H₂O see Magnesium sulfate heptahydrate Page 507
MgSO₄ · xH₂O see Magnesium sulfate dried Page 506
MIBK see 4-Methyl-2-pentanone Page 541
Micrococcal nuclease see Nuclease, Micrococcus Page 579

α₁-Microglobulin, human

B

lyophilized from 20 mM NH₄CO₃
from human urine from donors with renal
tubular proteinuria.

HS-No.: 30021095

Storage: 2-8°C

Specification:
Assay min. 96 %
Appearance white to off-white
powder

Order-No.	Quantity
A6937,0100	100 µg

Comment:Radial Immunodiffusion vs Internal Standard: >1.0 mg/ml (dispensing solution) reconstitute it in a dispensing solution consisting of a 50 mM phosphate buffer pH >7.0 containing 150 mM NaCl and 0.09 % sodium azide.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

β₂-Microglobulin, human

B

lyophilized from 20 mM NH₄CO₃. May contain
traces of buffer salt.
from human urine from donors with chronic
renal tubular proteinuria.

M = ~12,000 daltons
HS-No.: 30021095

Storage: 2-8°C

Specification:
Assay (SDS-PAGE) min. 98 %
Appearance white to straw co-
lored

Order-No.	Quantity
A6938,0100	100 µg
A6938,0500	500 µg

Comment:Analysis: SDS-PAGE and cellulose acetate electrophoresis show one band only. Immunological identity and human β₂-microglobulin concentration verified by radial immunodiffusion. Electrophoretic and chromatographic data consistent with a molecular weight of approx. 12,000 for this product.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Midostaurin see PKC412 BioChemica Page 629

rHu MIF



B

recombinant Human Migration Inhibitory
Factor

M = 12.5 kDa
HS-No.: 29371900

Storage: -20°C

lyophilized from a sterile solution
containing 10 mM sodium phosphate,
pH 7.5
from *E. coli*

Specification:
Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8255,0005	5 µg
A8255,0025	25 µg
A8255,0100	100 µg

Comment:We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.®Recombinant Human Migration Inhibitory Factor (rHu MIF) acts as an inflammatory mediator consisting of two alpha-helices and six beta-strands, four of which form a beta-sheet structure. The remaining two beta-strands interact with other MIF molecules forming a trimer in solution. rHu MIF acts on fibroblasts by inducing IL-1, IL-8 and MMP expression. MIF stimulates NO production and TNF-α release following IFN-γ activation on macrophages. rHu MIF is a non-glycosylated polypeptide that contains 115 amino acids.

recombinant Human Migration Inhibitory Factor see rHu MIF Page 544
Milk powder see Nonfat dried milk powder Page 577
Milk sugar see D(+)-Lactose monohydrate Page 478
Mineral oil see Paraffin oil Page 591
Minocyclin see Myco-2 Page 554

rHu MIP-1α bioconfident grade



B

recombinant Human Macrophage
Inflammatory Protein-1α
Sterile filtered through a 0.2 μm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 9.8 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/μg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8842,0010	10 μg
A8842,0050	50 μg
A8842,0100	100 μg
A8842,1000	1 mg

Comment: Recombinant Human MIP-1α contains 67 amino acids and a 17 amino acid histidine-based tag for a total length of 84 amino acids and has a predicted molecular mass of 9.8 kDa including his-tag. The recombinant protein migrates with an apparent molecular mass of 15 kDa in SDS-PAGE.

rHu MIP-1α



B

recombinant Human Macrophage
Inflammatory Protein-1α, CCL3
lyophilized without additives
from *E. coli*

M = 7.82 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8250,0005	5 μg
A8250,0020	20 μg
A8250,0100	100 μg

Comment: Recombinant Human MIP-1α produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 70 amino acids and having a molecular mass of 7.82 kDa.

rM MIP-1α



B

recombinant Mouse Macrophage
Inflammatory Protein-1α, CCL 3
lyophilized without additives
from *E. coli*

M = 7.82 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8304,0002	2 μg
A8304,0010	10 μg
A8304,0100	100 μg

Comment: Recombinant Mouse Macrophage Inflammatory Protein-1α produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 69 amino acids and having a molecular mass of 7.82 kDa.

rHu MIP-1β



B

recombinant Human Macrophage
Inflammatory Protein-1β
lyophilized without additives
from *E. coli*

M = 7.62 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8264,0002	2 μg
A8264,0010	10 μg
A8264,0100	100 μg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions. Recombinant Human MIP-1β is a single, non-glycosylated, polypeptide chain containing 69 amino acids.

rM MIP-1β



B

CCL 4, recombinant Mouse Macrophage
Inflammatory Protein-1β
lyophilized without additives
from *E. coli*

M = 7.81 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8278,0002	2 μg
A8278,0010	10 μg
A8278,0100	100 μg

Comment: Recombinant Mouse Macrophage Inflammatory Protein-1β produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 69 amino acids and having a molecular mass of 7.81 kDa.

rHu MIP-3α



B

LARC, recombinant Human Macrophage
Inflammatory Protein-3α, CCL20
lyophilized without additives
from *E. coli*

M = 8.0 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 1.0 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8271,0002	2 µg
A8271,0010	10 µg
A8271,0100	100 µg

Comment: Human Macrophage Inflammatory Protein-3α, also known as LARC (Liver and Activation Regulated Chemokine) or CCL20. This protein is strongly up regulated by inflammatory signals, and down regulated by the anti-inflammatory cytokine IL-10. H-MIP-3α is a non-glycosylated polypeptide chain consisting of 70 amino acids and a molecular weight of 8.0 kDa.

rM MIP-3α



B

recombinant Mouse Macrophage
Inflammatory Protein-3α, CCL 20
lyophilized without additives
from *E. coli*

M = 7.9 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 - 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8224,0005	5 µg
A8224,0020	20 µg
A8224,0100	100 µg

Comment: Recombinant Mouse MIP-3α a CC chemokine that is expressed in the liver, lymph nodes, lung and other tissues and signals through the CCR6 receptor. Mouse MIP-3α shows chemotactic activity towards lymphocytes and dendritic cells. Recombinant Mouse MIP-3α has a molecular weight of 7.9 kDa, comprised of 70 amino.

rHu MIP-3β



B

recombinant Human Macrophage
Inflammatory Protein-3β, CCL 19
lyophilized without additives
from *E. coli*

M = 8.81 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8232,0005	5 µg
A8232,0020	20 µg
A8232,0100	100 µg

Comment: Recombinant Human MIP-3β produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 77 amino acids and having a molecular mass of 8.81 kDa.

rHu MIP-4



B

CCL 18, recombinant Human
Macrophage Inflammatory Protein-4
lyophilized without additives
from *E. coli*

M = 7.81 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8218,0002	2 µg
A8218,0010	10 µg
A8218,0100	100 µg

Comment: Recombinant Human Macrophage Inflammatory Protein-4 produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 69 amino acids and having a molecular mass of 7.81 kDa.

Mithramycin A

B

Melting point approx. 183°C

 $C_{52}H_{76}O_{24}$
 $M = 1085.17$ g/mol
CAS-No.: 18378-89-7
HS-No.: 29419000

Storage: 2-8°C
protected from light
LGK: 10 - 13

Warning
H302
P281-P308+P313


Specification:

Assay min. 85 %

Order-No.	Quantity
A2189,0001	1 mg
A2189,0005	5 mg

Literature: (1) Crissman, H.A. & Tobey, R.A. (1990) *Methods Cell Biol.* **33**, 97-103

(2) Blume, S.W. *et al.* (1991) *J. Clin. Invest.* **88**, 1613-1621

(3) Hardenbol, P. & Van Dyke, M.W. (1992) *Biochem. Biophys. Res. Com.* **185**, 553-558

(4) Aich, P. & Dasgupta, D. (1995) *Biochemistry* **34**, 1376-1385

Specific staining of DNA with the fluorescent antibiotics Mithramycin, Chromomycin, and Olivomycin.

Mithramycin inhibits SP1 binding and selectivity inhibits transcriptional activity of the dihydrofolate reductase gene *in vitro* and *in vivo*.

In vitro inhibition of c-myc transcription by Mithramycin.

Role of Magnesium in Mithramycin-DNA interaction: Binding of Mithramycin-Mg²⁺ complexes with DNA.

Mitomycin C

B

 $C_{15}H_{18}N_4O_5$
 $M = 334.33$ g/mol
CAS-No.: 50-07-7
HS-No.: 29419000
EC-No.: 200-008-6

Storage: 2-8°C
protected from light
LGK: 6.1 B

Class / PG: 6.1/II
UN2811
WGK: 3
Warning
H351-H302
P308+P313-P281


Specification:

Assay min. 98 %

Water (K.F.) max. 3 %

supplied as mixture of 2 mg with 48 mg NaCl

Order-No.	Quantity
A2190,0002	2 mg

Literature: (1) Hashimoto, Y. *et al.* (1982) *Tetrahedron Lett.* **23**, 677-680

(2) Ueda, K. & Komano, T. (1984) *Nucleic Acids Res.* **12**, 6673-6683

(3) Ueda, K. *et al.* (1984) *Biochemistry* **23**, 1634-1640

(4) Yao, K.-S. & O'Dwyer, P.J. (1995) *Biochem. Pharmacol.* **49**, 275-282

(5) Schwartz, G.K. *et al.* (1995) *J. Natl. Cancer Inst.* **87**, 1394-1399

(6) Baumann, R.P. *et al.* (2002) *BioTechniques* **32**, 1030-1036

Structures of modified nucleotides isolated from calf thymus DNA alkylated with reductively activated Mitomycin C.

Sequence-specific DNA-damage induced by reduced Mitomycin C and 7-N-(p-hydroxyphenyl)-Mitomycin c.

Sequence specificity of heat-labile sites in DNA induced by Mitomycin C.

Induction of DT-Diaphorase by Mitomycin C.

Promotion of apoptosis by a PKC-inhibitor in mitomycin C-treated cells.

Mitomycin C: Novel Selection Marker for Mammalian Cell Transfection.

Mixed-bed resin MBH 100 (AppliQUA™)

C

AppliQUA™ MBH

HS-No.: 39140000

Storage: RT

Warning
H319
P305+P351+P338


Specification:

Bulk density ~750 g/L

Ionic form as supplied H⁺ / OH⁻

Matrix Sulfonic acid / quarternary amine

Mixing proportion 1 : 1 (Vol.)

Particle form pellets

Range of particle size 0.3 - 1.2 mm

Thermal stability max. 70°C

Total exchange capacity
..... cationic min. 1.7
eq/L

Order-No.	Quantity
A4434,0500	500 ml
A4434,5000	5 L
A4434,9025	25 L

Comment: AppliChem supplies the corresponding Stainless Steel - Cartridges (AppliQUA™) unfilled (A4864) or filled (A3285), respectively.

Mixture of Anomers see *n*-Octyl-D-glucopyranoside Page 582

Mixture of Gramicidin A, B, C and D see Gramicidin Page 390

Mixture of (S)-2-Hydroxypropane acid, its condensation products and water see Lactic acid (approx. 90 %) pure Ph. Eur., USP, Food grade Page 476

Mixture of solvents (Cyclohexane : Ethanol 1 : 2, v/v) p. A.

C

Cyclohexan : Ethanol 1 : 2, v/v - Mixture of solvents

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1993
WGK: 1
Danger
H304-H225-H410-H315-H336
P331-P403+P235-P240-P301+P310-P210-P273


Specification:

Non-volatile matter max. 0.001 %

Benzene max. 0.005 %

Loss on drying max. 0.1 %

Cu max. 0.00005 %

Fe max. 0.00005 %

Mg max. 0.00005 %

Pb max. 0.00005 %

Zn max. 0.00005 %

Order-No.	Quantity
A4707,2500	2.5 L
A4707,5000	5 L

Mixture of solvents (Phenol : Methanol 75 % : 25 %, w/w) p. A.

C

HS-No.: 38220000

Storage: 2-8°C
protected from light
Disposal: 9Class / PG: 6.1/II
UN2810
Danger
H301-H314-H331-H370-H311
P280-P302+P352-P307+P311-
P305+P351+P338-P210**Specification:**Heavy metals max. 0.001 %
Non-volatile matter max. 0.005 %
pH (5 %; H₂O) 4.5 - 6.0Cresols max. 0.1 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A4733,1000	1 L
A4733,5000	5 L

MnCl₂ · 4H₂O see Manganese(II) chloride tetrahydrate Page 514MnSO₄ · H₂O see Manganese(II) sulfate monohydrate Page 514

modified Grace's Insect medium see TNM-FH - Insect medium (modified Grace's Insect medium) Page 820

Molecular sieves*Zeolithe, Metal-Aluminosilicate*

HS-No.: 38249015

Storage: RT
LGK: 10 - 13

WGK: 1

Molecular sieve 3Å (0,3 nm)

C

*Beads, reclaimable***Specification:**Water absorbency min. 20 % (24 h, 80
% humidity)

Order-No.	Quantity
A2396,0250	250 g
A2396,0500	500 g
A2396,1000	1 kg

◆ Mechanical abrasion leads to powdery dust!

Molecular sieve 4Å (0.4 nm)

C

*Beads, reclaimable***Specification:**Water absorbency min. 20 % (24 h, 80
% humidity)

Order-No.	Quantity
A1465,0250	250 g
A1465,0500	500 g
A1465,1000	1 kg

◆ Mechanical abrasion leads to powdery dust!

Molecular sieve 5Å (0,5 nm)

C

*Beads, reclaimable***Specification:**Water absorbency min. 20 % (24 h, 80
% humidity)

Order-No.	Quantity
A0553,0250	250 g
A0553,0500	500 g
A0553,1000	1 kg

◆ Mechanical abrasion leads to powdery dust!

Molybdenum(IV) sulfide pure

C

MoS₂
M = 160.06 g/mol
CAS-No.: 1317-33-5
HS-No.: 29309099
EC-No.: 215-263-9Storage: RT
LGK: 10 - 13
Disposal: 15

WGK: nwg

Specification:Assay min. 98 %
Identity complies

Order-No.	Quantity
A1281,0250	250 g
A1281,0500	500 g

Moniliformin sodium salt *BioChemica*

B

1-Hydroxycyclobut-1-ene-3,4-dione
from *Fusarium moniliforme*

$C_4H_3O_3Na$
 $M = 120.04$ g/mol
CAS-No.: 71376-34-6
HS-No.: 29144090

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
Danger
H301
P301+P310



Decomposition at 345 - 355°C
without melting
Solubility (20 mg/ml; H₂O)
..... clear, yellowish

Specification:

Assay (TLC) min. 95 %
 λ_{max} (MeOH) 226, 259 nm

Order-No. **A7724,0001** Quantity
1 mg

Comment: Moniliformin is produced by many *Fusarium* species. The salt form of the mycotoxin is soluble in water and other polar solvents, such as methanol.

recombinant Human Monocyte Chemotactic Protein see rHu MCP-1 Page 520
recombinant Human Monocyte Chemotactic Protein 2 see rHu MCP-2 Page 521
recombinant Mouse Monocyte Chemotactic Protein-3 see rM MCP-3 Page 521
recombinant Human Monocyte Chemotactic Protein 3 see rHu MCP-3 Page 521
recombinant Human Monocyte Chemotactic Protein 4 see rHu MCP-4 Page 521
Monoethanolamine see Ethanolamine *BioChemica* Page 337
Monomycin see Paromomycin sulfate *BioChemica* Page 592
DL- α -Monoclein see rac.-1-Oleoyl-glycerol *BioChemica* Page 584
Monoclein see rac.-1-Oleoyl-glycerol *BioChemica* Page 584
Monorden see Radicol *BioChemica* Page 681
Monorhein see Rhein Page 686
Monosodium 2-naphthyl phosphate see 2-Naphthyl phosphate monosodium salt *BioChemica* Page 561
Monothioethylene glycol see β -Mercaptoethanol Page 529
Montmorillonite see Bentonite Page 130

MOPS

3-Morpholinopropanesulfonic acid

$C_7H_{15}NO_3S$
 $M = 209.27$ g/mol
CAS-No.: 1132-61-2
HS-No.: 29349990
EC-No.: 214-478-5

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3*

Melting point > 250°C
Useful pH range pH 6.5 - 7.9
 pK_a (25°C) 7.2

MOPS Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
pH (0.1 M; H₂O) 3.5 - 4.5
Fe max. 0.0001 %
Pb max. 0.001 %

Order-No. Quantity
A2947,0100 100 g
A2947,0250 250 g
A2947,0500 500 g
A2947,1000 1 kg

MOPS Buffer grade

B

Specification:

Assay (titr.) min. 99.5 %
pH (0.1 M; H₂O) 3.5 - 4.5
Fe max. 0.0001 %
Pb max. 0.001 %

Order-No. Quantity
A1076,0100 100 g
A1076,0250 250 g
A1076,0500 500 g
A1076,1000 1 kg
A1076,10006 6 x 1 kg
A1076,5000 5 kg

Literature: (1) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
(2) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers.
Hydrogen ion buffers for biological research.

Comment: MOPS interferes with the Folin (Lowry) protein assay, but not the Biuret protein assay. It doesn't bind metal ions and decomposes partially, when autoclaved in the presence of glucose.

MOPS hemisodium salt Buffer grade

B

3-Morpholinopropanesulfonic acid
hemisodium salt

$C_{14}H_{29}N_2NaO_6S_2$
 $M = 440.40$ g/mol
CAS-No.: 117961-20-3
HS-No.: 29349990

Storage: RT
LGK: 10 - 13
Disposal: 3

Useful pH range pH 6.5 - 7.9
 pK_a (25°C) 7.2

Specification:

Assay (titr.) min. 98 %
Appearance white powder
Heavy metals (as Pb) max. 0.001 %
Water (K.F) max. 2 %

Order-No. Quantity
A4517,0050 50 g
A4517,0100 100 g
A4517,0250 250 g

MOPS sodium salt Buffer grade

B

3-Morpholinopropanesulfonic acid
sodium salt

$C_7H_{14}NNaO_4S$
 $M = 231.25$ g/mol
CAS-No.: 71119-22-7
HS-No.: 29349990

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point > 300°C
Useful pH range pH 6.5 - 7.9
 pK_a (25°C) 7.2

Specification:

Assay (titr.) min. 99 %
Fe max. 0.0005 %
Pb max. 0.001 %

A (1 cm/0.1 M in H_2O)
260 nm max. 0.05
280 nm max. 0.05

Order-No.	Quantity
A1077,0100	100 g
A1077,0250	250 g
A1077,0500	500 g
A1077,1000	1 kg

MOPSO Buffer grade

B

3-Morpholino-2-hydroxy-
propanesulfonic acid

$C_7H_{12}NO_5S$
 $M = 225.27$ g/mol
CAS-No.: 68399-77-9
HS-No.: 29349990
EC-No.: 269-989-6

Storage: RT
LGK: 10 - 13
Disposal: 3

Warning
H319-H315-H335
P261-P305+P351+P338



Melting point 275 - 280°C (dec.)
Useful pH range pH 6.2 - 7.6
 pK_a (20°C) 6.95

Specification:

Assay (titr.) min. 99 %
Solubility (0.5 M; H_2O ; 20°C) clear
Sulfated ash max. 0.2 %

Chloride max. 0.05 %
Sulfate max. 0.005 %
Fe max. 0.001 %

Mg max. 0.0005 %
Pb max. 0.0001 %

Order-No.	Quantity
A1078,0025	25 g
A1078,0100	100 g

Literature: (1) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers for biological research.

Mordant Yellow 1 see Alizarin yellow GG (C.I. 14025) Page 80
2-Morpholinoethanesulfonic acid see MES anhydrous Page 531
2-Morpholinoethanesulfonic acid potassium salt see MES potassium salt Molecular biology grade Page 532
2-Morpholinoethanesulfonic acid sodium salt see MES sodium salt Page 532
3-Morpholino-2-hydroxy-propanesulfonic acid see MOPSO Buffer grade Page 550
3-Morpholinopropanesulfonic acid see MOPS Page 549
3-Morpholinopropanesulfonic acid hemisodium salt see MOPS hemisodium salt Buffer grade Page 549
3-Morpholinopropanesulfonic acid sodium salt see MOPS sodium salt Buffer grade Page 550
water-soluble Mounting medium see Mowiol® 4-88 Histology grade Page 550

Mowiol® 4-88 Histology grade



B

water-soluble Mounting medium

$M =$ approx. 31000 g/mol
CAS-No.: 9002-89-5
HS-No.: 39053000
EC-No.: 209-183-3

Storage: RT

WGK: 1

Melting point approx. 300°C

Specification:

Appearance colorless-yellowish
granules
Ash (as Na_2O) max. 5 %
Degree of hydrolysis (Mol%) 86.7 - 88.7 %

Ester content (mg KOH/g)
..... 130 - 150
Residual Acetyl content 10.0 - 11.6 %
Solubility water-soluble

Viscosity (4 %, H_2O , 20°C)
..... 3.0 - 5.0 mPa·s

Order-No.	Quantity
A9011,0100	100 g
A9011,0250	250 g
A9011,1000	1 kg

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MPD see (±)-2-Methyl-2,4-pentandiol *BioChemica* Page 541
MPO see Myeloperoxidase, human Page 555

MRS Agar Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Ammonium citrate 2.0 g/L
Buffers 2.25 g/L
Glucose 20.0 g/L
Magnesium sulfate 0.2 g/L

Manganese sulfate 0.05 g/L
Peptones 25.5 g/L

Specification:

pH before autoclaving
..... approx. 6.2 (20°C)

Order-No.	Quantity
A5802,0500	500 g
A5802,5000	5 kg

◆ **Attention:** Please note that a supplement (A9134) exists for this agar. Please order separately.

Literature: (1) DeMan *et al.* (1960) *J. Appl. Bact.* **23**, 30.

Comment: This is a low-selective medium, suitable for the isolation and cultivation of *Lactobacillus* species.

Directions: Suspend 69 g in 1 L of distilled water. Add 1 ml of Tween® 80 and boil the suspension until the medium is dissolved completely. Dispense into tubes or little bottles and sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

MRS Broth Base

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Ammonium citrate 2.0 g/L
Buffers 2.25 g/L
Glucose 20.0 g/L
Magnesium sulfate 0.2 g/L
Manganese sulfate 0.05 g/L

Peptones 25.5 g/L

Specification:

pH before autoclaving
..... approx. 6.2 (20°C)

Order-No.	Quantity
A5810,0500	500 g
A5810,5000	5 kg

◆ **Attention:** Please note that a supplement (A9134) exists for this agar. Please order separately.

Literature: (1) DeMan *et al.* (1960) *J. Appl. Bact.* **23**, 30.

Comment: This is a low-selective medium, suitable for the isolation and cultivation of *Lactobacillus* species.

Directions: Suspend 55 g in 1 L of distilled water. Add 1 ml of Tween 80 and heat gently to dissolve the medium completely. Dispense into final containers and sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

MSA see N-Methyl-N-(trimethylsilyl)-acetamide Page 543

MSTFA see N-Methyl-N-(trimethylsilyl)-2,2,2-trifluoroacetamide Page 543

MSTN see rHu Myostatin Page 555

MTBE see *tert*.-Butyl methyl ether Page 174

MTBSTFA see N-(*tert*.-Butyldimethylsilyl)-N-methyltrifluoroacetamide Page 173

MTT see Thiazolyl blue tetrazolium bromide *BioChemica* Page 811

MTX see Methotrexate *BioChemica* Page 536

MUAcetate *BioChemica*

B

4-Methylumbelliferyl acetate, Acetic acid-4-methylumbelliferyl ester

C₁₂H₁₀O₄
M = 218.21 g/mol
CAS-No.: 2747-05-9
HS-No.: 29322985
EC-No.: 220-386-6

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %

Order-No.	Quantity
A4012,0001	1 g
A4012,0005	5 g
A4012,0010	10 g

Mucinase see Hyaluronidase Page 410

MU-N-acetyl-β-D-galactosaminide *BioChemica*

B

4-Methylumbelliferyl-N-acetyl β-D-galactosaminide, 4-Methylumbelliferyl-2-acetamido-2-deoxy β-D-galactopyranoside

C₁₈H₂₁NO₈
M = 379.37 g/mol
CAS-No.: 36476-29-6
HS-No.: 29389090

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Melting point 195 - 198°C

Specification:

Assay (TLC) min. 98 %
α20°C/D; 1 %, Pyridine -42° ± 2°
Free 4-Methylumbelliferone max. 0.1 %

Order-No.	Quantity
A0687,0100	100 mg
A0687,0500	500 mg
A0687,0001	1 g

Mueller-Hinton Agar

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 17.0 g/L
Peptones 19.5 g/L
Starch soluble 1.5 g/L

Specification:

pH before autoclaving .. approx. 7.4 (20°C)

Order-No.	Quantity
A3390,0500	500 g
A3390,5000	5 kg

Literature: (1) Mueller, J.H. & Hinton, J. (1941) *Proc. Soc. Exp. Biol. Med.* **48**, 330-333

A Protein-free Medium for Primary Isolation of the Gonococcus and Meningococcus.

Comment: This is an antimicrobial susceptibility testing medium, which may be used in international recognised standard procedures.

Directions: Suspend 38 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Mueller-Hinton II Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 17.0 g/L
Peptones 19.5 g/L
Starch soluble 1.5 g/L

Specification:

pH before autoclaving . . . approx. 7.4 (20°C)

Order-No.	Quantity
A5826,0500	500 g
A5826,5000	5 kg

Literature: (1) Mueller, H.J. & Hinton, J. (1941) *Proc. Soc. Exp. Biol. Med.* **48**, 330-333

A Protein-free Medium for Primary Isolation of the *Gonococcus* and *Meningococcus*.

Comment: This is an antimicrobial susceptibility testing medium, which fits to the requirements of NCCLS. The medium has extremely low concentrations of thymine and thymidine as well as appropriate levels of calcium and magnesium ions.

Directions: Suspend 38 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Mueller-Hinton Broth

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Peptones 19.5 g/L
Starch soluble 1.5 g/L

Specification:

pH before autoclaving . . . approx. 7.4 (20°C)

Order-No.	Quantity
A3751,0500	500 g
A3751,5000	5 kg

Literature: (1) Mueller, H.J. & Hinton, J. (1941) *Proc. Soc. Exp. Biol. Med.* **48**, 330-333

A Protein-free Medium for Primary Isolation of the *Gonococcus* and *Meningococcus*.

Comment: This is an antimicrobial susceptibility testing medium, which may be used in international recognised standard procedures.

Directions: Suspend 21 g in 1 L of distilled water and boil to dissolve the medium completely. Dispense into final containers and sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

MUG trihydrate BioChemica

B

4-Methylumbelliferyl- β -D-glucuronide trihydrate

 $C_{16}H_{16}O_9 \cdot 3H_2O$
 $M = 406.33$ g/mol
CAS-No.: 6160-80-1
HS-No.: 29389090
EC-No.: 228-186-0

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Melting point 102°C

Specification:

Assay min. 99 %
Solubility (Pyridine) clear, colorless
Free 4-Methylumbelliferone max. 0.0025 %
Water (K.F.) max. 15.0 %

Order-No.	Quantity
A1129,0500	500 mg
A1129,0001	1 g
A1129,0005	5 g

Literature: (1) Mead, J.A.R. *et al.* (1955) *Biochem. J.* **61**, 569-574

The biosynthesis of the glucuronides of Umbelliferone and 4-Methylumbelliferone and their use in fluorimetric determination of β -Glucuronidase.

(2) Langley, S.D. *et al.* (1983) *J. Biol. Chem.* **258**, 7416-7424

Genetic variant of β -Glucuronidase in *Drosophila melanogaster*.

MUGalactoside BioChemica

B

4-Methylumbelliferyl- β -D-galactopyranoside

 $C_{16}H_{18}O_8$
 $M = 338.32$ g/mol
CAS-No.: 6160-78-7
HS-No.: 29389090
EC-No.: 254-031-1

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Melting point 260 - 265°C (dec.)

Specification:

Assay min. 98 %
 α 20°C/D; 1 %, Pyridine -64° $\pm$ 2°
Free 4-Methylumbelliferone max. 0.01 %
Water (K.F.) max. 1.0 %

Order-No.	Quantity
A1274,0500	500 mg
A1274,0001	1 g
A1274,0005	5 g

Literature: (1) Lo, J.-t. *et al.* (1979) *J. Biol. Chem.* **254**, 6710-6715

Purification and properties of sphingolipide β -galactosidases from human placenta. β -Galactosidase-linked immunoassay of Prostaglandin $F_{2\alpha}$.

(2) Yano, T. *et al.* (1981) *J. Biochem.* **90**, 773-777

MUGlucoside BioChemica

B

4-Methylumbelliferyl- β -D-glucopyranoside

 $C_{16}H_{18}O_8$
 $M = 338.32$ g/mol
CAS-No.: 18997-57-4
HS-No.: 29389090
EC-No.: 241-794-0

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Melting point 210 - 212°C

Specification:

Assay min. 99 %
 α 20°C/D; 0.3 %, H_2O -98° $\pm$ 2°
Free 4-Methylumbelliferone max. 0.01 %
Water (K.F.) max. 1.0 %

Order-No.	Quantity
A1273,0250	250 mg
A1273,0500	500 mg
A1273,0001	1 g

Literature: (1) Daniels, L.B. *et al.* (1981) *J. Biol. Chem.* **256**, 13004-13013

Purification and characterization of a cytosolic broad specificity β -glucosidase from human liver.

MUPhosphate disodium salt trihydrate *BioChemica*

B

4-Methylumbelliferyl-phosphate
disodium salt trihydrate

$C_{10}H_7Na_2O_6P \cdot 3H_2O$
 $M = 354.13$ g/mol
CAS-No.: 22919-26-2
HS-No.: 29389090
EC-No.: 245-325-0

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 99 %
Free 4-Methylumbelliferone max. 0.1 %
Water (K.F.) 15 - 16.5 %

Order-No.	Quantity
A1275,0250	250 mg
A1275,0500	500 mg
A1275,0001	1 g

Literature: (1) Fernley, H.N. & Walker, P.G. (1965) *Biochem. J.* **97**, 95-103

(2) Guilbault, G.G. & Sadar, S.H. (1968) *Anal. Letters* **1**, 333-345
(3) Roberts, I.M. *et al.* (1991) *J. Immunol. Methods* **143**, 49-56

Kinetic behaviour of calf-intestinal alkaline phosphatase with 4-Methylumbelliferyl phosphate.
Umbelliferone phosphate as a substrate for acid and alkaline phosphatase.
Comparison of the sensitivity of different enzyme immuno assays.

AC-MultiCell



B

HS-No.: 38210000

Storage: 2-8°C
Shipment: wet ice

Specification:

Osmolality 290 - 330 mOsm/kg
Sterility complies
pH 7.2 - 7.5

Order-No.	Quantity
A8333,0100	100 ml
A8333,0500	500 ml

Comment: AC-MultiCell is a ready-to-use serum-free medium for adherent cells, after the addition of 2 mM glutamine. The formulation contains no albumin which has been found to be non-essential for cell growth, and even prevents efficient adhesion in some cases. The protein content of AC-MultiCell is therefore less than 30 mg/L, and the medium contains no growth factors or hormones other than insulin. The formulation also contains no attachment factor, which in many (but not all) cases must be added for successful use. Since AC-MultiCell is intended for use with adherent cells, in many cases it will be necessary to use fibronectin for the initial adhesion of the cells to the growth surface. This must be checked individually for each specific type of cell. Some cells will not grow at all without fibronectin; others require no fibronectin addition; while others grow without fibronectin, but performance will be improved if fibronectin is added. In the cases of a few unusual types of cells, it may also be necessary to add the growth medium AC-MultiCell a specific growth factor or hormone, for which the cells have a specific requirement.

Mupirocin pure USP

B

$C_{26}H_{44}O_9$
 $M = 500.62$ g/mol
CAS-No.: 12650-69-0
HS-No.: 29419000

Storage: RT

Specification:

Assay (cal. on dried subst.) . 920 - 1020 *g/mg
Crystallinity complies
Identity (IR) complies
pH (25°C) 3.5 - 4.5
Water (K.F.) max. 1 %

Order-No.	Quantity
A4718,0001	1 g
A4718,0005	5 g
A4718,0025	25 g

Muramidase see Lysozyme Page 500

Murexide (C.I. 56085)

C

Purpuric acid ammonium salt

$C_8H_8N_6O_6$
 $M = 284.19$ g/mol
CAS-No.: 3051-09-0
HS-No.: 29335400
EC-No.: 221-266-6

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 2

Melting range > 300°C

Specification:

λ_{max} 518 - 526 nm
E 1 %/1 cm, λ_{max} (H₂O) ... min. 300
Loss on drying max. 2 %

Order-No.	Quantity
A2398,0005	5 g
A2398,0010	10 g
A2398,0025	25 g

Myco-1 & 2 Set



B

sterile solutions

HS-No.: 38220000

Storage: -20°C

- ◆ for the treatment of Mycoplasma-infected cells.
- ◆ delivered in 2 x 10 ml, 2 x 20 ml or 2 x 100 ml
- ◆ Set components
 - Myco-1 (A5222), based on the antibiotic Tiamulin
 - Myco-2 (A5233), based on the antibiotic Minocyclin

Order-No.	Quantity
A8360,0010	1 Set
A8360,0020	1 Set
A8360,0100	1 Set

Myco-1

B

Tiamulin
sterile solution

HS-No.: 38220000

Storage: -20°C

- for the treatment of Mycoplasma-infected cells.
- 100X concentrated antibiotic solution.
- Application in combination with Myco-2 (A5233).
- based on the antibiotic Tiamulin

Order-No.	Quantity
A5222,0010	10 ml
A5222,0020	20 ml
A5222,0100	100 ml

Comment: Myco-1 is based on the antibiotic tiamulin which is produced by the fungus *Pleurotus mutilus*. Please see Myco-2 (A5233) for additional informations.

Myco-2

B

Minocyclin
sterile solution

HS-No.: 38220000

Storage: -20°C

- for the treatment of Mycoplasma-infected cells.
- 100X concentrated antibiotic solution.
- Application in combination with Myco-1 (A5222).
- based on the antibiotic Minocycline

Order-No.	Quantity
A5233,0010	10 ml
A5233,0020	20 ml
A5233,0100	100 ml

Comment: The contamination of cells with mycoplasma is a very common problem, even though it often goes unnoticed since no cloudiness appears in the cell culture. Nevertheless the contamination often causes biochemical changes as well as changes in the immunological properties of the cells. Since mycoplasma-infected cells cannot always be discarded, many complicated methods have been suggested for the elimination of the mycoplasma. AppliChem offers a combination of antibiotics, which have been shown to be effective in the elimination of mycoplasma species that account for 90 % of the contamination found in cell cultures. Embryonic stem cells (ES cells) have been treated successfully with Myco-1 and Myco-2 too.

Myco-2 is based on minocycline, which is a tetracycline derivative. Myco-1 (A5222) and Myco-2 are generally used sequentially in combination. Due to the cytotoxicity, approximately 10 % of the cells will be killed by the treatment. The failure rate of the treatment is 5 - 8 % only. Instructions for use will be supplied with the products.

Myco-3

B

sterile solution

HS-No.: 38220000

Storage: -20°C

- for the treatment of Mycoplasma-infected cells.
- 100X concentrated antibiotic solution.
- Application without additional antibiotics.
- based on the antibiotic Ciprofloxacin

Order-No.	Quantity
A5240,0010	10 ml
A5240,0020	20 ml
A5240,0100	100 ml

Comment: Myco-3 is based on the ciprofloxacin antibiotic, which is a member of the fluoroquinolone group. Many mycoplasma species have been found to be sensitive to Myco-3, including *A. laidlawii*, *M. orale*, *M. hyorhinis*, *M. fermentans*, and *M. arginini*. These species are responsible for most of the contamination in cell culture. At the concentrations recommended for use (1 µg/ml), no cytotoxic effects have been found, and the treatment is easy to perform. The failure rate is slightly higher as compared to the Myco-1 and Myco-2 products. The pH value of Myco-3 is acidic (pH 4 - 5). When added to medium the pH change is negligible.

Instructions for Use: Add 1 ml Myco-3 to 100 ml medium. Continue the treatment for a total of 14 days, while changing the medium (containing Myco-3) every 2 - 3 days. Retain the cells in the growth medium for an additional 14 days before re-testing for mycoplasma.

Myco-4

B

HS-No.: 38220000

Storage: 2-8°C

- For the treatment of Mycoplasma-infected cells.
- Lowest cytotoxic effects
- Suitable for all permanent mammalian cell lines
- Almost 100 % of permanent eradication for mycoplasma is achieved
- Any type of Mycoplasma, Acholeplasma, Spiroplasma, and Entomoplasma can be successfully treated with Myco-4
- Combination of antibiotic and biophysical agents result in very low risk to cause resistance
- Myco-4 is compatible with all common antibiotic markers.

Order-No.	Quantity
A8366,0002	2 Kit
A8366,0005	5 Kit
A8366,0010	10 Kit

Mycophenolic acid BioChemica

B

from *Penicillium brevi-compactum*

$C_{17}H_{20}O_6$
 $M = 320.34$ g/mol
CAS-No.: 24280-93-1
HS-No.: 29419000
EC-No.: 246-119-3

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Warning
H302
P301+P312-P330-P264



Specification:

Assay approx. 99 %
Solubility (5 %; MeOH) clear, colorless

Order-No.	Quantity
A3801,0010	10 mg
A3801,0050	50 mg
A3801,0100	100 mg

Literature: (1) Hupe, D.J. et al. (1986) *J. Biol. Chem.* **261**, 8363-8369

IMP-Dehydrogenase of the intracellular parasite *Eimeria tenella*: Inhibition by mycophenolic acid.

Mycoplasma PCR Test Kit see PCR Mycoplasma Test Kit Page 598
Mycoplasma PCR Test Kit II see PCR Mycoplasma Test Kit II Page 598
Mycoporphyrin see Hypericin HPLC grade Page 430
Mycosee see D(+)-Trehalose dihydrate *BioChemica* Page 828
Mycostatin see Nystatin dihydrate *BioChemica* Page 580

Myeloperoxidase, human

B

Peroxidase, myelo, [E.C. 1.11.1.7], MPO
supplied liquid in 50 mM sodium
acetate, pH 6.0, 0.1 M NaCl
from human neutrophil

$M = 145$ kDa
CAS-No.: 9003-99-0
HS-No.: 35079090

Storage: 2-8°C

Specification:

A430 nm/280 nm min. 0.7
Activity min. 100 U/ml
Protein min. 1 mg/ml

Order-No.	Quantity
A6969,0100	100 µg
A6969,0001	1 mg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Myoglobin, human

B

supplied liquid in 50 mM phosphate buffer,
pH 7.5, 150 mM NaCl, 0.1 % NaN_3
from human heart tissue

CAS-No.: 11080-17-4
HS-No.: 35040090

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 96 %
Concentration min. 1 mg/ml

Order-No.	Quantity
A6972,0100	100 µg
A6972,0001	1 mg

Comment: **Analysis:** Cellulose acetate electrophoresis shows one band only. SDS-PAGE shows one band corresponding to molecular weight of Myoglobin.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

recombinant Human Myostatin see rHu Myostatin Page 555

rHu Myostatin



B

GDF-8, *MSTN*, recombinant Human
Myostatin, Growth Differentiation Factor-
8
lyophilized with no additives
from *E. coli*

$M = 28.81$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute with 20 mM HCl at a concentration of 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8256,0002	2 µg
A8256,0010	10 µg
A8256,0100	100 µg

Comment: Myostatin (GDF8, MSTN) is a member of the transforming growth factor- β superfamily that is essential for proper regulation of skeletal muscle mass. Myostatin is a secreted protein that negatively regulates skeletal muscle mass determining both muscle fiber number and size. The myostatin pathway is conserved and regulates muscle mass in a number of animal species ranging from fish to humans. Inhibition of myostatin using a variety of therapeutic approaches can increase muscle mass in a number of animal models of human disease, including muscular dystrophy. Recombinant Human Myostatin also called GDF-8 produced in *E. coli* is a homodimer, non-glycosylated polypeptide chain containing 2 x 109 amino acids and having a total molecular mass of 24.81 kDa.

rHu Myostatin-P



B

recombinant Human Myostatin-Propeptide
lyophilized without additives
from *E. coli*

$M = 27.8$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute with 20 mM HCl at a concentration of 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8267,0005	5 µg
A8267,0025	25 µg
A8267,0100	100 µg

Comment: Myostatin (GDF-8), a member of the TGF β superfamily, is a potent and specific negative regulator of skeletal muscle mass. In serum, myostatin circulates as part of a latent complex containing myostatin propeptide and/or follistatin-related gene. The myostatin propeptide is known to bind and inhibit myostatin *in vitro*. This interaction is relevant *in vivo*, with a majority (> 70 %) of myostatin in serum bound to its propeptide. The myostatin propeptide is negative regulator of myostatin *in vivo*. Recombinant Human Myostatin Propeptide is a 27.8 kDa protein consisting of 244 amino acid residues.

recombinant Human Myostatin-Propeptide see rHu Myostatin-P Page 556
Myricitrin-3-O-rhamnoside see Myricitrin HPLC grade Page 556

Myricitrin HPLC grade



B

Myricitrosid, Myricetin-3-O-rhamnoside
from *Myrica cerifera*

$\text{C}_{21}\text{H}_{20}\text{O}_{12}$
 $M = 464,38$ g/mol
CAS-No.: 17912-87-7
HS-No.: 29329900

Storage: $2-8^{\circ}\text{C}$
LGK: 10 - 13

Warning
H302
P308+P313-P260



Specification:

Assay min. 99 %

Order-No.	Quantity
A8728,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Myricitrosid see Myricitrin HPLC grade Page 556

Myriocin BioChemica

B

Thermozymocidin
from *Mycelia sterilia*

$\text{C}_{21}\text{H}_{39}\text{NO}_6$
 $M = 401,54$ g/mol
CAS-No.: 35891-70-4
HS-No.: 29420000

Storage: $2-8^{\circ}\text{C}$

Danger
H301
P280-P301+P310



Melting point $175 - 180^{\circ}\text{C}$

Specification:

Assay (TLC) approx. 97 %

Order-No.	Quantity
A7730,0005	5 mg
A7730,0025	25 mg

Comment: Myriocin is produced by the fungus *Mycelia sterilia*. This fungal antibiotic is an atypical amino acid, showing several biological effects: it is an immunomodulator, serine-palmitoyltransferase inhibitor and an inducer of apoptosis. By inhibiting the serine-palmitoyltransferase, which catalysis the first step in the sphingosine biosynthesis, cells may be depleted of sphingolipids. Myriocin is slightly soluble in DMSO and alcohols. It is insoluble in water and most organic solvents.

Myristic acid isopropyl ester see Isopropyl myristate pure Ph. Eur. Page 465
Myrtilin see Delphinidin-3-glucoside chloride HPLC grade Page 262
NaBr see Sodium bromide Page 724
NaCl see Sodium chloride Page 726
 Na_2CO_3 see Sodium carbonate anhydrous Page 724
 $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ see Sodium carbonate decahydrate Page 725

NAD

B

β -Nicotinamide adenine dinucleotide

$\text{C}_{21}\text{H}_{27}\text{N}_7\text{O}_{14}\text{P}_2$
 $M = 663,43$ g/mol
CAS-No.: 53-84-9
HS-No.: 29349990
EC-No.: 200-184-4

Storage: -20°C
LGK: 10 - 13

electrostatic

Specification:

Assay (enzym.) min. 97 %
Water (K.F.) max. 10.0 %

UV Absorption
A250/A260 (pH 7.5) ... 0.83 $\pm$ 0.01
A280/A260 (pH 7.5) ... 0.20 $\pm$ 0.01

Order-No.	Quantity
A1124,0001	1 g
A1124,0005	5 g
A1124,0010	10 g
A1124,0025	25 g

Literature: (1) Kobayashi, K. *et al.* (1989) *J. Biol. Chem.* **264**, 3200-3205

Structure and properties of Malic enzyme from *Bacillus stearothermophilus*.

Comment: Composition of the reaction buffer for the oxidation of malate: 100 mM Tris HCl (pH 8), 10 mM L-Malate, 0.5 mM NAD, 20 mM KCl and 1 mM MnCl_2 .

Thio-NAD

B

Thionicotinamide adenine dinucleotide,
Thionicotinamide-DPN

$C_{21}H_{27}N_7O_{13}SP_2$
 $M = 649.49$ g/mol
CAS-No.: 4090-29-3
HS-No.: 29349990
EC-No.: 200-184-4

Storage: -20°C

Specification:

Assay (enzym.) min. 92 %
Water (K.F.) max. 10 %

UV absorption
A250/A260 (pH 7.5) ... 0.89 ± 0.03
A280/A260 (pH 7.5) ... 0.36 ± 0.02

Order-No.	Quantity
A5258,0010	10 mg
A5258,0025	25 mg
A5258,0100	100 mg

NADH disodium salt

B

β -Nicotinamide adenine dinucleotide
reduced disodium salt

$C_{21}H_{27}N_7Na_2O_{14}P_2$
 $M = 709.41$ g/mol
CAS-No.: 606-68-8
HS-No.: 29349990
EC-No.: 210-123-3

Storage: -20°C
LGK: 10 - 13

electrostatic

Specification:

Assay (enzym.) min. 97 %
Water (K.F.) max. 8.0 %

UV Absorption
A250/A260 0.82 ± 0.03
A280/A260 0.23 ± 0.02

Order-No.	Quantity
A1393,0001	1 g
A1393,0005	5 g
A1393,0010	10 g

Literature: (1) Kobayashi, K. *et al.* (1989) *J. Biol. Chem.* **264**, 3200-3205

Structure and properties of malic enzyme from *Bacillus stearothermophilus*.

Comment: Composition of the buffer for the reduction of oxaloacetate: 30 mM potassium phosphate pH 7.5, 0.5 mM oxaloacetate, 0.1 mM NADH, 20 mM KCl, 5 mM $MgCl_2$.
Composition of the buffer for the reduction of pyruvate: 100 mM MOPS pH 6.1, 10 mM Na-pyruvate, 100 mM Na_2CO_3 , 0.1 mM NADH, 5 mM $MgCl_2$.

NADP sodium salt

B

β -Nicotinamide adenine dinucleotide
phosphate sodium salt

$C_{21}H_{27}N_7NaO_{17}P_3$
 $M = 765.39$ g/mol
CAS-No.: 1184-16-3
HS-No.: 29349990
EC-No.: 214-664-6

Storage: -20°C
LGK: 10 - 13

Specification:

Assay (enzym.) min. 97 %
Water (K.F.) max. 6.0 %

UV Absorption
A250/A260 (pH 7.5) ... 0.83 ± 0.03
A280/A260 (pH 7.5) ... 0.21 ± 0.02

Order-No.	Quantity
A1394,0250	250 mg
A1394,0001	1 g
A1394,0005	5 g

Comment: An aqueous solution (pH 2-6) is stable at +4°C for approx. 4 weeks.

NADPH tetrasodium salt

B

β -Nicotinamide adenine dinucleotide
phosphate reduced tetrasodium salt

$C_{21}H_{26}N_7Na_4O_{17}P_3$
 $M = 833.35$ g/mol
CAS-No.: 2646-71-1
HS-No.: 29349990
EC-No.: 220-163-3

Storage: -20°C
protected from light
LGK: 10 - 13

Specification:

Assay (enzym.) min. 96 %
Water (K.F.) max. 8.0 %

UV Absorption
A340/A260 0.43 ± 0.01

Order-No.	Quantity
A1395,0100	100 mg
A1395,0500	500 mg
A1395,0001	1 g

NaF see Sodium fluoride Page 733

$NaHCO_3$ see Sodium hydrogen carbonate Page 734

$NaH_2PO_4 \cdot 2H_2O$ see Sodium dihydrogen phosphate dihydrate Page 730

$NaH_2PO_4 \cdot H_2O$ see Sodium dihydrogen phosphate monohydrate Page 731

Na_2HPO_4 see *di*-Sodium hydrogen phosphate anhydrous Page 735

$Na_2HPO_4 \cdot 2H_2O$ see *di*-Sodium hydrogen phosphate dihydrate Page 735

NaI see Sodium iodide Page 745

Nalidixic acid BioChemica

B

1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridine-4-one-3-carboxylic acid

$C_{12}H_{12}N_2O_3$
 $M = 232.24$ g/mol
 CAS-No.: 389-08-2
 HS-No.: 29339980
 EC-No.: 206-864-7

Storage: RT
 protected from light
 LGK: 10 - 13

WGK: 3*
 Danger
 H334
 P342+P311-P261



Melting point 225 - 230°C

Specification:

Assay (titr) min. 99 %
 Loss on drying max. 0.5 %
 Solubility (2 %; $CHCl_3$) clear
 Sulfated ash max. 0.1 %

Order-No.	Quantity
A1894,0010	10 g
A1894,0025	25 g
A1894,0100	100 g

Literature: (1) Pedrini, A.M. (1979) 'Nalidixic Acid' in *Antibiotics V-1*, Page 154-175 (F.E. Hahn ed.) Springer-Verlag Berlin, Heidelberg, New York.

Comment: Nalidixic acid is active against gram negative cocci and bacteria. Resistance show gram positive organism, mycobacteria, fungi and viruses. It specifically inhibits the DNA replication in prokaryotes, with exception of some bacteriophages.

Stability: The crystalline substance is not soluble in the acidic pH-range or in alcohol, whereas it is readily soluble in basic aqueous solvents and in polar organic solvents (e. g. chloroform, toluene). To prepare a stock solution dissolve 10 mg/ml of nalidixic acid in 0.1 N NaOH and adjust the pH to 8.5. The solution is stable for one month. Nalidixic acid is heat stable and can be sterilized.

Nalidixic acid sodium salt BioChemica

B

$C_{12}H_{11}N_2NaO_3$
 $M = 254.22$ g/mol
 CAS-No.: 3374-05-8
 HS-No.: 29339980
 EC-No.: 222-159-7

Storage: 2-8°C
 protected from light
 LGK: 10 - 13

Danger
 H334-H317
 P280-P308+P313-P260

**Specification:**

Assay (UV) min. 98 %
 Heavy metals max. 0.002 %
 Identity (IR) complies
 Loss on drying max. 5.5 - 7.0 %

Related subst. max. 0.1 %
 pH (5 %; H_2O) 9.5 - 11.0

Order-No.	Quantity
A4928,0001	1 g
A4928,0005	5 g
A4928,0025	25 g

NANA see Sialic acid BioChemica Page 711

$NaNO_2$ see Sodium nitrite Page 747

$NaNO_3$ see Sodium nitrate Page 746

$NaOCl$ see Sodium hypochlorite - Solutions Page 745

$NaOH$ see Sodium hydroxide - Solutions (concentrations: ≥ 5 %) Page 738

Naphthalene for synthesis

C

Boiling point 218°C
 Melting point 79 - 82°C

$C_{10}H_8$
 $M = 128.16$ g/mol
 CAS-No.: 91-20-3
 HS-No.: 29029000
 EC-No.: 202-049-5

Storage: RT
 LGK: 4.1 B
 Disposal: 3

Class / PG: 4.1/III
 UN1334
 WGK: 2
 Warning
 H410-H350-H302
 P273-P281-P308+P313

**Specification:**

Assay (HPLC) min. 99 %

Order-No.	Quantity
A1547,0250	250 g
A1547,0500	500 g
A1547,1000	1 kg
A1547,10006	6 x 1 kg

Naphthamine G see Titan yellow (C.I. 19540) Page 818

Naphthene see Cyclohexane Page 250

Naphthol AS acetate BioChemica

B

$C_{19}H_{15}NO_3$
 $M = 305.34$ g/mol
 CAS-No.: 1163-67-3
 HS-No.: 29242998
 EC-No.: 214-608-0

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

Warning
 H319-H335-H315
 P305+P351+P338-P261

**Specification:**

Assay min. 99 %
 Solubility (1 %; MeOH) clear
 Free naphthol max. 0.01 %

Order-No.	Quantity
A3115,0001	1 g
A3115,0005	5 g

Naphthol AS-BI phosphate BioChemica

B

$C_{18}H_{15}BrNO_6P$
 $M = 452.20$ g/mol
CAS-No.: 1919-91-1
HS-No.: 29242998
EC-No.: 217-645-0

Storage: 2-8°C
protected from light
LGK: 10 - 13

Warning
H335-H315-H319
P261-P305+P351+P338



Specification:

Assay (TLC) min. 95 %
Solubility (1 %; MeOH) clear, slightly yellowish

Order-No.	Quantity
A1889,0250	250 mg
A1889,0001	1 g
A1889,0005	5 g

Literature: (1) Guilbault, G.G. (1976) *Methods Enzymol.* **44**, 579-633 (S. 627)
(2) Dolbeare, F. (1979) *J. Histochem. Cytochem.* **27**, 1644-1646
(3) Webber, D.M. et al. (1979) *Histochem. J.* **20**, 269-275

Enzyme electrodes and solid surface fluorescence methods.
Dynamic assay of enzyme activities in single cells by flow cytometry.
A quantitative cytochemical assay for osteoclast acid phosphatase activity in fetal rat calvaria.

Comment: Naphthol-AS-BI-phosphate is a substrate for alkaline (1) and acidic (2, 3) phosphatase. After hydrolysis of the non-fluorescent Naphthol-AS-BI phosphate by the enzyme the resulting Naphthol-AS-BI can be measured by fluorescence methods. Stock solution are prepared as a 0.5 mM solutions in 200 mM sodium acetate (pH 5.0; ref. 2) or 10 mM solution in dimethylformamide (3).

Naphthol AS chloroacetate BioChemica

B

3-Chloroacetoxy-2-naphthoic acid
anilide

$C_{19}H_{14}ClNO_3$
 $M = 339.78$ g/mol
HS-No.: 29242998
EC-No.: 283-009-4

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Melting point 168 - 170°C

Specification:

Assay min. 98 %
Solubility (1 %; Acetone) clear
Free naphthol max. 0.01 %

Order-No.	Quantity
A3118,0001	1 g
A3118,0005	5 g

Naphthol AS-D acetate BioChemica

B

Melting point 163 - 165°C

$C_{20}H_{17}NO_3$
 $M = 319.36$ g/mol
CAS-No.: 528-66-5
HS-No.: 29242998
EC-No.: 208-439-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %
Solubility (1 %; MeOH) clear
Free naphthol max. 0.01 %

Order-No.	Quantity
A3272,0001	1 g
A3272,0005	5 g

Naphthol AS-D chloroacetate BioChemica

B

$C_{20}H_{16}ClNO_3$
 $M = 353.81$ g/mol
CAS-No.: 35245-26-2
HS-No.: 29242998
EC-No.: 252-463-5

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 97 %
Solubility (1 %; Acetone) clear
Free naphthol max. 0.01 %

Order-No.	Quantity
A4454,0001	1 g
A4454,0005	5 g

Naphthol AS-D phosphate BioChemica

B

$C_{19}H_{16}NO_5P$
 $M = 357.36$ g/mol
CAS-No.: 27580-13-8
HS-No.: 29242998

Storage: 2-8°C

Specification:

Assay (titr.) min. 98 %
Solubility (1 %; MeOH) clear
Free naphthol max. 0.1 %

Order-No.	Quantity
A4610,0250	250 mg
A4610,0001	1 g

Naphthol AS-E acetate BioChemica

B

$C_{19}H_{14}ClNO_3$
 $M = 339.78$ g/mol
CAS-No.: 84100-15-2
HS-No.: 29242998
EC-No.: 282-097-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %
Solubility (1 %; MeOH) clear
Free naphthol max. 0.01 %

Order-No.	Quantity
A3280,0250	250 mg
A3280,0001	1 g

Naphthol AS-MX acetate *BioChemica*

B

$C_{21}H_{19}NO_3$
 $M = 333.39$ g/mol
CAS-No.: 4569-00-0
HS-No.: 29242998
EC-No.: 224-950-2

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %
Solubility (1 %; MeOH) clear
Free naphthol max. 0.01 %

Order-No.	Quantity
A4015,0001	1 g
A4015,0005	5 g

Naphthol AS-MX phosphate *BioChemica*

B

$C_{19}H_{18}NO_5P$
 $M = 371.33$ g/mol
CAS-No.: 1596-56-1
HS-No.: 29242998
EC-No.: 216-480-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Warning
H319-H315-H335
P305+P351+P338-P261


Specification:

Assay (TLC) min. 98 %
Solubility (1 %; MeOH) clear
Free naphthol max. 0.01 %

Order-No.	Quantity
A3291,0250	250 mg
A3291,0001	1 g
A3291,0005	5 g

Naphthol blue black B see Amido black 10 B (C.I. 20470) Page 84

β-Naphthol violet

C

$C_{16}H_9N_3Na_2O_9S_2$
 $M = 497.37$ g/mol
CAS-No.: 76233-81-3
HS-No.: 29242998

Storage: RT

Specification:

Transition interval pH 10.6 - 12.0 (orange yellow-purple)

Order-No.	Quantity
A4466,0005	5 g
A4466,0010	10 g

1-Naphthyl acetate *BioChemica*

B

Acetic acid 2-naphthyl ester

Melting point 44 - 49°C

$C_{12}H_{10}O_2$
 $M = 186.21$ g/mol
CAS-No.: 830-81-9
HS-No.: 29153900
EC-No.: 212-599-8

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 3*
Danger
H318
P280-P305+P351+P338


Specification:

Assay min. 99 %
Free naphthol max. 0.1 %

Order-No.	Quantity
A1563,0025	25 g
A1563,0100	100 g

Literature: (1) Gomori, G. (1957) *Methods Enzymol.* **4**, 381-391
(2) Mastropaolo, W. & Youmo, J. (1981) *Anal. Biochem.* **15**, 188-193

Histochemical methods for enzymes.
An ultraviolet spectrophotometric assay for α-Naphthyl acetate and α-Naphthyl butyrate esterases.

2-Naphthyl acetate *BioChemica*

B

Acetic acid 2-naphthyl ester

Melting point 69 - 71°C

$C_{12}H_{10}O_2$
 $M = 186.21$ g/mol
CAS-No.: 1523-11-1
HS-No.: 29153900
EC-No.: 216-194-7

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 3*
Danger
H318
P280-P305+P351+P338


Specification:

Assay min. 99 %
Free naphthol max. 0.1 %

Order-No.	Quantity
A1816,0005	5 g
A1816,0025	25 g

Literature: (1) Kaneko, A. *et al.* (1979) *Biochim. Biophys. Acta* **582**, 185-195

Induction of a microsomal butyryl esterase in rat liver by phenobarbital treatment.

Comment: The unspecific Esterase L-1 releases 2-Naphthol from 2-Naphthol acetate which can be measured spectrophotometrically at 328 nm (1).

1-Naphthyl butyrate BioChemica

B

Butyric acid 1-naphthyl ester

 $C_{14}H_{14}O_2$

Storage: RT

 $M = 214.27$ g/mol

LGK: 10 - 13

Density (d 20°C/4°C) .. 1.091

CAS-No.: 3121-70-8

n 20°C/D 1.572

HS-No.: 29156019

EC-No.: 221-500-7

Specification:

Assay (HPLC) min. 99 %

Free naphthol max. 0.05 %

Order-No.

A3155,0005

Quantity

5 g

A3155,0010

10 g

N-(1-Naphthyl)ethylenediamine dihydrochloride p. A.

C

NEDD

 $C_{12}H_{16}Cl_2N_2$

Storage: RT

 $M = 259.18$ g/mol

LGK: 10 - 13

CAS-No.: 1465-25-4

Disposal: 3

HS-No.: 29215990

EC-No.: 215-981-2

WGK: 3

Warning

H315-H319

P260-P302+P352-P305+P351+P338


Specification:

Assay (titr.) min. 98 %

Loss on drying max. 5 %

Sensitivity for Sulfanilamide complies

1-Naphthylamine max. 0.1 %

2-Naphthylamine max. 0.01 %

Order-No.

A2782,0005

Quantity

5 g

A2782,0025

25 g

A2782,0100

100 g

1-Naphthyl laurate BioChemica

B

 $C_{22}H_{40}O_2$

Storage: RT

 $M = 326.48$ g/mol

CAS-No.: 4227-99-0

HS-No.: 29161500

Specification:

Assay min. 98 %

Solubility (1 %; CH_2Cl_2) clear

Free 1-Naphthol max. 0.1 %

Order-No.

A4662,0001

Quantity

1 g

A4662,0005

5 g

1-Naphthyl phosphate monosodium salt monohydrate BioChemica

B

Sodium 1-naphthyl phosphate,
Phosphoric acid 1-naphthyl ester
monosodium salt

 $C_{10}H_9NaO_4P \cdot H_2O$

Storage: 2-8°C

 $M = 264.15$ g/mol

LGK: 10 - 13

CAS-No.: 81012-89-7

Disposal: 3

HS-No.: 29199000

EC-No.: 214-502-4

Warning

H319-H335-H335

P261-P305+P351+P338


Specification:

Assay min. 98 %

pH (5 %; H_2O) 3.5 - 4.5

Free naphthol max. 0.1 %

Solubility (5 %; H_2O) clear colorless

Order-No.

A1823,0001

Quantity

1 g

A1823,0005

5 g

Literature: (1) Gomori, G. (1957) *Methods Enzymol.* **4**, 381-391
(2) Torriani, A. (1968) *Methods Enzymol.* **12 B**, 212-218

Histochemical methods for enzymes.
Alkaline phosphatase of *E. coli*.

2-Naphthyl phosphate monosodium salt BioChemica

B

Phosphoric acid 2-naphthyl ester
monosodium salt, Monosodium 2-
naphthyl phosphate

 $C_{10}H_9NaO_4P$

Storage: 2-8°C

 $M = 246.14$ g/mol

LGK: 10 - 13

CAS-No.: 14463-68-4

Disposal: 3

HS-No.: 29199000

EC-No.: 236-011-4

Warning

H319-H335-H315

P261-P305+P351+P338


Specification:

Assay min. 98 %

Free naphthol max. 0.1 %

Loss on drying max. 15 %

Order-No.

A2191,0001

Quantity

1 g

A2191,0005

5 g

Literature: (1) Moss, D. W. (1960) *Biochem. J.* **76**, 32P

Kinetics of phosphatase action on Naphthyl phosphates, determined by a highly sensitive spectrofluorimetric technique.

N¹-(2-Naphthyl)-L-pyrogutamic acid see L-Pyrogutamic acid β-naphthylamide Page 679
Na₃PO₄ · 12H₂O see tri-Sodium phosphate dodecahydrate Page 749

Naringenin HPLC grade

B

Naringetol, Pelarginadon
from *Citrus paradisi*

C₁₅H₁₂O₅
M = 272.26 g/mol
CAS-No.: 480-41-1
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.

A5307,0020

A5307,0050

Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Naringenin-7-rhamnoglycoside, Aurantiin see Naringin HPLC grade Page 562
Naringetol see Naringenin HPLC grade Page 562

Naringin HPLC grade

B

Naringenin-7-rhamnoglycoside,
Aurantiin
from *Citrus paradisi*

C₂₇H₃₂O₁₄
M = 580.54 g/mol
CAS-No.: 10236-47-2
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.

A5308,0020

A5308,0050

Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Na₂S₂O₃ · 5H₂O see Sodium thiosulfate pentahydrate Page 756
Na₂SO₃ see Sodium sulfite anhydrous Page 752
Na₂SO₄ see Sodium sulfate anhydrous powdered Page 751
Na₂SO₄ · 10H₂O see Sodium sulfate decahydrate Page 752
Na₂SeO₃ see Sodium selenite anhydrous pure Page 751
Natronwasser Glas see Sodium silicate - Solution pure Page 751
Natural Black 1 see Hematoxylin monohydrate (C.I. 75290) Microscopy grade Page 400

NBT BioChemica

B

Nitro blue tetrazolium chloride, Nitro-BT

C₄₀H₃₀Cl₂N₁₀O₆
M = 817.65 g/mol
CAS-No.: 298-83-9
HS-No.: 29339980
EC-No.: 206-067-4

Storage: 2-8°C
protected from light
LGK: 10 - 13

Specification:

Assay (photometr.) min. 99 %
Solubility (1 %; hot MeOH) . clear, yellow
Sulfated ash max. 0.05 %
Water (K.F.) max. 3 %

Order-No.

A1243,0500

A1243,0001

A1243,0005

Quantity

500 mg

1 g

5 g

Literature: (1) Negi, D.S. & Stephens, R.J. (1977) *J. Histochem. Cytochem.* **25**, 149-154

(2) Vila, V. *et al.* (1984) *Clin. Chim. Acta* **138**, 215-219

(3) Lokuta, M.A. *et al.* (1997) *BioTechniques* **22**, 841-844

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Supplement 66, Page 10.8.17. Greene Publishing & Wiley-Interscience, New York.

(5) Jekely, G. & Arendt, D. (2007) *BioTechniques* **42**, 751-755

An improved method for the histochemical localization of Glucose-6 phosphate dehydrogenase in animal and plant tissue.

Isolation of human fibrinogen using nitro blue tetrazolium (NBT).

Spectrophotometric determination of the oxidative metabolism.

Cellular resolution expression profiling using confocal detection of NBT/BCIP precipitate by reflection microscopy.

Comment: As a histochemical assay, glucose-6-phosphate dehydrogenase oxidizes NADPH and reduces thereby the hydrogen acceptor NBT. This results in the precipitation of colored, insoluble formazan at the site of enzyme activity (1). Store a stock solution (50 mg/ml or 75 mg/ml in 70 % aqueous DMF) at -20°C or +4°C for up to one year (4).

A completely different application of NBT is the isolation of fibrinogen from plasma samples. Therefore, plasma and NBT (1 g/L) are mixed in a ratio of 1 : 1 and stirred for 5 - 10 minutes at room temperature. A precipitate is formed, that contains very pure fibrinogen (2).

The most popular application of NBT is the determination of the activity of alkaline phosphatase in combination with BCIP (see A1117). This reaction is based on the oxidation of indoxyl to the insoluble, blue indigo by NBT (4).

NCTC 135 - Medium

HS-No.: 38210000

Storage: 2-8°C

LGK: 10 - 13

hygroscopic

P262

NCTC 135 - Medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.

A2020,1000

A2020,5000

A2020,9010

A2020,9050

Quantity

1 L

5 L

10 L

50 L

NCTC 135 - Medium

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1528,1000	1 L
A1528,5000	5 L
A1528,9010	10 L
A1528,9050	50 L

NDSB-201 see 3-(1-Pyridino)-1-propanesulfonate Page 677
Nebramycin II see Apramycin sulfate BioChemica Page 116
NEDD see N-(1-Naphthyl)ethylenediamine dihydrochloride p. A. Page 561
NEM see N-Ethylmaleimide BioChemica Page 343

Neocuproine hydrochloride monohydrate BioChemica

2,9-Dimethyl-1,10-phenanthroline
hydrochloride

$C_{14}H_{12}N_2 \cdot HCl \cdot H_2O$
 $M = 262.73 \text{ g/mol}$
CAS-No.: 303136-82-5
HS-No.: 29339980
EC-No.: 230-732-8

Storage: RT WGK: 3

Specification:

Assay (titr.) min. 99 %
Solubility (25 mg/ml H_2O) ... clear

Order-No.	Quantity
A4274,0005	5 g
A4274,0010	10 g
A4274,0025	25 g

Neolinarin see Pectolinarin HPLC grade Page 601

Neomycin sulfate

$C_{23}H_{46}N_6O_{13} \cdot 3H_2SO_4$
 $M = 908.90 \text{ g/mol}$
CAS-No.: 1405-10-3
HS-No.: 29419000
EC-No.: 215-773-1

Storage: RT
protected from light
LGK: 10 - 13

Neomycin sulfate BioChemica

Specification:

Activity min. 680 I.U./mg Loss on drying max. 8 %
 $\alpha 20^\circ C/D; 10 \%, H_2O$ $+53^\circ - +59^\circ$
Sulfated ash max. 1 %
pH (1 %; H_2O) 5.0 - 7.5 (20°C)

Order-No.	Quantity
A2198,0010	10 g
A2198,0025	25 g
A2198,0100	100 g

Literature: (1) Carney, D.H. *et al.* (1985) *Cell* **42**, 479-488

- (2) Nakashima, S. *et al.* (1987) *Biochem. Biophys. Res. Com.* **146**, 820-826
- (3) Liscovitch, M. *et al.* (1991) *Biochem. J.* **279**, 319-321
- (4) Von Ahsen, U. *et al.* (1991) *Nature* **353**, 368-370
- (5) Von Ahsen, U. & Noller, H.F. (1993) *Science* **260**, 1500-1503
- (6) Zapp, M.L. *et al.* (1993) *Cell* **74**, 969-978

Phosphoinositides in mitogenesis: Neomycin inhibits Thrombin-stimulated phosphoinositide turnover and initiation of cell proliferation.
Neomycin is a potent agent for arachidonic acid release in human platelets.
Inhibition of neural phospholipase activity by aminoglycoside antibiotics.
Antibiotic inhibition of group I ribozyme function.
Footprinting the sites of interaction of antibiotics with catalytic group I Intron RNA.
Small molecules that selectively block RNA binding of HIV-1 Rev protein inhibit Rev function and viral production.

Neomycin sulfate pure Ph. Eur.

Specification:

Activity (anhydrous basis) ... min. 680 I.U./mg Related subst. complies
 $\alpha 20^\circ C/D; 10 \%, H_2O$ $+53.5^\circ - +59.0^\circ$ Sulfated ash max. 1.0 %
Identity complies pH (1 %; H_2O) 5.0 - 7.5
Loss on drying max. 8.0 %

Sulfate (anhydrous subst.)
..... 27.0 - 31.0 %

Order-No.	Quantity
A7002,0025	25 g
A7002,0100	100 g
A7002,0250	250 g

Neosolaniol BioChemica



8-Hydroxydiacetoxyscirpenol
from *Fusarium* sp.

$C_{19}H_{26}O_8$
 $M = 382.4 \text{ g/mol}$
CAS-No.: 36519-25-2
HS-No.: 29329900

Storage: -20°C

Class / PG: 6.1/1
UN2811
Danger
H301
P280-P308+P313



Melting point 176 - 178°C

Specification:

Purity (TLC) single spot (Toluene: Ethylacetate: Acetic acid 6:3:1) Appearance slight yellow powder
Solubility (10 mg/ml Dichloromethane; DMSO; MeOH) clear, colorless

Order-No.	Quantity
A8621,0001	1 mg
A8621,0005	5 mg

♦ Attention: Please note that there is a second CAS No. 65041-92-1 for Neosolaniol.

recombinant Human Nerve growth Factor β see rHu NGF- β Page 564
recombinant Mouse Nerve Growth Factor- β see rM NGF- β Page 564
Neococcin see Cochenille Red (C.I. 16255) Page 220
recombinant Human Neuregulin-1 see rHu NRG-1 bioconfident grade Page 578
recombinant Human Neuregulin-1 see rHu NRG-1 Page 578
Neuron-specific Enolase see Enolase, Neuron-specific human Page 327
recombinant Human Neurotrophin-3 see rHu NT-3 Page 578

Neutralizing - Solution Molecular biology grade

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

NaCl 87.66 g/L
Tris 121.14 g/L

Specification:

DNases/RNases/Proteases
..... not detectable
pH (20°C) 7.4 ± 0.1

Order-No.	Quantity
A0684,0500	500 ml
A0684,1000	1 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; page 9.38. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Neutral red (C.I. 50040)

C

Basic Red 5, Toluylene red

 $C_{15}H_{17}ClN_4$
 $M = 288.78$ g/mol
CAS-No.: 553-24-2
HS-No.: 32041300
EC-No.: 209-035-8

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point 290°C
Transition interval pH 6.8 - 8.0 (violet
- orange)

Specification:

Assay (photometr.) min. 75 %
 λ_{max} (50 % EtOH) 539 - 544 nm
E 1 %/1 cm, λ_{max} 1130 - 1525
Loss on drying max. 18 %

Order-No.	Quantity
A0683,0010	10 g
A0683,0025	25 g
A0683,0100	100 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Page 16.17.9-12 (Suppl. 43) Greene Publishing & Wiley-Interscience, New York.

Comment: The vaccinia-virus system is widely used to overexpress recombinant proteins. To identify virus-infected cells, living cells are stained with neutral red. Infected cells appear rounded, while dead cells appear as colorless "plaques" (1). Neutral red readily passes through many membranes. The cells are stained with 0.1 mg/ml neutral red (stock solution 10 mg/ml in water).

Neutral red - Solution

C

Ready-to-use indicator solution in 70 %
ethanol

HS-No.: 38220000
EC-No.: 209-035-8

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1993
Danger
H225
P210

Composition:

Neutral red (A0683) 0.3 %

Order-No.	Quantity
A2409,0100	100 ml
A2409,0500	500 ml

rHu NGF-β



B

recombinant Human Nerve growth
Factor β, NGFβ, beta-NGF
lyophilized without additives
from *E. coli*
 $M = 13.6$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin (LAL test) max. 0.1 EU/μg
Assay (HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8279,0005	5 μg
A8279,0020	20 μg
A8279,0100	100 μg

Comment: Human NGF β is a neurotrophic factor related to BDNF, NT-3 and NT-4. Human NGF β acts as a neurotrophic factor through its receptor β-NGFR, and is involved in the development and sustaining the sensory and sympathetic nervous systems. rHu NGF β also is also involved in the growth and differentiation of B lymphocytes and B-cell survival. Human NGF β is a noncovalently disulfide-linked homodimer, consisting of 121 amino acids with a molecular weight of two 13.6 kDa polypeptide monomers.

rM NGF-β



B

recombinant Mouse Nerve Growth
Factor-β
lyophilized without additives
from *E. coli*
 $M = 13.4$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8272,0005	5 μg
A8272,0025	25 μg
A8272,0100	100 μg

Comment: Nerve Growth Factor is the first of a series of neurotrophic factors that were found to influence the growth and differentiation of sympathetic and sensory neurons. It is comprised of α-, β- and γ-subunits. The β-subunit is responsible for its growth stimulating activity. The synthesis of NGF in astrocytes is enhanced by various other cytokines: IL-1, TNF-α, PDGF and TGF-β. Mouse NGF-β is a noncovalently disulfide-linked homodimer consisting of two 13.4 kDa polypeptide monomers (240 total amino acid residues). The three disulfide bonds are required for biological activity.

NGFB see rHu NGF-β Page 564
 NH₃ see Ammonia - Solutions ≥ 25 % Page 90
 (NH₄)₂Fe(SO₄)₂ · 6H₂O see Ammonium iron(II) sulfate hexahydrate Page 97
 (NH₄)₂S₂O₈ see Ammonium thiosulfate pure Page 104
 (NH₄)₂Mo₇O₂₄ · 4H₂O see Ammonium molybdate tetrahydrate Page 100
 NH₄Al(SO₄)₃ · 12H₂O see Aluminium ammonium sulfate dodecahydrate pure USP Page 82
 NH₄SCN see Ammonium thiocyanate Page 103
 NHS-LC-Biotin see Biotinamidohexanoic acid N-hydroxysuccinimide ester Page 141
 NHS-LC-LC-Biotin see Biotinamidohexanoyl-6-aminohexanoic acid N-hydroxysuccinimide ester Page 141
 NHS-PEO3-Biotin see 9-Biotinylamino-4,7-dioxanonoic acid N-hydroxysuccinimide ester Page 142
 NHS-PEO4-Biotin see 12-Biotinylamino-4,7,10-trioxadodecanoic acid N-hydroxysuccinimide ester Page 143
 NHS-PEO5-Biotin see 15-Biotinylamino-4,7,10,13-tetraoxapentadecanoic acid N-hydroxysuccinimide ester Page 143
 Niacin see Nicotinic acid pure Ph. Eur., USP Page 567
 Niacinamide see Nicotinamide pure Ph. Eur., USP Page 566

Nickel(II) chloride hexahydrate

$\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$	$\text{Cl}_2\text{Ni} \cdot 6\text{H}_2\text{O}$	Storage: RT	Class / PG: 6.1/III
	$M = 237.71 \text{ g/mol}$	LGK: 6.1 B	UN3288
Melting point 140°C	CAS-No.: 7791-20-0	Disposal: 15	WGK: 3
Solubility (20°C) 2540 g/L (H ₂ O)	HS-No.: 28273500		Danger
	EC-No.: 231-743-0		H360D-H372-H341-H317-H350i-H331- H334-H315-H410-H301 P308+P313-P302+P352-P304+P340- P273-P201



Nickel(II)-chloride hexahydrate *BioChemica*

Specification:			Order-No.	Quantity
Assay (titr.) min. 98 %	Co max. 0.002 %	Zn max. 0.001 %	A3917,0100	100 g
Insoluble matter complies	Cu max. 0.001 %		A3917,0250	250 g
pH (5 %; H ₂ O; 20°C) 4.5 - 7.0	Fe max. 0.002 %		A3917,0500	500 g
Sulfate max. 0.005 %	Pb max. 0.001 %			

Nickel(II) chloride hexahydrate p. A.

Specification:		Order-No.	Quantity
Assay (titr.) min. 98 %	Fe max. 0.002 %	A2199,0100	100 g
Sulfate max. 0.005 %	Mg max. 0.001 %	A2199,0250	250 g
Ca max. 0.005 %	Pb max. 0.001 %	A2199,0500	500 g
Cd max. 0.001 %	Zn max. 0.001 %	A2199,1000	1 kg
Co max. 0.002 %		A2199,10006	6 x 1 kg
Cu max. 0.001 %			

Nickel(II) chloride hexahydrate pure

Specification:	Order-No.	Quantity
Assay (titr.) min. 97 %	A3520,0250	250 g
Sulfate max. 0.01 %	A3520,0500	500 g
Co max. 0.01 %	A3520,1000	1 kg
Fe max. 0.005 %	A3520,10006	6 x 1 kg
Pb max. 0.005 %	A3520,5000	5 kg
Zn max. 0.05 %		

Nickel(II) nitrate hexahydrate

$\text{Ni(NO}_3)_2 \cdot 6\text{H}_2\text{O}$	$\text{N}_2\text{NiO}_6 \cdot 6\text{H}_2\text{O}$	Storage: RT	Class / PG: 5.1/III
	$M = 290.81 \text{ g/mol}$	LGK: 5.1 B	UN2725
Melting range 56 - 57°C	CAS-No.: 13478-00-7	Disposal: 22	WGK: 3
Solubility (20°C) 2380 g/L (H ₂ O)	HS-No.: 28342920		Danger
	EC-No.: 236-068-5		H318-H410-H332-H350i-H317-H360D- H272-H315-H341-H302-H372 P302+P352-P305+P351+P338-P201- P304+P341-P308+P313-P281



Nickel(II) nitrate hexahydrate p. A.

Specification:		Order-No.	Quantity
Assay (titr., calc. on dried substance) min. 99 %	Cd max. 0.0001 %	A1055,0100	100 g
Chloride max. 0.005 %	Co max. 0.1 %	A1055,0250	250 g
Sulfate max. 0.001 %	Cr max. 0.0001 %	A1055,0500	500 g
As max. 0.0005 %	Cu max. 0.001 %	A1055,1000	1 kg
Ca max. 0.001 %	Fe max. 0.001 %	A1055,10006	6 x 1 kg
	Mg max. 0.001 %		
	Pb max. 0.0001 %		
	Zn max. 0.001 %		

Nickel(II) nitrate hexahydrate pure

C

Specification:

Assay (titr., calc. on dried substance)	Fe	max. 0.005 %
min. 98 %	Pb	max. 0.001 %
Chloride	Zn	max. 0.05 %
max. 0.01 %		
Sulfate		
max. 0.01 %		
Co		
max. 0.1 %		
Cu		
max. 0.005 %		

Order-No.**Quantity**

A3522,0250	250 g
A3522,0500	500 g
A3522,1000	1 kg
A3522,10006	6 x 1 kg
A3522,5000	5 kg

Nickel(II) sulfamate - Solution 11 % pure

C

HS-No.: 28429080

Storage: RT

Danger
H317-H318-H302-H351
P313-P280

**Specification:**

Assay	Fe	max. 0.0005 %
min. 11 %	Pb	max. 0.0005 %
Chloride	Zn	max. 0.0001 %
max. 0.01 %		
Sulfate		
max. 0.3 %		
As		
max. 0.0002 %		
Co		
max. 0.0001 %		

Order-No.**Quantity**

A4759,2500	2.5 L
A4759,25004	4 x 2.5 L
A4759,5000	5 L
A4759,9010	10 L

Nickel(II) sulfate hexahydrate $\text{NiSO}_4 \cdot 6\text{H}_2\text{O}$ $\text{NiO}_4\text{S} \cdot 6\text{H}_2\text{O}$

Storage: RT

Class / PG: 6.1/III

Melting point 53°C
Solubility (20°C) 625 g/L (H_2O)

$M = 262.86 \text{ g/mol}$
CAS-No.: 10101-97-0
HS-No.: 28332400
EC-No.: 232-104-9

LGK: 6.1B
Disposal: 15

UN3288
WGK: 3
Danger
H315-H334-H410-H341-H317-H302-
H350i-H372-H360D-H332
P280-P201-P342+P311-P273-
P308+P313-P302+P352

**Nickel(II) sulfate hexahydrate p. A.**

C

Specification:

Assay (titr.)	Cu	max. 0.002 %
min. 99 %	Fe	max. 0.005 %
pH (5 %; H_2O)	Pb	max. 0.002 %
4.0 - 6.0	Zn	max. 0.005 %
Chloride		
max. 0.005 %		
Co		
max. 0.001 %		
Cd		
max. 0.005 %		
Co		
max. 0.01 %		

Order-No.**Quantity**

A0827,0100	100 g
A0827,0250	250 g
A0827,0500	500 g
A0827,1000	1 kg
A0827,10006	6 x 1 kg

Nickel(II) sulfate hexahydrate pure

C

Specification:

Assay (titr.)	min. 98 %
Chloride	max. 0.005 %
Co	max. 0.05 %
Fe	max. 0.01 %
Pb	max. 0.005 %
Zn	max. 0.05 %

Order-No.**Quantity**

A3516,0250	250 g
A3516,0500	500 g
A3516,1000	1 kg
A3516,10006	6 x 1 kg
A3516,5000	5 kg

 $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$ see Nickel(II) chloride hexahydrate Page 565**Nicotinamide pure Ph. Eur., USP**

B

Nicotinic acid amide, Vitamin PP,

Niacinamide

 $\text{C}_6\text{H}_6\text{N}_2\text{O}$ $M = 122.13 \text{ g/mol}$

CAS-No.: 98-92-0

Solubility (25°C) 1000 g/L (H_2O)

HS-No.: 29362900

EC-No.: 202-713-4

Storage: RT

LGK: 10 - 13

Disposal: 3

WGK: 1

Warning

H319

P305+P351+P338

**Specification:**

Assay	Loss on drying	max. 0.5 %	Sulfated ash	max. 0.1 %
min. 98.5 - 101.0 %	Melting range	128 - 131°C	pH (5 %; H_2O ; 20°C)	
Assay (titr.)	Readily carbon. subst.	complies	6.0 - 7.5	
min. 99.0 - 101.0 %	Related subst.	complies	Organic volatile subst.	
Appearance of solution	Residual solvents	complies		
complies				
Heavy metals (as Pb)				
max. 0.003 %				
Identity				
complies				

Order-No.**Quantity**

A0959,0100	100 g
A0959,0250	250 g

 β -Nicotinamide adenine dinucleotide see NAD Page 556 β -Nicotinamide adenine dinucleotide phosphate reduced tetrasodium salt see NADPH tetrasodium salt Page 557 β -Nicotinamide adenine dinucleotide phosphate sodium salt see NADP sodium salt Page 557 β -Nicotinamide adenine dinucleotide reduced disodium salt see NADH disodium salt Page 557

Nicotinic acid pure Ph. Eur., USP

B

Vitamin B, Niacin, Pyridine 3-carboxylic acid

$C_6H_5NO_2$
 $M = 123.11$ g/mol
CAS-No.: 59-67-6
HS-No.: 29362900
EC-No.: 200-441-0

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1
Warning
H319
P305+P351+P338



Melting point 235°C (dec.)
Solubility (20°C) 18 g/L (H₂O)

Specification:

Assay (titr.) 99.5 - 100.5 %
Heavy metals (as Pb) max. 0.002 %
Identity complies

Loss on drying max. 1 %
Related subst. complies
Sulfated ash max. 0.1 %

Chloride max. 0.02 %
Sulfate max. 0.02 %

Order-No.
A0963,0100
A0963,0250

Quantity
100 g
250 g

Nicotinic acid amide see Nicotinamide pure Ph. Eur., USP Page 566

Nigericin sodium salt BioChemica

B

Antibiotic K178, Azalomycin M, Helixin C, Polyetherin A
from *Streptomyces hygroscopicus*

$C_{40}H_{67}NaO_{11}$
 $M = 746.94$ g/mol
CAS-No.: 28643-80-3
HS-No.: 29419000

Storage: -20°C

Class / PG: 6.1/III
UN3462
Danger
H319-H315-H301-H335
P301+P310-P261-P305+P351+P338



Melting point 261 - 265°C (dec.)

Specification:

Assay min. 98 %
Solubility (10 mg/ml Dichloromethane)
..... clear, colorless

Order-No.
A7671,0005
A7671,0010
A7671,0050

Quantity
5 mg
10 mg
50 mg

Nile blue A see Nile blue (C.I. 51180) Page 567

Nile blue (C.I. 51180)

B

Nile blue A, Nile blue hydrogen sulfate

$C_{40}H_{40}N_6O_6S$
 $M = 732.87$ g/mol
CAS-No.: 3625-57-8
HS-No.: 32041900
EC-No.: 222-832-5

Storage: RT
LGK: 10 - 13

WGK: 3*

Melting point > 300°C
Solubility (25°C) approx. 50 g/L (H₂O)

Specification:

Assay (photometr.) min. 90 %
 λ_{max} (50 % EtOH) 635 - 644 nm
Loss on drying max. 8 %

UV/VIS spectrum complies

Order-No.
A3918,0010
A3918,0025

Quantity
10 g
25 g

Literature: (1) Adkins, S. & Burmeister, M. (1996) *Anal. Biochem.* **240**, 17-23
(2) Chen, Q.-y. et al. (1999) *Analyst* **124**, 901-906

DNA staining in agarose gel during the gel run.
Interaction of Nile Blue with DNA and its application to nucleic acids assay.

Comment: At the standard DNA electrophoresis conditions of pH 8, Nile blue is present in its cationic form, staining the negatively charged DNA as a visible blue band. The staining is achieved by intercalation (2). The advantage of Nile blue staining is the visible blue color which allows to observe the migration of stained nucleic acids during gel electrophoresis. In addition, the dye is photostable and less toxic than ethidium bromide. Nile blue is added to the running buffer and the gel solutions at a concentration of 1 µg/ml. At this concentration the migration behaviour of DNA (0.5 - 2.5 µg Lambda-DNA) in the gel is hardly influenced (comparable to Pyronin Y and ethidium bromide). At concentrations above 3 µg/ml, Nile blue DNA migrates more slowly. The detection limit of DNA is 40 ng during running the gel and 4 ng in a dried gel. The sensitivity corresponds to that of ethidium bromide staining. Enzymatic reactions are not inhibited. The only disadvantage: Nile blue absorbs light of the wave length 260 nm and therefore an exact determination of the DNA concentration by UV-spectrophotometry is impossible.

Nile blue hydrogen sulfate see Nile blue (C.I. 51180) Page 567

Ninhydrin p. A.

B

Trioxohydrindene hydrate, 1,2,3-Indantrione hydrate

$C_9H_6O_4$
 $M = 178.14$ g/mol
CAS-No.: 485-47-2
HS-No.: 29143900
EC-No.: 207-618-1

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3*
Warning
H302-H319-H315
P302+P352-P305+P351+P338



Specification:

Assay min. 99 %
Loss on drying max. 11 %
Sulfated ash max. 0.1 %
pH (1 %; H₂O; 20°C) 4.6 - 5.6

Order-No.
A0902,0010
A0902,0025
A0902,0100
A0902,0500

Quantity
10 g
25 g
100 g
500 g

Ni(NO₃)₂ · 6H₂O see Nickel(II) nitrate hexahydrate Page 565

NIPHEGAL see 2-Nitrophenyl-β-D-galactopyranoside BioChemica Page 573

NiSO₄ · 6H₂O see Nickel(II) sulfate hexahydrate Page 566

Nitric acid 69 % p. A.

C

Boiling point (69 %) .. 122°C (dec.)
 Density (d 20°C/4°C) .. 1.41 (69 %)
 Melting point (69 %) .. -41°C

HNO₃
M = 63.01 g/mol
 CAS-No.: 7697-37-2
 HS-No.: 28080000
 EC-No.: 231-714-2

Storage: RT
 LGK: 5.1 B
 Disposal: 12

Class / PG: 8(5.1)/II
 UN2031
 WGK: 1
 Danger
 H314-H272-H290
 P280-P301+P330+P331-
 P305+P351+P338-P260

**Specification:**

Assay (titr.) 69 - 72 %
 Total Chlorine max. 0.00005 %
 Total P max. 0.0005 %
 Total S max. 0.0001 %
 Total Si max. 0.0005 %
 Ca max. 0.0001 %
 Cr max. 0.000005 %

Cu max. 0.00001 %
 Fe max. 0.0002 %
 K max. 0.0002 %
 Mg max. 0.00002 %
 Na max. 0.0002 %
 Ni max. 0.000005 %
 Zn max. 0.00001 %

Order-No.	Quantity
A2424,0500	500 ml
A2424,1000	1 L
A2424,10006	6 x 1 L
A2424,2500	2.5 L
A2424,25004	4 x 2.5 L
A2424,5000	5 L

Nitric acid 65 %

Boiling point (65 %) .. 122°C (dec.)
 Density (d 20°C/4°C) .. 1.40 (65 %)
 Melting point (65 %) .. -32°C

HNO₃
M = 63.01 g/mol
 CAS-No.: 7697-37-2
 HS-No.: 28080000
 EC-No.: 231-714-2

Storage: RT
 LGK: 5.1 B
 Disposal: 12

Class / PG: 8(5.1)/II
 UN2031
 WGK: 1
 Danger
 H272-H314-H290
 P260-P301+P330+P331-P280-
 P305+P351+P338

**Nitric acid 65 % ultrapure**

C

Specification:

Assay (titr.) min. 65 %
 Total Chlorine max. 0.2 ppm
 Total P max. 0.2 ppm
 Total S max. 0.5 ppm
 Total Si max. 0.1 ppm
 Ca max. 0.1 ppm

Cr max. 0.1 ppm
 Cu max. 0.005 ppm
 Fe max. 0.1 ppm
 K max. 0.05 ppm
 Mg max. 0.02 ppm
 Na max. 0.5 ppm

Ni max. 0.005 ppm
 Pb max. 0.005 ppm
 Zn max. 0.02 ppm

Order-No.	Quantity
A2433,0100	100 ml
A2433,0250	250 ml
A2433,0500	500 ml
A2433,1000	1 L
A2433,10006	6 x 1 L

Nitric acid 65 % p. A.

C

Specification:

Assay (titr.) approx. 65 %
 Chloride max. 0.00005 %
 Phosphate max. 0.00005 %
 Sulfate max. 0.00005 %
 Al max. 0.000005 %
 As max. 0.000001 %
 Ca max. 0.00005 %
 Fe max. 0.00002 %
 Na max. 0.00005 %
 Ni max. 0.000005 %
 Pb max. 0.000001 %

Zn max. 0.000005 %

Order-No.	Quantity
A0777,0100	100 ml
A0777,0500	500 ml
A0777,1000	1 L
A0777,10006	6 x 1 L
A0777,2500	2.5 L
A0777,25004	4 x 2.5 L
A0777,5000	5 L
A0777,9010	10 L
A0777,9025	25 L

Nitric acid 65 % pure

C

Specification:

Assay (titr.) min. 65 %
 Chloride max. 0.0003 %
 Phosphate max. 0.001 %
 Sulfate max. 0.001 %
 Al max. 0.0005 %
 As max. 0.0001 %
 Ca max. 0.001 %
 Fe max. 0.0005 %
 Na max. 0.005 %

Ni max. 0.0005 %
 Pb max. 0.0005 %
 Zn max. 0.0005 %

Order-No.	Quantity
A0660,1000	1 L
A0660,10006	6 x 1 L
A0660,2500	2.5 L
A0660,25004	4 x 2.5 L
A0660,5000	5 L
A0660,9010	10 L
A0660,9025	25 L

◆ Product color may turn to yellowish in storage!

Nitric acid 65 % Technical grade

C

Specification:

Assay (titr.) approx. 65 %

Order-No.	Quantity
A3122,2500	2.5 L
A3122,25004	4 x 2.5 L
A3122,5000	5 L
A3122,9010	10 L
A3122,9025	25 L

Nitric acid (concentrations: ≥ 20 - < 65 %)

Boiling point (65 %) .. 122°C (dec.)
 Density (d 20°C/4°C) .. 1.40 (65 %)
 Melting point (65 %) .. -32°C

HNO₃
M = 63.01 g/mol
 CAS-No.: 7697-37-2
 HS-No.: 28080000
 EC-No.: 231-714-2

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/II
 UN2031
 WGK: 1
 Danger
 H314-H290
 P305+P351+P338-P280-
 P301+P330+P331-P260

**Nitric acid 53 % Technical grade**

C

Specification:

Assay (titr.) approx. 53 %

Order-No.	Quantity
A3121,2500	2.5 L
A3121,25004	4 x 2.5 L
A3121,5000	5 L
A3121,9010	10 L
A3121,9025	25 L

Nitric acid 53 % pure

C

Specification:

Assay (titr.) min. 53 %
 Chloride max. 0.0002 %
 Sulfate max. 0.005 %
 Al max. 0.001 %
 Ca max. 0.005 %
 Cr max. 0.001 %
 Fe max. 0.001 %

Mg max. 0.001 %
 Ni max. 0.005 %

Order-No.	Quantity
A0533,1000	1 L
A0533,10006	6 x 1 L
A0533,2500	2.5 L
A0533,25004	4 x 2.5 L
A0533,5000	5 L
A0533,9010	10 L

Nitric acid 40 % p. A.

C

Specification:

Assay (titr.) min. 40 %
 Chloride max. 0.00005 %
 Phosphate max. 0.00005 %
 Sulfate max. 0.00005 %
 Al max. 0.00005 %
 As max. 0.000001 %

Ca max. 0.00005 %
 Fe max. 0.00002 %
 Na max. 0.00005 %
 Ni max. 0.000005 %
 Pb max. 0.000001 %
 Zn max. 0.000005 %

Order-No.	Quantity
A5287,0500	500 ml
A5287,1000	1 L
A5287,10006	6 x 1 L
A5287,2500	2.5 L
A5287,25004	4 x 2.5 L

Nitric acid 25 % p. A.

C

Specification:

Assay (titr.) min. 25 %
 Chloride max. 0.00005 %
 Phosphate max. 0.00005 %
 Sulfate max. 0.00005 %
 Al max. 0.000005 %
 As max. 0.000001 %

Ca max. 0.00005 %
 Fe max. 0.00002 %
 Na max. 0.00005 %
 Ni max. 0.000005 %
 Pb max. 0.000001 %
 Zn max. 0.000005 %

Order-No.	Quantity
A0858,0500	500 ml
A0858,1000	1 L
A0858,10006	6 x 1 L
A0858,2500	2.5 L
A0858,25004	4 x 2.5 L

Nitric acid 25 % pure

C

Specification:

Assay (titr.) min. 25 %
 Chloride max. 0.0002 %
 Sulfate max. 0.005 %
 Al max. 0.001 %
 Ca max. 0.005 %
 Cr max. 0.001 %
 Fe max. 0.001 %

Mg max. 0.001 %
 Ni max. 0.005 %

Order-No.	Quantity
A2656,1000	1 L
A2656,10006	6 x 1 L
A2656,2500	2.5 L
A2656,25004	4 x 2.5 L
A2656,5000	5 L
A2656,9010	10 L

Nitric acid 20 % p. A.

C

Specification:

Assay (titr.) min. 20 %
 Chloride max. 0.00005 %
 Phosphate max. 0.00005 %
 Sulfate max. 0.00005 %
 Al max. 0.000005 %
 As max. 0.000001 %

Ca max. 0.00005 %
 Fe max. 0.00002 %
 Na max. 0.00005 %
 Ni max. 0.000005 %
 Pb max. 0.000001 %
 Zn max. 0.000005 %

Order-No.	Quantity
A3259,0500	500 ml
A3259,1000	1 L
A3259,10006	6 x 1 L
A3259,2500	2.5 L
A3259,25004	4 x 2.5 L

Nitric acid 20 % Technical grade

C

Specification:

Assay (titr.) approx. 20 %

Order-No.	Quantity
A0940,2500	2.5 L
A0940,25004	4 x 2.5 L
A0940,5000	5 L
A0940,9010	10 L

Nitric acid (concentrations: ≥ 5 - < 20 %)HS-No.: 28080000
EC-No.: 231-714-2Storage: RT
LGK: 8 B
Disposal: 12Class / PG: 8/II
UN2031
WGK: 1
Danger
H314-H290
P301+P330+P331-P260-
P305+P351+P338-P280**Nitric acid 10 % p. A.**

C

Specification:

Assay (titr.)	min. 10 %	Ca	max. 0.00005 %
Chloride	max. 0.00005 %	Fe	max. 0.00002 %
Phosphate	max. 0.00005 %	Na	max. 0.00005 %
Sulfate	max. 0.00005 %	Ni	max. 0.00005 %
Al	max. 0.000005 %	Pb	max. 0.000001 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A0459,0500	500 ml
A0459,1000	1 L
A0459,10006	6 x 1 L
A0459,2500	2.5 L
A0459,25004	4 x 2,5 L

Nitric acid 10 % pure

C

Specification:

Assay (titr.)	min. 10 %	Fe	max. 0.001 %
Chloride	max. 0.0002 %	Mg	max. 0.001 %
Sulfate	max. 0.005 %		
Al	max. 0.001 %		
Ca	max. 0.005 %		
Cr	max. 0.001 %		

Order-No.	Quantity
A2770,1000	1 L
A2770,10006	6 x 1 L
A2770,2500	2.5 L
A2770,5000	5 L
A2770,9010	10 L

Nitric acid 5 % pure

C

Specification:

Assay (titr.)	min. 5 %	Mg	max. 0.001 %
Chloride	max. 0.0002 %	Ni	max. 0.005 %
Sulfate	max. 0.005 %		
Al	max. 0.001 %		
Ca	max. 0.005 %		
Cr	max. 0.001 %		
Fe	max. 0.001 %		

Order-No.	Quantity
A4681,1000	1 L
A4681,10006	6 x 1 L
A4681,2500	2.5 L
A4681,25004	4 x 2,5 L
A4681,5000	5 L
A4681,9010	10 L

Nitric acid 3 % pure

C

HS-No.: 28080000
EC-No.: 231-714-2

Storage: RT

Class / PG: UN2031
8/II
Warning
H315-H290
P332+P313-P264-P280-P302+P352**Specification:**

Assay (titr.)	min. 3 %	Mg	max. 0.001 %
Chloride	max. 0.0002 %	Ni	max. 0.005 %
Sulfate	max. 0.005 %		
Al	max. 0.001 %		
Ca	max. 0.005 %		
Cr	max. 0.001 %		
Fe	max. 0.001 %		

Order-No.	Quantity
A4039,1000	1 L
A4039,10006	6 x 1 L
A4039,2500	2.5 L
A4039,25004	4 x 2,5 L
A4039,5000	5 L
A4039,9010	10 L

Nitric acid - Standard volumetric solutionsStorage: RT
LGK: 8 B**Nitric acid - Standard volumetric solution (10 M)**

C

10 mol/L (10 N Solution)

HS-No.: 28080000

Disposal: 12

Class / PG: 8/II
UN2031
WGK: 1
Danger
H314-H290
P280-P301+P330+P331-
P305+P351+P338-P260**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4813,1000	1 L
A4813,10006	6 x 1 L
A4813,5000	5 L

Nitric acid - Standard volumetric solution (6 M)

6 mol/L (6 N Solution)

HS-No.: 28080000

Disposal: 12

Class / PG: 8/II
UN2031
WGK: 1
Danger
H290-H314
P260-P305+P351+P338-
P301+P330+P331-P280



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3398,1000	1 L
A3398,10006	6 x 1 L
A3398,5000	5 L

Nitric acid - Standard volumetric solution (4 M)

4 mol/L (4 N Solution)

HS-No.: 28080000

Disposal: 12

Class / PG: 8/II
UN2031
WGK: 1
Danger
H290-H314
P305+P351+P338-P280-P260-
P301+P330+P331



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4886,1000	1 L
A4886,5000	5 L

Nitric acid - Standard volumetric solution (2 M)

2 mol/L (2 N Solution)

HS-No.: 28080000

Class / PG: 8/II
UN2031
WGK: 1
Danger
H314-H290
P305+P351+P338-P301+P330+P331-
P280-P260



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3380,1000	1 L
A3380,10006	6 x 1 L
A3380,5000	5 L

Nitric acid - Standard volumetric solution (1 M)

1 mol/L (1 N Solution)

HS-No.: 38220000

Class / PG: 8/II
UN2031
WGK: 1
Danger
H314-H290
P280-P260-P301+P330+P331-
P305+P351+P338



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2676,1000	1 L
A2676,10006	6 x 1 L
A2676,5000	5 L

Nitric acid - Standard volumetric solution (0.5 M)

0.5 mol/L (0.5 N Solution)

HS-No.: 38220000

Class / PG: 8/II
UN2031
Warning
H315-H290
P332+P313-P280-P264-P302+P352



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2690,1000	1 L
A2690,5000	5 L

Nitric acid - Standard volumetric solution (0.1 M)

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

Class / PG: UN2031

8/II
Warning
H290
H406-P390

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2685,1000	1 L
A2685,10006	6 x 1 L
A2685,5000	5 L

Nitric acid - Standard volumetric solution (0.01 M)

0.01 mol/L (0.01 N Solution)

HS-No.: 38220000

Class / PG: 8/II

UN2031
Warning
H290
P406-P390

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2798,1000	1 L
A2798,5000	5 L

Nitric acid - Standard volumetric solution (0.001 M)

0.001 mol/L (0.001 N Solution)

HS-No.: 38220000

Class / PG: 8/II

UN2031
Warning
H290
P406-P390

Specification:

Factor limits 0.995 - 1.005

Order-No.	Quantity
A2799,1000	1 L
A2799,5000	5 L

Nitrilotriacetic acid

NTA

 $C_6H_9NO_6$

Storage: RT

WGK: 2

Melting point 242°C (dec.)
Solubility (20°C) 1.3 g/L (H₂O)

M = 191.14 g/mol
CAS-No.: 139-13-9
HS-No.: 29224985
EC-No.: 205-355-7

LGK: 10 - 13
Disposal: 3

Warning
H319-H302
P305+P351+P338


Nitrilotriacetic acid p. A.

Specification:

Assay (titr.) min. 99 %	Fe max. 0.001 %
Sulfated ash max. 0.1 %	Pb max. 0.001 %
Chloride max. 0.02 %	
Sulfate max. 0.01 %	

Order-No.	Quantity
A1280,0100	100 g
A1280,0250	250 g
A1280,0500	500 g

Nitrilotriacetic acid pure

Specification:

Assay (titr.) min. 98 %	
Sulfated ash max. 0.1 %	
Pb max. 0.001 %	

Order-No.	Quantity
A7313,0250	250 g
A7313,0500	500 g
A7313,1000	1 kg

2,2',2''-Nitrilotriethanol see Triethanolamine Page 831

Nitro blue tetrazolium chloride see NBT *BioChemica* Page 562

Nitro-BT see NBT *BioChemica* Page 562

Nitrocellulose - Transfer membrane see Transfer Membranes: Nitrocellulose, Nylon, PVDF Page 825

Nitro-PAPS disodium salt *BioChemica*

2-(5-Nitro-2-pyridylazo)-5-(N-propyl-N-sulfopropylamino)-phenol disodium salt

 $C_{17}H_{19}N_5Na_2O_6S$
M = 467.41 g/mol
CAS-No.: 115408-94-1
HS-No.: 29214900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay (from N) min. 90 %
Water (K.F.) max. 10 %

Order-No.	Quantity
A1494,0025	25 mg
A1494,0100	100 mg

Literature: (1) Makino, T. *et al.* (1988) *Clin. Chim. Acta* **171**, 19-28

A sensitive, direct colorimetric assay of serum iron using the chromogen nitro-PAPS.

p-Nitrophenyl-2-acetamido-2-deoxy- α -D-galactopyranoside see 4-Nitrophenyl-N-acetyl- α -D-galactosaminide *BioChemica* Page 573
4-Nitrophenyl-2-acetamino-2-deoxy- β -D-glucopyranoside see 4-Nitrophenyl-N-acetyl- β -D-glucosaminide *BioChemica* Page 573

4-Nitrophenyl-N-acetyl- α -D-galactosaminide *BioChemica*

B

p-Nitrophenyl-2-acetamido-2-deoxy- α -D-galactopyranoside

$C_{14}H_{18}N_2O_8$
 $M = 342.30$ g/mol
CAS-No.: 23646-68-6
HS-No.: 29389090
EC-No.: 233-392-9

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Specification:

Assay (TLC) min. 99 %
Solubility (2.5 %; DMF) clear, yellowish
4-Nitrophenol max. 0.02 %

Loss on drying max. 2.5 %

Order-No.	Quantity
A3808,0005	5 mg
A3808,0025	25 mg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. page 17.11.2 Suppl. 32 John Wiley & Sons, New York.

Comment: N-Acetyl- α -D-galactosaminide may be used as a synthetic glycoside primer in the biosynthesis of oligosaccharides or as inhibitor of the glycoprotein and proteoglycan-synthesis. The latter function is based on the competition with the natural, endogenous substrates.
For the preparation of a 0.2 M stock solution dissolve 68.5 mg 4-Nitrophenyl-N-acetyl- α -D-galactosaminide in 1 ml dimethyl sulfoxide. If necessary warm up the solution.

4-Nitrophenyl-N-acetyl- β -D-glucosaminide *BioChemica*

B

4-Nitrophenyl-2-acetamido-2-deoxy- β -D-glucopyranoside, PNAG

$C_{14}H_{18}N_2O_8$
 $M = 342.30$ g/mol
CAS-No.: 3459-18-5
HS-No.: 29329900
EC-No.: 222-398-7

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 99 %
Solubility (0.5 %; H_2O) clear
4-Nitrophenol max. 0.01 %

Loss on drying max. 1 %

Order-No.	Quantity
A1932,0100	100 mg
A1932,0500	500 mg

Literature: (1) Dangelmaier, C.A. & Holmsen, H. (1980) *Anal. Biochem.* **104**, 182-191
(2) Kapur, D.K. & Gupta, G.S. (1986) *Biochem. J.* **236**, 103-109
(3) Tronsmo, A. & Harman, G.E. (1993) *Anal. Biochem.* **208**, 74-79
(4) Kalabat, D.Y. et al. (1998) *BioTechniques* **25**, 1030-1035

Determination of acidic hydrolases in human platelets.
Purification, biochemical properties and the active center of N-Acetyl- β -D-hexosaminidase from semen.
Demonstration and quantification of N-Acetyl- β -D-glucosaminidase, chitobiosidase and Endochitinase in solutions and gels.
Chitobiase, a new reporter enzyme.

4-Nitrophenyl- α -L-fucopyranoside *BioChemica*

B

4-Nitrophenyl- α -L-fucopyranoside

$C_{12}H_{15}NO_7$
 $M = 285.3$ g/mol
CAS-No.: 10231-84-2
HS-No.: 29389090
EC-No.: 233-553-3

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Specification:

Assay (TLC) min. 98 %
 α 20°C/D; 0.2 %, EtOH -243° - -247°
Loss on drying max. 1 %

Solubility (0.4 %; Acetone) clear
4-Nitrophenol max. 0.1 %

Order-No.	Quantity
A1559,0100	100 mg
A1559,0500	500 mg

2-Nitrophenyl- β -D-galactopyranoside *BioChemica*

B

ortho-Nitrophenyl- β -D-galactopyranoside, ONPG, NIPHEGAL

$C_{12}H_{15}NO_8$
 $M = 301.26$ g/mol
CAS-No.: 369-07-3
HS-No.: 29389090
EC-No.: 206-716-1

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Melting point 185°C (dec.)

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, H_2O -67° - -69°
2-Nitrophenol max. 0.01 %

Order-No.	Quantity
A1272,0005	5 g
A1272,0010	10 g
A1272,0025	25 g
A1272,0100	100 g

Literature: (1) Wallenfels, K. et al. (1960) *Biochem. Z.* **333**, 377-394
(2) Wallenfels, K. (1962) *Methods Enzymol.* **5**, 212-219
(3) Levvy, G.A. & Conchie, J. (1966) *Methods Enzymol.* **8**, 571-584
(4) Janknecht, R. et al. (1995) *Oncogene* **10**, 1209-1216

Untersuchungen über milchzuckerspaltende Enzyme.
 β -Galactosidase: Assay methods.
Mammalian glycosidases and their inhibition by Aldonolactones.
SAP1a is a nuclear target of signaling cascades involving ERKs.

Comment: ONPG is one of the major substrates in β -galactosidase enzyme assays. The properties of this enzyme have been studied in detail (e. g. ref. 1-3). Expression plasmids with the coding sequence of β -Galactosidase are widely used as internal controls for transfection experiments in expression and transcription studies, usually under the control of a strong enhancer (SV40, CMV, RSV, HIV etc.). The enzyme activity is easily determined from cell extracts (e. g. ref. 4). The cleavage of ONPG releases the yellow dye 4-nitrophenyl and absorption is measured at 405 - 420 nm by spectrophotometry. A commonly used reaction buffer is: 60 mM Na_2HPO_4 / 39 mM NaH_2PO_4 , pH 7.0 / 10 mM KCl / 1 mM $MgSO_4$ / 2 mM DTT and 1 mg/ml ONPG. ONPG is of low solubility. The solid ONPG is added to the reaction buffer and dissolved by warming the buffer to 37°C and/or well mixing. DTT is added freshly (like ONPG) from a 1 M stock solution (4).

Note: For the investigations mentioned above, the bacterial β -galactosidase (*E. coli*) is used. The pH-optimum of this enzyme is pH 7.3. In mammalian cells exists a lysosomal β -galactosidase with a pH-optimum at 3.5. Make sure, that the pH of the reaction buffer is correct, otherwise there could be a significant background by the endogenous enzyme!

4-Nitrophenyl-β-D-galactopyranoside BioChemica

B

para-Nitrophenyl-β-D-galactopyranoside
 Melting point 178 - 180°C
 Specification:
 Assay min. 99 %
 4-Nitrophenol max. 0.01 %
 Water (K.F.) max. 7 %

C₁₂H₁₅NO₈
 M = 301.26 g/mol
 CAS-No.: 3150-24-1
 HS-No.: 29389090
 EC-No.: 221-584-5

Storage: -20°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

Order-No.	Quantity
A1271,0001	1 g
A1271,0005	5 g
A1271,0025	25 g

Literature: (1) Wallenfels, K. et al. (1960) *Biochem. Z.* **333**, 377-394

Untersuchungen über milchzuckerspaltende Enzyme.

ortho-Nitrophenyl-β-D-galactopyranoside see 2-Nitrophenyl-β-D-galactopyranoside BioChemica Page 573
 para-Nitrophenyl-β-D-galactopyranoside see 4-Nitrophenyl-β-D-galactopyranoside BioChemica Page 574

2-Nitrophenyl-β-D-glucopyranoside BioChemica

B

para-Nitrophenyl-β-D-glucopyranoside
 Melting point 165°C
 Specification:
 Assay min. 99 %
 2-Nitrophenol max. 0.03 %

C₁₂H₁₅NO₈
 M = 301.26 g/mol
 CAS-No.: 2816-24-2
 HS-No.: 29389090
 EC-No.: 220-568-5

Storage: -20°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

Order-No.	Quantity
A1270,0500	500 mg
A1270,0001	1 g

4-Nitrophenyl-β-D-glucopyranoside BioChemica

B

para-Nitrophenyl-β-D-glucopyranoside
 Melting point 165°C
 Specification:
 Assay min. 97 %
 4-Nitrophenol max. 0.01 %

C₁₂H₁₅NO₈
 M = 301.26 g/mol
 CAS-No.: 2492-87-7
 HS-No.: 29389090
 EC-No.: 219-661-3

Storage: -20°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

Warning
 H332-H302-H312
 P280



Order-No.	Quantity
A1269,0500	500 mg
A1269,0001	1 g
A1269,0005	5 g

Literature: (1) Hösel, W. & Nahrstedt, A. (1975) *Hoppe-Seyler's Z. Physiol. Chemie* **356**, 1265-1275 Purification and characterisation of β-Glucosidase from *Alocasia macrorrhiza* Schott.
 (2) Weber, J.P. & Fink, A.L. (1980) *J. Biol. Chem.* **255**, 9030-9032 Temperature-dependent change in the rate-limiting step of β-Glucosidase catalysis.

para-Nitrophenyl-β-D-glucopyranoside see 4-Nitrophenyl-β-D-glucopyranoside BioChemica Page 574

4-Nitrophenyl-β-D-glucuronide BioChemica

B

para-Nitrophenyl-β-D-glucuronide
 Melting point 143°C
 Specification:
 Assay min. 99 %
 4-Nitrophenol max. 0.01 %

C₁₂H₁₃NO₉
 M = 315.23 g/mol
 CAS-No.: 10344-94-2
 HS-No.: 29389090
 EC-No.: 233-753-0

Storage: -20°C
 protected from light
 LGK: 10 - 13
 Disposal: 3

Order-No.	Quantity
A1028,0250	250 mg
A1028,0001	1 g
A1028,0005	5 g

Literature: (1) Nimmo-Smith, R.H. (1961) *Biochim. Biophys. Acta* **50**, 166-169
 (2) Jefferson, R.A. et al. (1986) *Proc. Natl. Acad. Sci. USA* **83**, 8447-8451

p-Nitrophenyl-glucuronide as substrate for β-glucuronidase.
 β-Glucuronidase from *E. coli* as a gene-fusion marker.

para-Nitrophenyl-β-D-glucuronide see 4-Nitrophenyl-β-D-glucuronide BioChemica Page 574
 α-(p-Nitrophenyl)-glycerol see 1-(4-Nitrophenyl)-1,2,3-propanetriol Page 575
 1-(4-Nitrophenyl)-glycerol see 1-(4-Nitrophenyl)-1,2,3-propanetriol Page 575

4-Nitrophenyl phosphate disodium salt hexahydrate *BioChemica*

B

para-Nitrophenyl phosphate disodium salt hexahydrate

$C_6H_4NNa_2O_6P \cdot 6H_2O$
 $M = 371.15$ g/mol
CAS-No.: 4264-83-9
HS-No.: 29199000
EC-No.: 224-246-5

Storage: 2-8°C
protected from light
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point 195°C

Specification:

Assay min. 98 %
4-Nitrophenol max. 0.01 %

Order-No.	Quantity
A1442,0005	5 g
A1442,0025	25 g
A1442,0050	50 g

Literature: (1) Lowry, O.H. (1951) *Methods Enzymol.* **4**, 366-381

(2) Bretaudiere, J. & Spillman, T. (1984) *Methods Enzym. Anal.* **4**, 75-82

Micromethods for the assay of enzymes.

Alkaline phosphatase, IFCC Reference method.

Comment: In both references the substrate solution is 16 mM 4-nitrophenyl phosphate (in 2-amino-2-methyl-1-propanol ref. 2).

para-Nitrophenyl phosphate disodium salt hexahydrate see 4-Nitrophenyl phosphate disodium salt hexahydrate *BioChemica* Page 575

1-(4-Nitrophenyl)-1,2,3-propanetriol

B

1-(4-Nitrophenyl)-glycerol, α -(*p*-Nitrophenyl)-glycerol

$C_9H_{11}NO_5$
 $M = 213.19$ g/mol
CAS-No.: 2207-68-3
HS-No.: 29062900
EC-No.: 218-624-9

Storage: RT
protected from light
LGK: 10 - 13
Disposal: 3

Warning
H319-H335-H315
P280-P305+P351+P338-P301+P312



Specification:

Assay min. 98 %
4-Nitrophenol max. 0.1 %

Order-No.	Quantity
A1832,0100	100 mg
A1832,0500	500 mg
A1832,0001	1 g

p-Nitrophenyl- β -D-xylopyranoside see 4-Nitrophenyl- β -D-xyloside *BioChemica* Page 575

4-Nitrophenyl- β -D-xyloside *BioChemica*

B

p-Nitrophenyl- β -D-xylopyranoside

$C_{11}H_{13}NO_7$
 $M = 271.20$ g/mol
CAS-No.: 2001-96-9
HS-No.: 29389090
EC-No.: 217-897-1

Storage: -20°C
protected from light
LGK: 10 - 13
Disposal: 3

Warning
H335-H319-H315
P305+P351+P338-P261



Specification:

Assay (TLC) min. 99 %
Solubility (5 %; MeOH) clear, yellowish
4-Nitrophenol max. 0.1 %

Order-No.	Quantity
A3809,0100	100 mg
A3809,0250	250 mg
A3809,0001	1 g

2-(5-Nitro-2-pyridylazo)-5-(N-propyl-N-sulfoethylamino)-phenol disodium salt see Nitro-PAPS disodium salt *BioChemica* Page 572

N-Nitroso-N-ethylurea

B

ENU, *N*-Ethyl-*N*-nitrosourea

$C_3H_7N_3O_2$
 $M = 117.10$ g/mol
CAS-No.: 759-73-9
HS-No.: 29299000

Storage: 2-8°C
LGK: 6.1 B

Class / PG: 6.1/III
UN2811
Danger
H350-H360-H312-H332-H301
P301+P310-P308+P313-P201-P280



Melting point 93 - 97°C

Specification:

Assay (from N) min. 95 %
Loss on drying max. 5 %

Order-No.	Quantity
A1566,0001	1 g
A1566,0005	5 g

N-Nitroso-N-methylurea

B

N-Methyl-*N*-nitrosourea

$C_2H_5N_3O_2$
 $M = 103.08$ g/mol
CAS-No.: 684-93-5
HS-No.: 29299000
EC-No.: 211-678-4

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
Danger
H360-H301-H228-H350
P301+P310-P201-P210-P308+P313



Specification:

^1H -NMR spectrum complies
Water (K.F) max. 18 %

Order-No.	Quantity
A6431,0025	25 mg

Comment: This product will be supplied in a 5 ml bottle and a separate top with septum. The *ready-to-use* - solution may be prepared in the 5 ml bottle and then change the top. Due to the transport regulations for hazardous goods, it is not allowed to ship the product with septum.

NMP see 1-Methyl-2-pyrrolidone Page 541

NNGH

B

N-Isobutyl-*N*-(4-methoxyphenylsulfonyl)glycyl hydroxamic acid

$C_{13}H_{20}N_2O_5S$
 $M = 316.38$ g/mol
 HS-No.: 29350090

Storage: RT

Specification:

Assay (TLC) min. 95 %
 Solubility (3 %; DMSO) clear

Order-No.	Quantity
A7645,0005	5 mg
A7645,0025	25 mg

Literature: (1) Bertini, I. et al. (2005) *Proc. Natl. Acad. Sci. USA* **102**, 5334-5339
 (2) Kim, Y.S. et al. (2005) *J. Neurosci.* **25**, 3701-3711

Conformational variability of matrix metalloproteinases: Beyond a single 3D structure.
 Matrix Metalloproteinase-3: A Novel Signaling Proteinase from Apoptotic Neuronal Cells That Activates Microglia.

Comment: NNGH is a potent and specific inhibitor of metalloproteinase-3 (MMP-3; Stromelysin), as well as other MMP-family members (MMP-1, MMP-2, MMP-7, MMP-8, MMP-9, MMP-10, MMP12, MMP-13, MMP-14, MMP-20). NNGH is soluble in DMSO or ethanol. Solutions can be stored at -20°C for up to 3 months.

Nocodazole BioChemica

B

Melting point 300° (dec.)

$C_{14}H_{11}N_3O_3S$
 $M = 301.33$ g/mol
 CAS-No.: 31430-18-9
 HS-No.: 29349990
 EC-No.: 250-626-5

Storage: RT
 LGK: 6.1 A
 Disposal: 9

Danger
 H360-H315-H319-H335-H351
 P305+P351+P338-P308+P313-P201



Specification:

Assay min. 98 %

Order-No.	Quantity
A1999,0010	10 mg
A1999,0050	50 mg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page A.1K.20 Suppl. 59. John Wiley & Sons, New York.

Comment: Nocodazol promotes the depolymerisation of microtubuli. Nanomolar concentrations will interfere with the locomotion of fibroblasts. Stock solutions are prepared in DMSO at concentrations of 10 to 30 mM and stored at room temperature. The working concentration ranges from 50 nM (low concentrations) to 30 µM (for effective microtubule depolymerization).

Nonactin BioChemica

B

Werramycin A, Ammonium Ionophore,
 Polynactin
 from *Streptomyces griseus*

$C_{40}H_{64}O_{12}$ (Nonactin)
 $M = 736.93$ g/mol
 CAS-No.: 6833-84-7
 HS-No.: 29419000
 EC-No.: 229-911-3

Storage: 2-8°C

Melting point 145 - 146°C

Specification:

Assay (TLC) approx. 99 %
 λ_{max} 205 nm
 Solubility (10 mg/ml DMSO) clear, colorless

Order-No.	Quantity
A7803,0005	5 mg
A7803,0010	10 mg
A7803,0050	50 mg

Comment: Nonactin is a macrotetrolide antibiotic from *Streptomyces griseus*, more precisely it is a mixture of the homologs Nonactin and Monactin. The Nonactin is not less than 80 %. It does not contain Dinactin, Trinactin and Tetranactin. The white, needle-like crystals are slightly hygroscopic and have to be protected from moisture. Nonactin inhibits the P170 glycoprotein-mediated efflux of chemotherapeutic agents in multidrug-resistant cancer cells (ionophore).

1-Nonanesulfonic acid sodium salt IPC grade

C

Sodium 1-nonane sulfonate

$C_9H_{19}NaO_3S$
 $M = 230.30$ g/mol
 CAS-No.: 35192-74-6
 HS-No.: 29041000

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Specification:

Assay (titr.) min. 99 %
 Solubility (5 %; H_2O) clear, colorless
 A (1 cm/0.005 M in water HPLC grade)
 210 nm max. 0.15
 230 nm max. 0.05
 260 nm max. 0.02

Order-No.	Quantity
A1017,0005	5 g
A1017,0010	10 g
A1017,0025	25 g

Literature: (1) Hancock, W.S. & Harding, D. (1982) *J. Chromatogr.* **228**, 273-278

Rapid analysis of 3-Methylhistidine in urine, plasma, muscle and amniotic fluid with a single HPLC system but with different ion-pairing reagents.

N-Nonanoyl-N-methylglucamide see MEGA-9 Page 524

Non-Detergent Sulfobetaine 201 see 3-(1-Pyridino)-1-propanesulfonate Page 677

Nonfat dried milk powder

B

Milk powder, Skim milk

HS-No.: 04021011
EC-No.: 271-045-3

Storage: RT

Specification:

Ash 8.5 % ± 0.5 %
Protein 35.0 % ± 1.0 %
Total no. of germs max. 30000 CFU/g
pH (20 %; H₂O; 20°C) 6.5 ± 0.2
Fat max. 1.0 %

Lactose 52.0 % ± 1.0 %

Order-No.	Quantity
A0830,0500	500 g
A0830,1000	1 kg
A0830,10006	6 x 1 kg
A0830,5000	5 kg

Literature: (1) Johnson, D.A. *et al.* (1987) *Gene Anal. Techn.* **1**, 3-8

Improved technique utilizing nonfat dry milk for analysis of proteins and nucleic acids transferred to nitrocellulose.

- (2) Harlow, E., Lane, D. (eds.) (1988) *Antibodies* A Laboratory Manual; Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning*: A Laboratory Manual, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 2.10.16 (Suppl. 42) Greene Publishing & Wiley-Interscience, New York.

Nonidet® P40 (Substitute) BioChemica

B

Nonylphenylpolyethylene glycol, NP40
Mixture of 15 homologues

CAS-No.: 68412-54-4
HS-No.: 34021300

Storage: RT

Class / PG: 9/III
UN3082
Danger
H302-H411-H318
P301+P312-P280-P305+P351+P338



Specification:

Assay min. 99 %
Heavy metals max. 0.005 %
pH (1 %; H₂O) 6.0 - 7.5

Chloride max. 0.05 %
Sulfate max. 0.01 %

Order-No.	Quantity
A1694,0250	250 ml
A1694,0500	500 ml

®trademark of Shell

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning*: A Laboratory Manual, 2nd Edition; page 18.38. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

- (2) Hutchison, W. & Dahl, H.-H.M. (1995) *BioTechniques* **19**, 554-556
(3) Nakshatri, H. & Bhat-Nakshatri, P. (1997) *Anal. Biochem.* **249**, 103-104
(4) Wang, H. *et al.* (1993) *Nucleic Acids Res.* **21**, 4153-4154

Detergent-enhanced sequencing of heat-denatured plasmid DNA.
Different effects of Nonidet P40 on DNA binding of transcription factors.
A simple method for preparing plant samples for PCR.

Nonidet® P40 (Substitute) - Solution 10 % peroxide-free

B

aqueous solution

HS-No.: 38220000

Storage: 2-8°C
under argon

Warning
H319-H315
P280



Specification:

Assay approx. 10 %
Peroxides max. 0.0001 %

Order-No.	Quantity
A2239,0025	25 ml
A2239,0050	50 ml
A2239,0100	100 ml

®trademark of Shell

n-Nonyl-β-D-glucopyranoside BioChemica

B

CMC (20°C) 18 - 20 mM
Classification: nonionic detergent

C₁₅H₃₀O₆
M = 306.40 g/mol
CAS-No.: 69984-73-2
HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 99 %
α20°C/D; 1 %, H₂O -33' ± 2'
Solubility (10 %; H₂O; EtOH) clear, colorless
Thermal transition 70 - 75°C (smectic A)

α-Isomere (HPLC) max. 0.01 %
n-Nonanol max. 0.001 %
A (1 cm/1 %, water HPLC grade)
260 nm max. 0.03

Order-No.	Quantity
A6742,0001	1 g
A6742,0005	5 g
A6742,0010	10 g

n-Nonyl-β-D-maltoside

Aggregation No. (N₀) .55
CMC (H₂O) 6 mM
Classification: nonionic detergent

C₂₁H₄₀O₁₁
M = 468.41 g/mol
HS-No.: 29389090

Storage: 2-8°C

n-Nonyl-β-D-maltoside Crystallography grade

B

Specification:

Assay min. 99.5 %
α20°C/D; 1 %, H₂O +55'
Solubility (10 %; H₂O; 21°C) clear, colorless
Thermal transition 81°C (smectic A)

α-Isomere (HPLC) max. 0.01 %
n-Nonanol (HPLC) max. 0.001 %
A (1 cm/1 %, water HPLC grade)
280 nm max. 0.04

Order-No.	Quantity
A6768,0001	1 g
A6768,0005	5 g

n-Nonyl-β-D-maltoside *BioChemica*

B

Specification:

Assay	 min. 99 %	<i>n</i> -Nonanol (HPLC)	 max. 0.001 %	A (1 cm/1 %, water HPLC grade)	
α20°C/D; 1 %, H ₂ O	 +54° - +56°			280 nm	 max. 0.04
Solubility (10 %; H ₂ O)	 clear, colorless				
α-Isomere (HPLC)	 max. 0.01 %				

Order-No.	Quantity
A6814,0001	1 g
A6814,0005	5 g

Nonylphenylpolyethylene glycol see Nonidet® P40 (Substitute) *BioChemica* Page 577
Noraristolochic acid see Aristolochic acid II Page 119

Novobiocin sodium salt *BioChemica*

B

Melting point	 220°C	C ₃₁ H ₃₅ N ₂ NaO ₁₁ M = 634.62 g/mol CAS-No.: 1476-53-5 HS-No.: 29419000 EC-No.: 216-023-6	Storage: RT protected from light LGK: 10 - 13	Warning H317-H319 P280-P305+P351+P338



Specification:

Assay (from N)	 min. 95 %	Loss on drying	 max. 5 %
α25°C/D; 5 %, MeOH/HCl	 -50° - -58°		
Activity	 min. 850 µg/mg		
Sulfated ash	 max. 15 %		

Order-No.	Quantity
A1944,0001	1 g
A1944,0005	5 g
A1944,0010	10 g

Literature: (1) Ryan, M.J. (1979) *Antibiotics V*, 214 pp. (F.E. Hahn ed.) Springer-Verlag Berlin, Heidelberg, New York. Novobiocin and Coumestatin A₁.
(2) Cozzarelli, N.R. (1980) *Science* **207**, 953-960
(3) Sumiyoshi, Y. *et al.* (1983) *J. gen. Virol.* **64**, 2329-2333
DNA gyrase and the supercoiling of DNA.
Inhibition of retrovirus RNA-dependent DNA polymerase by novobiocin and nalidixic acid.

NP40 see Nonidet® P40 (Substitute) *BioChemica* Page 577

rHu NRG-1 bioconfident grade



B

recombinant Human Heregulin-β-2, recombinant Human Neureglin-1
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 9.3 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test)	 max. 0.05 EU/µg
Pyrogen test (MAT)	 complies
Assay (SDS-PAGE)	 min. 98 %

Order-No.	Quantity
A8847,0010	10 µg
A8847,0050	50 µg
A8847,0100	100 µg
A8847,1000	1 mg

Comment: Recombinant human NRG-1 contains 62 amino acids and a 16 amino acid histidine-based tag for a total length of 78 amino acids and has a predicted molecular mass of 9.3 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 13 kDa in SDS-PAGE.

rHu NRG-1



B

recombinant Human Neuregulin-1
lyophilized from a 0.2 µm filtered solution
(0.15 mg/ml) in 20 mM PBS, pH 7.0,
containing 0.5 % HSA and 2 % mannitol
from *E. coli*

M = 7.05 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC)	 min. 95 %
Assay (SDS-PAGE)	 min. 95 %

Order-No.	Quantity
A8528,0010	10 µg
A8528,0050	50 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

NSC 26703 see 3-Acetyldeoxynivalenol Page 49

NSC 381866 see Bafilomycin A1 *BioChemica* Page 125

NSE see Enolase, Neuron-specific human Page 327

rHu NT-3



B

recombinant Human Neurotrophin-3
lyophilized without additives
from *E. coli*

M = 13.6 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC)	 min. 98 %
Assay (SDS-PAGE)	 min. 98 %

Order-No.	Quantity
A8543,0002	2 µg
A8543,0010	10 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

NTA see Nitritriacetic acid Page 572

Nuclear fast red (C.I. 60760) Microscopy grade



B

4-Amino-9,10-dihydro-1,3-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid sodium salt

$C_{14}H_8NNaO_7S$
 $M = 357.27 \text{ g/mol}$
CAS-No.: 6409-77-4
HS-No.: 32041900
EC-No.: 229-088-0

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 2

Solubility (25°C) 1 g/L (H_2O)
pH (1 g/L; H_2O ; 20°C) 5.5 - 7.0

Specification:

λ_{max1} (DMSO) 516 - 526 nm
 λ_{max2} (DMSO) 550 - 560 nm
Identity (TLC) complies

Order-No.	Quantity
A8020,0005	5 g
A8020,0025	25 g

Nuclease, Micrococcus

B

Micrococcal nuclease
lyophilized
from *Staphylococcus aureus*

$M = \sim 16800 \text{ g/mol}$
CAS-No.: 9013-53-0
HS-No.: 35079090
EC-No.: 232-748-0

Storage: -20°C
LGK: 10-13
Disposal: 3

Specification:

Activity/mg Protein min. 6000 U

Order-No.	Quantity
A3823,0001	1 mg
A3823,0005	5 mg

Nucleic acid decontamination in autoclaves see Autoclave-ExitusPlus™ Page 123

Nucleic acid decontamination reagent see DNA-ExitusPlus™ Page 302

Nutrient Agar

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Peptones 11.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving .. approx. 7.4 (20°C)

Order-No.	Quantity
A3351,0500	500 g
A3351,5000	5 kg

Literature: (1) American Public Health Association. (1980) Standard Methods for the Examination of Water and Wastewater. 1st ed., APHA, Inc., Washington, D.C.

Comment: This is a general purpose medium, designed to cultivate nonfastidious microorganisms.

Preparation: Suspend 29 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize at 121°C for 15 min. Store the prepared medium at 2-8°C.

Nutrient Agar, DEV

C

DEV-Nutrient Agar

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

hygroscopic

Composition:

Agar 18.0 g/L
Meat extract 10.0 g/L
Meat peptone 10.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving .. approx. 7.3 (20°C)

Order-No.	Quantity
A5626,0500	500 g
A5626,5000	5 kg

Comment: This medium is used for the determination of total microbial count in water according to DEV.

Directions: Suspend 43 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Nutrient Broth

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Peptones 11.0 g/L
Sodium chloride 5.0 g/L

Specification:

pH before autoclaving .. approx. 7.4 (20°C)

Order-No.	Quantity
A3714,0500	500 g
A3714,5000	5 kg

Literature: (1) APHA (1985) Standard methods for the examination of water and wastewater.

Comment: Nutrient Broth was designed to cultivate nonfastidious microorganisms. To be used for specific purposes, it may be enriched with other ingredients, such as carbohydrates, blood, serum and others.

The inoculated tubes are incubated from 18 to 48 hours at $35 \pm 2^\circ\text{C}$.

Preparation: Suspend 16 g in 1 L of distilled or deionized water, mix well and heat gently to dissolve the medium completely. Dispense into aliquots and sterilize at 121°C for 15 min. Store the prepared medium at 2-8°C.

Nylon - Transfer membrane see Transfer Membranes: Nitrocellulose, Nylon, PVDF Page 825

Nystatin dihydrate **BioChemica**

B

Mycostatin, Fungicidin

C₄₇H₇₅NO₁₇ · 2H₂O
 M = 962.10 g/mol
 CAS-No.: 1400-61-9
 HS-No.: 29419000
 EC-No.: 215-749-0

Storage: RT
 protected from light
 LGK: 10-13
 Disposal: 3

Specification:

Activity min. 4400 I.U./mg
 Heavy metals (as Pb) max. 0.002 %
 Identity (UV) complies

Loss on drying max. 5 %
 Sulfated ash max. 3.5 %

Order-No.	Quantity
A3811,0005	5 g
A3811,0025	25 g

Comment: The antimycotic nystatin, in the past called fungicidin, has been isolated from *Streptomyces noursei*. It belongs, like amphotericin B, to the group of polyene macrolides. Nystatin is active (primarily fungistatic) against fungi (biphasic fungi, dermatophyta, molds) and yeast (concentrations usually between 0.5 - 20 µg/ml), at higher concentration fungicidal too (2-4 fold concentration). Grampositive and -negative bacteria or viruses are resistant. The mode of action is based on the interaction steroids of the cell wall of fungi and yeasts. Nystatin forms a channel in the cell membrane, that is permeable selectively for monovalent cations (Na⁺). The loss of cations, the activation of the Na⁺/K⁺-pump and the inhibition of several membrane-bound enzymes destroy yeasts and fungi.

Nystatin is applied in protoplast cultures of *Antirrhinum majus*, *Pisum* and *Nicotiana tabacum* in liquid or solid media. The active concentrations is approx. 5 µg/ml. It is recommended to test for the required concentration case by case (recommended concentration between 5 and 50 µg/ml). The cytotoxic concentration is 600 µg/ml.

Nystatin is almost insoluble in water (100 mg/100 ml), hardly soluble in ethanol (1 g/30-100 ml), methanol and butanol and soluble in DMSO (1 g/50 ml) and dimethyl formamide. Store the dry substance protected from light (stable for at least one year). The stability of solutions 3 days at 37°C, at room temperature one week. At +4°C and pH 6, the activity is reduced after 24 hours by approx. 9 %, after 48 hours by approx. 14 % and after 72 hours by approx. 20%. In the pH-range <2 and >7, the antimycotic is rapidly inactivated. It decomposes under heat, if exposed to light or oxygen.

Ochratoxin A **BioChemica**

B

(R)-N-[[5-Chloro-3,4-dihydro-8-hydroxy-3-methyl-1-oxo-1H-2-benzopyran-7-yl]-carbonyl]-L-phenylalanine, (-)-N-[[5-Chloro-8-hydroxy-3-methyl-1-oxo-7-isochroman-yl]carbonyl]-3-phenylalanine from *Aspergillus ochraceus*

C₂₀H₁₈ClNO₆
 M = 403.81 g/mol
 CAS-No.: 303-47-9
 HS-No.: 29322985

Storage: 2-8°C

Class / PG: 6.1/II
 UN3462
 Danger
 H300-H413-H351
 P264-P281-P301+P310



Melting point 105 - 110°C

Specification:

Assay min. 97 %
 λ_{max} 215, 333 nm
 Solubility (5 mg/ml MeOH) . clear, yellowish

Order-No.	Quantity
A7690,0001	1 mg
A7690,0005	5 mg
A7690,0025	25 mg

- Literature:** (1) Luster, M.I. *et al.* (1987) *Cancer Res.* **47**, 2259-2263
 (2) Gillman, I.G. *et al.* (1998) *Chem. Commun.*, 647-648
 (3) Hoehner, D. *et al.* (1996) *J. Biol. Chem.* **271**, 27388-27394
 (4) Gekle, M. *et al.* (2000) *J. Pharmacol. Exp. Ther.* **293**, 837-844
 (5) Zepnik, H. *et al.* (2001) *Toxicol. Sci.* **59**, 59-67
 (6) Assaf, H. *et al.* (2004) *Toxicol. Sci.* **79**, 335-344
 (7) McLaughlin, J. *et al.* (2004) *Am. J. Physiol. Cell Physiol.* **287**, C1412-C1417
 (8) Sauvanc, C. *et al.* (2005) *Cell Physiol. Biochem.* **15**, 125-134

Selective Immunosuppression in Mice of natural Killer Cell Activity by Ochratoxin A. Ochratoxin A acts as a photoactivatable DNA cleaving agent.
 Free Radical Generation as Induced by Ochratoxin A and Its Analogs in Bacteria (*Bacillus brevis*).
 Ochratoxin A Induces JNK Activation and Apoptosis in MDCK-C7 Cells at Nanomolar Concentrations.
 Ochratoxin A-Induced Tumor Formation: Is There a Role of Reactive Ochratoxin A Metabolites?
 Ochratoxin A Induces Apoptosis in Human Lymphocytes through Down Regulation of BCL-x_L.
 Ochratoxin A increases permeability through tight junctions by removal of specific claudin isoforms.
 The Nephrotoxic Ochratoxin A Induces Key Parameters of Chronic Interstitial Nephropathy in Renal Proximal Tubular Cells.

Comment: Ochratoxin A is a mycotoxin from *Aspergillus ochraceus* and *Penicillium verrucosum*. It is the most abundant mycotoxin found as contamination in food worldwide and it is dreaded due to its carcinogenic and nephrotoxic activity. In addition, its stability in a body is extremely high. Various physiological effects were described: Immunosuppression in animals (1), photoactivatable DNA cleavage (2), formation of free radicals, leading to lipid peroxidation (3), activation of JNK (4) and MAPK (8) or induction of apoptosis (4,6,8), tumor formation (5), permeabilization of cells (7).

Solubility and Stability: Ochratoxin A is soluble in DMSO (100 mg/ml), methanol and ethanol (10 - 50 mg/ml), and acetone (50 - 100 mg/ml). In water it is hardly soluble (1 mg/ml). Solutions of Ochratoxin A do not lose their activity even after storage for more than one year, protected from light and refrigerated.

Octadecanoic acid see Stearic acid Page 773

iso-Octane see Isooctane Page 464

n-Octane **BioChemica**

B

Boiling point 125 - 126°C
 Density 0.70 g/ml
 Melting point -57°C

C₈H₁₈
 M = 114.23 g/mol
 CAS-No.: 111-65-9
 HS-No.: 29011000
 EC-No.: 203-892-1

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1262
 WGK: 1
 Danger
 H410-H315-H225-H336-H304
 P273-P301+P330+P331-P301+P310-
 P302+P352-P210

**Specification:**

Assay (HPLC) min. 99 %
 Residue after evaporation . max. 0.005 %
 Water (K.F.) max. 0.02 %

Cr max. 0.0001 %
 Cu max. 0.0001 %
 Fe max. 0.0001 %

Pb max. 0.0001 %
 Zn max. 0.0001 %

Order-No.	Quantity
A6801,0100	100 ml
A6801,0250	250 ml

Literature: (1) Fredricks, D.N. & Relman, D.A. (1999) *BioTechniques* **26**, 198-200

Paraffin Removal from Tissue Sections for Digestion and PCR Analysis.

Comment: Fredricks and Relman (1) present a short and simple protocol for the removal of paraffin from tissue sections.

1. Add 1 ml of octane to a tissue section in a 1.5 ml microcentrifuge tube, and vortex for 10 sec. at maximum speed.
2. Add 75 µl of 100 % Methanol to the tube and vortex.
3. Centrifuge the sample once at 7000 x g for 2 minutes. Octane forms the upper layer, and methanol with tissue forms the lower layer.
4. Remove the upper octane layer from the sample, and remove the methanol that pellets with the tissue by vacuum (according to ref. 1).

1-Octanesulfonic acid sodium salt IPC grade

C

Sodium 1-octane sulfonate	$C_8H_{17}NaO_3S$ $M = 216.28$ g/mol CAS-No.: 5324-84-5 HS-No.: 29041000 EC-No.: 226-195-4	Storage: RT LGK: 10 - 13 Disposal: 3	WGK: 3* Warning H315-H319 P302+P352-P305+P351+P338
Melting point	> 300°C		



Specification:		Order-No.	Quantity
Assay (titr.)	min. 99 %	A1016,0005	5 g
Solubility (10 %; H ₂ O)	clear, colorless	A1016,0010	10 g
		A1016,0025	25 g

Literature: (1) Hancock, W.S. & Harding, D. (1982) *J. Chromatogr.* **228**, 273-278

Rapid analysis of 3-Methylhistidine in urine, plasma, muscle and amniotic fluid with a single HPLC system but with different ion-pairing reagents.

1-Octanol

Boiling point	~195°C	$C_8H_{18}O$ $M = 130.23$ g/mol CAS-No.: 111-87-5 HS-No.: 29051685 EC-No.: 203-917-6	Storage: RT LGK: 3 B	WGK: 1 Warning H319 P305+P351+P338
Density (d 20°C/4°C)	0.822 - 0.826			
Melting point	-16°C			



1-Octanol for the isolation of plant nuclei

B

Specification:		Order-No.	Quantity
Assay (HPLC)	min. 99 %	A3461,0500	500 ml
Identity (IR)	complies	A3461,1000	1 L
Loss on drying	max. 0.1 %		

Literature: (1) Watson, J.C. & Thompson, W.F. (1986) *Methods Enzymol.* **118**, 57-75

Purification and restriction endonuclease analysis of plant nuclear DNA.

1-Octanol pure

C

Specification:		Order-No.	Quantity
Assay (HPLC)	min. 98 %	A3216,0500	500 ml
		A3216,1000	1 L
		A3216,10006	6 x 1 L

Octanoyl-N-methylglucamide see MEGA-8 Page 524

Octyl alcohol see 1-Octanol Page 581

n-Octyl-β-D-glucopyranoside

Octylglucoside, OG	$C_{14}H_{28}O_6$ $M = 292.38$ g/mol CAS-No.: 29836-26-8 HS-No.: 29400000 EC-No.: 249-887-8	Storage: 2-8°C LGK: 10 - 13 Disposal: 3
CMC (20°C)	25 - 30 mM	
Classification:	nonionic detergent	
Melting point	98 - 103°C	

n-Octyl-β-D-glucopyranoside Crystallography grade

B

Specification:		Order-No.	Quantity
Assay	min. 99.5 %	A6813,0001	1 g
α20°C/D; 5 %; H ₂ O	-33° ± 2°	A6813,0005	5 g
Solubility (1 %; H ₂ O, EtOH)	clear, colorless	A6813,0010	10 g
Thermal transition	70.1°C (smectic A)		

n-Octyl-β-D-glucopyranoside BioChemica

B

Specification:		Order-No.	Quantity
Assay	min. 99 %	A1010,0001	1 g
α20°C/D; 5 %; H ₂ O	-33° ± 2°	A1010,0005	5 g
Water (K.F.)	max. 0.1 %	A1010,0010	10 g
		A1010,0025	25 g

Literature: (1) Baron, C. & Thompson, T.E. (1975) *Biochim. Biophys. Acta* **382**, 276-285

(2) Stubbs, G.W. *et al.* (1976) *Biochim. Biophys. Acta* **425**, 46-56

(3) Chattopadhyay, A. & London, E. (1984) *Anal. Biochem.* **139**, 408-412

(4) Lorber, B. *et al.* (1990) *Biochim. Biophys. Acta* **1023**, 254-265

Solubilization of bacterial membrane proteins using alkyl glucosides and dioctanoyl phosphatidylcholine.

Alkyl glucosides as effective solubilizing agents for bovine rhodopsin: a comparison with several commonly used detergents.

Determination of the CMC under exclusion of the charge of the detergent.

Purification of octylglucoside and determination of the CMC.

Comment: Octylglucoside is one of the most commonly used detergents for membrane protein studies. It has many good properties, allowing the isolation of functional, active proteins. It is a non-ionic, readily water-soluble detergent with a high CMC (~25 mM), facilitating its removal by dialysis. Besides, it shows no absorption at 280 nm. Solutions, usually 30 mM, have to be prepared fresh.

***n*-Octyl-D-glucopyranoside**

B

Mixture of Anomers $C_{14}H_{28}O_6$ Storage: 2-8°C
 $M = 292.38$ g/mol LGK: 10 - 13
 Classification: nonionic detergent CAS-No.: 54549-23-4 Disposal: 3
 HS-No.: 29400000
 EC-No.: 259-216-0

Specification:

Assay (TLC) approx. 95 %
 Loss on drying max. 10 %
 α -Anomere : β -Anomere ~7 : 3

Order-No.
A6824,0005 5 g
A6824,0025 25 g

Octylglucoside see *n*-Octyl- β -D-glucopyranoside Page 581

n-Octyl- β -D-maltopyranoside see *n*-Octyl- β -D-maltoside BioChemica Page 582

***n*-Octyl- β -D-maltosid BioChemica**

B

n-Octyl- β -D-maltopyranoside $C_{20}H_{38}O_{11}$ Storage: 2-8°C
 $M = 454.40$ g/mol LGK: 10 - 13
 CMC (20°C) 23 mM HS-No.: 29389090 Disposal: 3
 Classification: nonionic detergent

Specification:

Assay min. 99 % A (1 cm/1 % in water HPLC grade)
 α 20°C/D; 1 %, H_2O +57.0 $\pm$ +0.5° 260 nm max. 0.04
 pH (1 %; H_2O) 6.0 - 7.0

Order-No.
A6809,0250 250 mg
A6809,0001 1 g

Octylphenol-polyethylene glycolether see Triton® X-114 BioChemica Page 841

***n*-Octyl- β -D-thioglucopyranoside BioChemica**

B

Octylthioglucoside $C_{14}H_{28}O_5S$ Storage: 2-8°C
 $M = 308.44$ g/mol LGK: 10 - 13
 CMC (H_2O ; 20°C) 9 mM CAS-No.: 85618-21-9 Disposal: 3
 Melting point 128°C HS-No.: 29329900

Specification:

Assay min. 99% A (1 cm/0.5 %, water HPLC grade)
 α 20°C/D; 1 %, MeOH -52° - -54° 260 nm max. 0.25
 Solubility (8 %; H_2O) clear, colorless
 α -Isomere (HPLC) max. 0.01 %
n-Octanthiol (HPLC) max. 0.001 %

Order-No.
A1145,0001 1 g
A1145,0005 5 g
A1145,0010 10 g
A1145,0025 25 g

Literature: (1) Saito, S. & Tsuchiya, T. (1984) *Biochem. J.* **222**, 829-832

(2) Tsuchiya, T. & Saito, S. (1984) *J. Biochem.* **96**, 1593-1597

Characteristics of *n*-Octyl- β -D-thioglucopyranoside, a new non-ionic detergent useful in membrane biochemistry.

Use of *n*-Octyl- β -D-thioglucopyranoside, a new nonionic detergent, for solubilization and reconstitution of membrane proteins.

Comment: Octylthioglucoside was developed as an alternative to octylglucoside. The CMC of Octylthioglucoside was determined to be 9 mM. It is more stable than Octylglucoside and is not cleaved by β -glucosidases.

Octylthioglucoside see *n*-Octyl- β -D-thioglucopyranoside BioChemica Page 582

Oenin chloride

Malvidin-3-glucoside $C_{23}H_{25}ClO_{12}$ Storage: 2-8°C
 from *Vitis vinifera* $M = 528.88$ g/mol
 CAS-No.: 7228-78-6
 HS-No.: 29389090
 EC-No.: 230-631-9

Oenin chloride HPLC grade



B

Specification:

Assay min. 97 %

Order-No.
A8707,0010 10 mg
A8707,0020 20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Oenin chloride pure



B

Specification:

Assay min. 85 %

Order-No.
A8731,0100 100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

OG see *n*-Octyl- β -D-glucopyranoside Page 581

OGY Agar Base see Oxytetracycline Glucose Yeast Extract Agar Base Page 589

OGYE Selective Supplement see Supplements for Microbiological Media Page 786

Oil, O-live

B

Olive oil HS-No.: 15091090 Storage: RT

Specification:

Eicosenoic acid * approx. 5 %
 Linoleic acid * approx. 12 %
 Oleic acid * approx. 66 %
 Palmitic acid * approx. 9 %

Palmitoleic acid * approx. 5 %
 Squalene * max. 1.5 %

Order-No.	Quantity
A7929,0500	500 ml
A7929,0750	750 ml
A7929,1000	1 L

* Fatty acids bound to glycerol.

Literature: (1) http://en.wikipedia.org/wiki/Olive_oil (as at January 28th 2008). Wikipedia® is a registered trademark of Wikimedia Foundation Inc.

Comment: Olive oil is a fruit oil obtained from the olive (*Olea europaea*; family Oleaceae along with lilacs, jasmine and ash trees), a traditional tree crop of the Mediterranean Basin. It is commonly used in cooking, cosmetics, pharmaceuticals, and soaps and as a fuel for traditional oil lamps. Olive oil is healthier than other sources of alimentary fat because of its high content of monounsaturated fat (mainly oleic acid) and polyphenols. Olive oil is composed mainly of oleic acid and palmitic acid and other fatty acids, along with traces of squalene and sterols (phytosterol and tocosterols). Olive oil contains a group of related natural products with potent antioxidant properties which give extra-virgin unprocessed olive oil its bitter and pungent taste and which are esters of tyrosol and hydroxytyrosol, including oleocanthal and oleuropein.

Oil bath filling

C

Heating bath liquid HS-No.: 27101999 Storage: RT
 EC-No.: 203-473-3 LGK: 10-13
 Disposal: 3

- for oil baths up to 250°C
- miscible with water

Order-No.	Quantity
A6779,1000	1 L
A6779,10006	6 x 1 L
A6779,5000	5 L

Oil Red IV see Sudan IV (C.I. 26105) Page 777

Okadaic acid

B

from *Prorocentrum concavum*

C₄₄H₆₈O₁₃
 M = 805.01 g/mol
 CAS-No.: 78111-17-8
 HS-No.: 29420000

Storage: -20°C
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/I
 UN3462
 Danger
 H311-H302-H335-H330
 P310-P284-P260-P280



Specification:

Assay min. 98 %
 Solubility (DMSO) clear

Order-No.	Quantity
A2200,0025	25 µg
A2200,0050	50 µg
A2200,0100	100 µg

Literature: (1) Takai, A. *et al.* (1987) *FEBS Lett.* **217**, 81-84

- (2) Bialojan, C. & Takai, A. (1988) *Biochem. J.* **256**, 283-290
 (3) Suganuma, M. *et al.* (1988) *Proc. Natl. Acad. Sci. USA* **85**, 1768-1771
 (4) Cohen, P. *et al.* (1990) *Trends Biochem. Sci.* **15**, 98-102

Smooth muscle myosin phosphatase inhibition and force enhancement by black sponge toxin.
 Inhibitory effect of marine-sponge toxin, okadaic acid, on protein phosphatases.
 Okadaic acid: An additional non-phorbol-12-tetradecanoate-13-acetate-type tumor promoter.
 Okadaic acid: a new probe for the study of cellular regulation.

Comment: **Caution:** The lethal dose (LD₅₀; mouse) is 192 µg/kg. Wear suitable protective clothing, gloves and mask.

Okadaic acid sodium salt

B

C₄₄H₆₇NaO₁₃
 M = 827.00 g/mol
 CAS-No.: 209266-80-8
 HS-No.: 29420000

Storage: -20°C
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/I
 UN3462
 Danger
 H331-H335-H311-H301
 P307+P311-P301+P310-P302+P352-P280



Specification:

Assay min. 98 %

Order-No.	Quantity
A2563,0025	25 µg
A2563,0100	100 µg

Oleic acid pure Ph. Eur., NF

C

Boiling point 360°C (1013^h hPa)
 Density (d 20°C/4°C) .. 0.889 - 0.895
 Melting point max. 10°C

$C_{18}H_{34}O_2$
 $M = 282.47$ g/mol
 CAS-No.: 112-80-1
 HS-No.: 29161500
 EC-No.: 204-007-1

Storage: RT
 LGK: 10 - 13

WGK: 1

Specification:

Assay (HPLC) 65.0 - 88.0 %
 Acid number 196 - 204
 Appearance yellowish-brownish
 Identity complies
 Iodine value 87 - 95
 Mineral acid complies

Peroxide number max. 10.0
 Sulfated ash (800°C) .. max. 0.1 %
 Neutral fats / mineral oil complies

Order-No.	Quantity
A4420,0500	500 ml
A4420,1000	1 L
A4420,10006	6 x 1 L
A4420,2500	2.5 L
A4420,25004	4 x 2.5 L

Oleoside-11-methylester see Elenol acid glucoside HPLC grade Page 326

rac.-1-Oleoyle-glycerol BioChemica

B

DL-α-Monoolein, Monoolein, rac-Glycerol 1-monooleate

$C_{21}H_{40}O_4$
 $M = 356.50$ g/mol
 CAS-No.: 111-03-5
 HS-No.: 29161500
 EC-No.: 203-827-7

Storage: -20°C
 Shipment: wet ice

Melting range 30 - 35°C

Specification:

Assay (TLC) min. 99 %
 Appearance white powder
 IR spectrum complies

pH (1 %; H₂O) 5.0 - 7.0

Order-No.	Quantity
A8992,0100	100 mg
A8992,9001	1 g

Comment: The product is soluble in ethanol (more than 1 g / 1 ml EtOH).**Oleuropein**from *Olea europaea*

$C_{25}H_{32}O_{13}$
 $M = 540.52$ g/mol
 CAS-No.: 32619-42-4
 HS-No.: 29420000

Storage: 2-8°C

Oleuropein HPLC grade

B

Specification:

Assay min. 98 %

Order-No.	Quantity
A5309,0020	20 mg
A5309,0020DOC	20 mg
A5309,0050	50 mg
A5309,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Oleuropein pure

B

Specification:

Assay min. 90 %

Order-No.	Quantity
A6909,0500	500 mg
A6909,0001	1 g

Comment: Documents included: HPLC-DAD with UV spectrum.

Other concentrations on request !

Oligomycin BioChemica

B

mixture of A, B, and C isomers;
from *Streptomyces*
diastatochromogenes

C₄₅H₇₂O₁₂ (Oligomycin A)
M = 805.06 g/mol
CAS-No.: 1404-19-9
HS-No.: 29419000

Storage: -20°C

Warning
H302
P280



Melting point 84 - 100°C

Specification:

Assay min. 90 %
λ_{max} 225 nm

Order-No.	Quantity
A7673,0005	5 mg
A7673,0025	25 mg
A7673,0100	100 mg

Literature: (1) Glaser, E. et al. (1982) *Eur. J. Biochem.* **121**, 525-531

(2) Bouthyette, P.-Y. & Jagendorf, A.T. (1982) *Plant Physiol.* **69**, 888-896

(3) Arato-Oshima, T. et al. (1996) *J. Biol. Chem.* **271**, 25604-25610

(4) Cho, J.H. et al. (1997) *Biochem. J.* **324**, 971-980

(5) Shchepina, L.A. et al. (2002) *Oncogene* **21**, 8149-8157

Comparison of the Effects of Oligomycin and Dicyclohexylcarbodiimide on Mitochondrial ATPase and Related Reactions.

Oligomycin Effects on ATPase and Photophosphorylation of Pea Chloroplast Thylakoid Membranes.

Mechanism Responsible for Oligomycin-induced Occlusion of Na⁺ within Na/K-ATPase. Oligomycin inhibits store-operated channels by a mechanism independent of its effects on mitochondrial ATP.

Oligomycin, inhibitor of the F₀ part of H⁺-ATP-synthase, suppresses the TNF-induced apoptosis.

Comment: Oligomycin is a macrolide antibiotic, consisting of several components (Oligomycin A, B, C, D). It frequently is used as an inhibitor of the oxidative phosphorylation in mitochondria and photosynthetic bacteria. It binds to membrane-bound F₀-part of the mitochondrial H⁺-ATP-synthase (1), the Na/K-ATPase (3) or the membrane-bound Ca²⁺-dependent ATPase. In case of the Na/K-ATPase, Oligomycin stimulates the occlusion of Na⁺ to the ATPase and inhibits the exchange of sodium or potassium ions (I_{C₅₀ 4.5 μM; Ref. 3). Other ATPases (rat liver or beef heart) are even more sensitive (I_{C₅₀ 0.1 - 0.5 μg).}}

Solubility and Stability: Oligomycin is soluble in absolute ethanol. Usually, it is prepared as a stock solution of 10 mg/ml. The dry substance and solutions are stable if stored at -20°C.

Oligomycin A BioChemica

B

from *Streptomyces*
diastatochromogenes

C₄₅H₇₂O₁₁
M = 791.06 g/mol
CAS-No.: 579-13-5
HS-No.: 29419000

Storage: 2-8°C

Warning
H302
P280



Melting point 148 - 152°C

Solubility (10 mg/ml MeOH)

..... clear, colorless

Specification:

Assay approx. 97 %
λ_{max} 225 nm

Order-No.	Quantity
A7747,0005	5 mg
A7747,0025	25 mg

Comment: Oligomycin A is a macrolide antibiotic that inhibits membrane-bound mitochondrial ATPase. It is soluble in dichloromethane, DMSO and ethanol.

Oligomycin B BioChemica

B

from *Streptomyces*
diastatochromogenes

C₄₅H₇₂O₁₂
M = 841.08 g/mol
CAS-No.: 11050-94-5
HS-No.: 29419000

Storage: -20°C

Warning
H302
P280



Melting point 156 - 164°C

Specification:

Assay approx. 97 %
λ_{max} 225 nm
Solubility (5 mg/ml MeOH) clear, colorless

Order-No.	Quantity
A7866,0001	1 mg
A7866,0005	5 mg

Olive oil see Oil, O-live Page 583

OMEGA see MEGA-8 Page 524

recombinant Human Oncostatin M see rHu OSM Page 587

ONPG see 2-Nitrophenyl-β-D-galactopyranoside *BioChemica* Page 573

OPD see o-Phenylenediamine, free base *BioChemica* Page 620

Orange G (C.I. 16230)

C

Acid Orange 10, 7-Hydroxy-8-phenyl-azo-1,3-naphthalenedisulfonic acid, Benzeneazo-1-(2-naphthalene-6,8-disulfonic acid) disodium salt

C₁₆H₁₀N₂Na₂O₇S₂
M = 452.36 g/mol
CAS-No.: 1936-15-8
HS-No.: 32041200
EC-No.: 217-705-6

Storage: RT
LGK: 10 - 13

WGK: 2

Solubility (20°C) 70 g/L (H₂O)

Specification:

Assay (UV) approx. 70 %
λ_{max} (H₂O) 477 - 485 nm
Loss on drying max. 15 %
pH (1 %; H₂O; 20°C) approx. 9

Order-No.	Quantity
A1404,0010	10 g
A1404,0025	25 g
A1404,0100	100 g

Literature: (1) Xin, J.-H. et al. (1992) *Genes & Dev.* **6**, 481-496

Cloning of a member of the *Ets*-oncogene family.

Comment: For stopping the reaction of an 'electrophoretic mobility-shift assay', 5 μl of a mixture of 10 % glycerol / 0.01 % orange G have been added per 20 μl sample. The samples have been loaded on a 5 % polyacrylamide gel (40 : 1).

Orange III see Methyl orange (C.I. 13025) Page 540

Orange-Serum Agar

C

		HS-No.: 38220000	Storage: RT LGK: 10 - 13	WGK: 1	
Composition:		Specification:			
Agar	15.0 g/L	pH before autoclaving . . . approx. 5.5 (20°C)			
Buffer	3.0 g/L				
Glucose	4.0 g/L				
Orange serum (solid form)	5.0 g/L				
Peptones	13.0 g/L				
				Order-No.	Quantity
				A4816,0500	500 g
				A4816,5000	5 kg

Literature: (1) APHA (1976) Compendium of Methods for Microbiological Examination of foods.**Comment:** This solid medium is used for the cultivation and enumeration of microorganism in citrus juice concentrates.**Directions:** Suspend 40 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. The medium is heat sensitive. No further sterilization is necessary or desirable. Store the prepared medium at 2-8°C protected from light.

Orientin HPLC grade

B

<i>8-C-Glucoluteolin, Lutexin</i> from <i>Adonis vernalis</i>		C ₂₁ H ₂₀ O ₁₁ <i>M</i> = 448.36 g/mol CAS-No.: 28608-75-5 HS-No.: 29420000	Storage: 2-8°C		
Specification:				Order-No.	Quantity
Assay	min. 99 %			A5310,0005	5 mg
				A5310,0010	10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Orientosid see Vitexin HPLC grade Page 857

L-Ornithine hydrochloride

<i>L-2,5-Diaminovaleric acid hydrochloride</i>		C ₅ H ₁₂ N ₂ O ₂ · HCl <i>M</i> = 168.62 g/mol CAS-No.: 3184-13-2 HS-No.: 29224985 EC-No.: 221-678-6	Storage: RT LGK: 10 - 13		
Solubility (25°C)	100 g/L (H ₂ O)				

L-Ornithine hydrochloride Cell culture grade

B

Specification:			Order-No.	Quantity	
Pyrogen test	complies	Sulfate	max. 0.02 %	A3482,0050	50 g
Assay (titr.)	min. 99 %	As	max. 0.0001 %	A3482,0100	100 g
α20°C/D; 4 %, 6 M HCl	+23° - +25°	Fe	max. 0.001 %	A3482,0250	250 g
Other amino acids	max. 0.5 %	Pb	max. 0.001 %	A3482,0500	500 g
Ammonium	max. 0.02 %				
◆ All amino acids from AppliChem are of non-animal origin!					

L-Ornithine hydrochloride *BioChemica*

B

Specification:			Order-No.	Quantity		
Assay (titr.)	min. 99 %	Sulfate	max. 0.02 %	A3450,0050	50 g	
α20°C/D; 4 %, 6 M HCl	+23° - +25°	A (1 cm/1 M in H ₂ O)		A3450,0100	100 g	
Heavy metals (as Pb)	max. 0.001 %	260 nm		max. 0.06	A3450,0250	250 g
Insoluble matter	complies	280 nm		max. 0.06	A3450,0500	500 g
Other amino acids	max. 0.5 %			A3450,1000	1 kg	
Ammonium	max. 0.02 %					
◆ All amino acids from AppliChem are of non-animal origin!						

L-Ornithine hydrochloride pure DAB

C

Specification:			Order-No.	Quantity
Assay (titr.)	99.0 - 102.0 %	pH (2.5 %; H ₂ O)	A1343,0050	50 g
α20°C/D; 4 %, 6 M HCl	+23° - +25°	Other amino acids	A1343,0100	100 g
Appearance of solution	complies	Ammonium	A1343,0250	250 g
Heavy metals (as Pb)	max. 0.001 %	Sulfate	A1343,0500	500 g
Identity	complies	Fe	A1343,1000	1 kg
Loss on drying	max. 0.5 %		A1343,10006	6 x 1 kg
Sulfated ash	max. 0.1 %			
◆ All amino acids from AppliChem are of non-animal origin!				

Orthophosphoric monoester phosphohydrolase see Phosphatase, acid from sweet potato Page 622

rHu OSM

B

recombinant Human Oncostatin M
lyophilized without additives
from *E. coli*

$M = 26$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8531,0002	2 µg
A8531,0010	10 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

Osmium tetroxide Microscopy grade

B

OsO_4
 $M = 254.20$ g/mol
CAS-No.: 20816-12-0
HS-No.: 28439090
EC-No.: 244-058-7

Storage: RT
LGK: 6.1 B
Disposal: 27

Class / PG: 6.1/I
UN2471
WGK: 3
Danger
H300-H310-H314-H330
P304+P340-P302+P352-P280-
P305+P351+P338

**Specification:**

Identity complies

Order-No.	Quantity
A7405,0500	500 mg
A7405,0001	1 g

OTC see Oxytetracycline hydrochloride Page 589
Oxalaldehyde see Glyoxal - Solution 40 % Molecular biology grade Page 388
Oxalic acid ammonium salt see di-Ammonium oxalate monohydrate Page 102

Oxalic acid dihydrateDicarboxylic acid C_2

$\text{C}_2\text{H}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$
 $M = 126.07$ g/mol
CAS-No.: 6153-56-6
HS-No.: 29171100
EC-No.: 205-634-3

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1
Warning
H312-H302
P302+P352

Melting point 101°C
Solubility (20°C) 102 g/L (H_2O)

**Oxalic acid dihydrate p. A.**

C

Specification:

Assay (titr.) min. 99.5 %
Insoluble matter max. 0.005 %
Sulfated ash max. 0.01 %
Chloride max. 0.005 %
Sulfate max. 0.005 %
Ca max. 0.001 %

Fe max. 0.005 %
Pb max. 0.0005 %

Order-No.	Quantity
A2639,0250	250 g
A2639,0500	500 g
A2639,1000	1 kg
A2639,10006	6 x 1 kg
A2639,5000	5 kg

Oxalic acid dihydrate pure

C

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Chloride max. 0.002 %
Sulfate max. 0.02 %

Order-No.	Quantity
A2417,0500	500 g
A2417,1000	1 kg
A2417,10006	6 x 1 kg
A2417,5000	5 kg
A2417,9010	10 kg
A2417,9025	25 kg

Oxalic acid dihydrate technical grade

C

Specification:

Assay (titr.) min. 98 %
Identity (IR) complies

Order-No.	Quantity
A6402,5000	5 kg
A6402,9010	10 kg
A6402,9025	25 kg

Oxalic acid - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: 1

Oxalic acid - Solution 10 % pure

C

Warning
H312-H302
P302+P352-P301+P330+P331-P280**Composition:**
Oxalic acid · 2H₂O (A2639) . 140 g/L

Order-No.	Quantity
A3334,1000	1 L
A3334,10006	6 x 1 L
A3334,2500	2.5 L
A3334,25004	4 x 2.5 L
A3334,5000	5 L

Oxalic acid - Standard volumetric solution (0.25 M)

C

0.25 mol/L (0.5 N Solution)

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A0408,1000	1 L
A0408,5000CT	5 L
A0408,5000PE	5 L

Oxalic acid - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.2 N Solution)

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A3353,1000	1 L
A3353,10006	6 x 1 L
A3353,5000CT	5 L
A3353,5000PE	5 L

Oxalic acid - Standard volumetric solution (0.05 M)

C

0.05 mol/L (0.1 N Solution)

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A3374,1000	1 L
A3374,10006	6 x 1 L
A3374,5000CT	5 L
A3374,5000PE	5 L

Oxalic acid - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.02 N Solution)

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A5481,1000	1 L
A5481,10006	6 x 1 L
A5481,5000CT	5 L
A5481,5000PE	5 L

Oxalic acid - Standard volumetric solution (0.005 M)

C

0.005 mol/L (0.01 N Solution)

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A4541,1000	1 L
A4541,10006	6 x 1 L
A4541,5000CT	5 L
A4541,5000PE	5 L

Oxalic acid dipotassium salt see di-Potassium oxalate monohydrate Page 657

Oxaloacetic acid BioChemica

B

2-Oxosuccinic acid

C₄H₄O₅
M = 132.07 g/mol
CAS-No.: 328-42-7
HS-No.: 29183000
EC-No.: 206-329-8Storage: 2-8°C
LGK: 10-13
Disposal: 4Class / PG: 8/II
UN3261
Danger
H314
P280-P305+P351+P338-P313**Specification:**
Assay (titr.) min. 97 %
Loss on drying max. 0.5 %
pH (5 %; H₂O) 1 - 2

Order-No.	Quantity
A2201,0005	5 g
A2201,0010	10 g
A2201,0025	25 g

Oxamic acid sodium salt

B

Sodium oxamate

$C_2H_2NNaO_3$
 $M = 111.04 \text{ g/mol}$
CAS-No.: 565-73-1
HS-No.: 29241900
EC-No.: 209-290-5

Storage: RT
LGK: 10 - 13
Disposal: 3

P262-P260

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.005 %
Solubility (5 %; H_2O) clear, colorless

Order-No.	Quantity
A3273,0005	5 g
A3273,0025	25 g

Literature: (1) Holbrook, J.J. *et al.* (1975) *Lactate Dehydrogenase in The Enzymes* 3rd Edition vol. 11, part A (Boyer, P.D., ed.), pp. 191 - 292, Academic Press, New York.

Comment: Sodium oxamate is a glycolytic inhibitor. It competitively inhibits the lactate dehydrogenase with respect to pyruvate.

Oxamycine see D-Cycloserine Page 253

Oxidation - Solution DNA synthesis grade

B

Density (d 20°C/4°C) .. 0.93

HS-No.: 38220000

Storage: 2-8°C
LGK: 3 A
Disposal: 5

Class / PG: 3/II
UN1993
Danger
EUH019-H225-H319-H335-H332-H312-
H302
P243-P280-P210-P273



Composition:

Iodine 25.38 g/L (0.1 mol/L)
Pyridine 10.0 %
Tetrahydrofuran 88.0 %
Water 2.0 %

Order-No.	Quantity
A0682,0100	100 ml
A0682,0250	250 ml
A0682,1000	1 L

Oxin see 8-Hydroxyquinoline Page 428

2,2'-Oxobispropane see Diisopropyl ether Page 281

2-Oxobutyric acid sodium salt see α -Ketobutyric acid sodium salt *BioChemica* Page 470

2-Oxoglutaric acid see α -Ketoglutaric acid *BioChemica* Page 470

2-Oxoglutaric acid disodium salt dihydrate see α -Ketoglutaric acid disodium salt dihydrate *BioChemica* Page 471

2-Oxoglutaric acid potassium salt see α -Ketoglutaric acid monopotassium salt *BioChemica* Page 471

2-Oxoglutaric acid sodium salt see α -Ketoglutaric acid sodium salt *BioChemica* Page 471

2-Oxopropionic acid see Pyruvic acid Page 679

2-Oxosuccinic acid see Oxaloacetic acid *BioChemica* Page 588

Oxynitrilase see Hydroxynitrile Lyase, plant Technical grade Page 427

Oxyntomodulin (porcine) see Glucagon 1-37 Page 375

Oxytetracycline Dextrose Yeast Extract Agar Base Supplement see Supplements for Microbiological Media Page 786

Oxytetracycline Glucose Yeast Extract Agar Base

C

OGY Agar Base

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 13.0 g/L
Glucose 20.0 g/L
Vitamin H 0.0001 g/L
Yeast extract 5.0 g/L

Specification:

pH before autoclaving .. approx. 7.0 (20°C)

Order-No.	Quantity
A5819,0500	500 g
A5819,5000	5 kg

♦ **Attention:** Please note that a supplement (A6790) exists for this agar. Please order separately.

Literature: (1) Mossel *et al.* (1970) *Appl. Bact.* **35**, 454.

Comment: This selective medium is used for the enumeration of moulds and yeast.

Directions: Suspend 19 g in 500 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of one vial of "OGYE Selective Supplement" (A6790). Mix well before pouring. Store the prepared medium at 2-8°C.

Oxytetracycline hydrochloride

B

5-Hydroxytetracycline hydrochloride,
OTC

$C_{22}H_{24}N_2O_9 \cdot HCl$
 $M = 496.90 \text{ g/mol}$
CAS-No.: 2058-46-0
HS-No.: 29413000
EC-No.: 218-161-2

Storage: RT
protected from light

Warning
H312-H332-H302
P315-P280



Specification:

Assay min. 95 %
Loss on drying max. 2 %

Order-No.	Quantity
A5257,0010	10 g
A5257,0025	25 g
A5257,0100	100 g

Comment: Oxytetracycline hydrochloride (OTC) is the hydrochloride form of Terramycin. In tissue culture, this antibiotic is used to treat mycoplasma infections (5 - 10 µg/ml). It is recommended to change the medium every three days containing fresh antibiotic. A significant cytotoxic effect on the cultured cells is observed at a concentration of 35 µg/ml. For optimal antimicrobial activity, the pH should be adjusted between 5.5 and 6.5.

Solubility and stability: OTC is very soluble in water (1 g/ml), but it hydrolyzes during storage at neutral pH in concentrated solutions. In addition, crystals of Oxytetracycline precipitate from such concentrated solutions. At neutral pH and 37°C, it is stable for approx. 1 day only (at room temperature 7 days)! Highest stability is achieved in the acidic pH range from 1 - 2.5 (approx. 30 days).

PABA see 4-Aminobenzoic acid Page 86
 Paclitaxel see Taxol *BioChemica* Page 797
 Palladiumdichloride see Palladium(II) chloride pure Page 590

Palladium(II) chloride pure

C

Palladiumdichloride

PdCl₂
M = 177.31 g/mol
 CAS-No.: 7647-10-1
 HS-No.: 28439090

Storage: RT
 LGK: 8 B
 Disposal: 27

Class / PG: 8/III
 UN1759
 WGK: 1
 Warning
 H319-H315-H317
 P305+P351+P338-P280-P302+P352



Specification:

Assay min. 59 % Pd
 Co max. 0.0002 %
 Cu max. 0.002 %

Fe max. 0.001 %
 Ni max. 0.0001 %
 Pb max. 0.0002 %

Zn max. 0.0002 %

Order-No.	Quantity
A0862,0005	5 g
A0862,0010	10 g

Palmityltrimethylammonium bromide see Cetyltrimethylammonium bromide Page 194

Pancreatin

B

from porcine pancreas

CAS-No.: 8049-47-6
 HS-No.: 35079090
 EC-No.: 232-468-9

Storage: 2-8°C
 LGK: 10 - 13

WGK: 1
 Danger
 H315-H317-H335-H334-H319
 P302+P352-P280-P305+P351+ 338-
 P342+P311-P304+P341



Specification:

Loss on drying max. 5 %
 Amylase min. 22500 FIP-U/g
 Lipase min. 22500 FIP-U/g
 Protease min. 1050 FIP-U/g

Order-No.	Quantity
A0585,0100	100 g
A0585,0250	250 g
A0585,0500	500 g

Comment: Conversion of the units: 6000 FIP-Units of the Lipase correspond to 1X USP-Unit. The product supplies corresponds to 4X USP-Units.

D-Panose *BioChemica*

B

Melting point 141°C

C₁₈H₃₂O₁₆
M = 504.46 g/mol
 CAS-No.: 33401-87-5
 HS-No.: 29400000
 EC-No.: 251-500-2

Storage: RT

Specification:

Assay min. 99 %
 α20°C/D; 4 %, H₂O +163° (+155.5°; 1h)

Order-No.	Quantity
A6880,0100	100 mg
A6880,0250	250 mg
A6880,0001	1 g

D-Pantothenic acid calcium salt

Calcium D-pantothenate

C₁₈H₃₂CaN₂O₁₀
M = 476.54 g/mol
 CAS-No.: 137-08-6
 HS-No.: 29362400
 EC-No.: 205-278-9

Storage: RT
 LGK: 10 - 13
 Disposal: 3

D-Pantothenic acid calcium salt *BioChemica*

B

Specification:

Assay (titr.) min. 98 %
 α20°C/D; 5 %, H₂O +25° - +29°
 Heavy metals (as Pb) max. 0.002 %
 Loss on drying max. 3 %

pH (5 %; H₂O) 6.5 - 8.0

Order-No.	Quantity
A2088,0025	25 g
A2088,0100	100 g
A2088,0500	500 g

D-Pantothenic acid calcium salt pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.0 - 101.0 %
 α20°C/D; 5 %, H₂O +25.5° - +27.5°
 Alkalinity complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.002 %
 Identity complies

Loss on drying max. 3 %
 Nitrogen (Kjeldahl) 5.7 - 6.0 %
 Ordinary impurities (HPLC) complies
 max. 1.0 %
 Organic vol. impurities complies
 pH (5 %; H₂O) 6.8 - 8.0

3-Aminopropionic acid
 complies
 Chloride max. 0.02 %

Order-No.	Quantity
A7213,0100	100 g
A7213,0500	500 g

Papain

B

from *Carica papaya*

Solubility (20°C) soluble (H₂O)

M = ~23000 g/mol
CAS-No.: 9001-73-4
HS-No.: 35079090
EC-No.: 232-627-2

Storage: 2-8°C
LGK: 3 A
Disposal: 3

WGK: 1
Danger
H315-H335-H319-H334
P342+P311-P305+P351+P338-P260-P261



Specification:

Activity (BAEE) approx. 2 U/mg
Activity Casein (pH 6, 40°C) >30000 USP U/mg
Water (K.F.) max. 6 %

Order-No.	Quantity
A3824,0025	25 g
A3824,0100	100 g

Comment: Papain is a member of the class of proteolytic enzymes that needs a free sulfhydryl group for activity (group of the cysteine proteases). The pH optimum of Papain is approx. pH 6 and the optimum temperature for activity is 65°C. At the isoelectric point of approx. pH 9.6, the best solubility is achieved. Please note that even at this point, Papain will be dissolved incompletely. The recommended solvent is water.

Papanicolaous - Solution 2b

B

Density (d 20°C/4°C) .. approx. 0.83
Solubility (25°C) soluble (H₂O)

HS-No.: 38220000

Storage: RT
LGK: 3 A

Class / PG: 3(6.1)/II
UN1992
WGK: 1
Danger
H330-H370-H225
P309+P311-P280-P233-P210



Specification:

λ_{max} 480 - 490 nm
pH (20°C) 7.0 - 7.5

Order-No.	Quantity
A3825,1000	1 L
A3825,2500	2.5 L

p-APMSF see APMSF hydrochloride BioChemica Page 114

Paraffin oil

Mineral oil, Vaseline oil

CAS-No.: 8012-95-1
HS-No.: 27101985
EC-No.: 232-384-2

Storage: RT
LGK: 10 - 13
Disposal: 3

Paraffin oil heavy white oil

B

Specification:

Acidic/alkaline react. subst. complies
Aromatic polycyclic hydrocarbons complies
Behaviour against H₂SO₄ complies
Density (d 20°C/4°C) ... approx. 0.88
Dyn. viscosity (20°C) ... 110 - 230 mPa · s

Order-No.	Quantity
A4043,0100	100 ml
A4043,0250	250 ml
A4043,0500	500 ml

Paraffin oil light Molecular biology grade

B

Specification:

Density (d 20°C/4°C) 0.810 - 0.875
Dyn. viscosity (20°C) 25 - 80 mPa · s
Solid paraffin complies

Order-No.	Quantity
A2135,0100	100 ml
A2135,0250	250 ml
A2135,0500	500 ml

Paraffin oil light "dropper bottle" PCR grade

B

Specification:

Density (d 20°C/4°C) 0.810 - 0.875
Dyn. viscosity (20°C) 25 - 80 mPa · s
Solid paraffin complies

Order-No.	Quantity
A3920,0005	5 ml
A3920,0015	15 ml

Paraffin oil light pure Ph. Eur.

C

Specification:

Acidic/alkaline react. subst. complies
Arom. polycyclic hydrocarb. complies
Behaviour against H₂SO₄ complies
Density (d 20°C/4°C) 0.810 - 0.875
Dyn. viscosity (20°C) 25 - 80 mPa · s
Identity complies
Solid paraffin complies

Order-No.	Quantity
A4692,1000	1 L
A4692,10006	6 x 1 L
A4692,2500	2.5 L
A4692,25004	4 x 2.5 L
A4692,5000	5 L
A4692,9010	10 L

Paraffin - Pastilles pure Ph. Eur. (mp 52 - 54°C)

C

Boiling point 350°C
Melting point 52 - 54°C

CAS-No.: 8002-74-2
HS-No.: 27122090
EC-No.: 232-315-6

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

Acidic/alkaline react. subst. complies
Behaviour against H₂SO₄ complies
Solidification point 52 - 54°C
Sulfated ash max. 0.05 %
Aromatic polycyclic hydrocarbons

..... complies
Sulfate max. 0.015 %

Order-No.	Quantity
A1809,0500	500 g
A1809,1000	1 kg
A1809,10006	6 x 1 kg
A1809,5000	5 kg

Paraffin - Pastilles pure Ph. Eur. (mp 58 - 60°C)

C

Melting point 58 - 60°C

CAS-No.: 8002-74-2
HS-No.: 27122090
EC-No.: 232-315-6

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

Needle penetration (25°C, 1/100 mm)
..... complies
Needle penetration (40°C, 1/100 mm)
..... complies
Oil 0.0 - 0.5 %
Solidification point 58 - 60°C

Order-No.	Quantity
A4264,0500	500 g
A4264,1000	1 kg
A4264,10006	6 x 1 kg
A4264,5000	5 kg
A4264,9010	10 kg
A4264,9025	25 kg

Paraformaldehyde BioChemica

B

Polyoxymethylene

(CH₂O)_n
M = 30.03 g/mol
CAS-No.: 30525-89-4
HS-No.: 29126000
EC-No.: 200-001-8

Storage: 2-8°C
LGK: 11
Disposal: 3

Class / PG: 4.1/III
UN2213
WGK: 3*
Warning
H317-H315-H351-H302-H228-H332-
H319-H335
P308+P313-P305+P351+P338-
P302+P352-P304+P340-P281



Density (d 20°C/4°C) .. 1.4
Explosive limits 7 - 73 Vol.%
Ignition temperature .. 370°C
Melting point 120 - 170°C

Specification:

Assay (titr.) min. 95 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter max. 0.1 % (after
hydrolysis)
Sulfated ash max. 0.05 %

Order-No.	Quantity
A3813,0250	250 g
A3813,0500	500 g
A3813,1000	1 kg
A3813,5000	5 kg

Paromomycin sulfate BioChemica

B

Monomycin, Metamycin, Catenulin,
Zygomycin, Aminosidin

C₂₃H₄₅N₅O₁₄S · H₂SO₄
M = 713.71 g/mol
CAS-No.: 1263-89-4
HS-No.: 29419000
EC-No.: 215-031-7

Storage: RT

WGK: 2

Specification:

Assay (cal. on dried subst.) . min. 675 U/mg
Solubility (50 mg/ml; H₂O) .. slightly turbid, color-
less

Order-No.	Quantity
A7699,0001	1 g
A7699,0005	5 g
A7699,0025	25 g

Literature: (1) Vicens, Q. & Westhof, E. (2001) *Structure* **9**, 647-658

(2) Takahashi, T. et al. (2003) *J. Biol. Chem.* **278**, 27672-27680

(3) Patnaik, D. & Khurana, P. (2003) *BMC Plant Biol.* **3**, 5

(4) Torbert, K.A. et al. (1995) *Plant Cell Reports* **14**, 635-640

Crystal Structure of Paromomycin Docked into the Eubacterial Ribosomal Decoding A Site.

Various Effects of Paromomycin in tmRNA-directed *trans*-Translation.

Genetic transformation of Indian bread and pasta wheat by particle bombardment of mature embryo-derived calli.

Use of paromomycin as a selective agent for oat transformation.

Comment: Paromomycin is a strongly cationic oligosaccharide type or aminoglycoside antibiotic, isolated from several *Streptomyces* species. It binds to the ribosomal RNA at the aminoacyl-tRNA site ("A-site") in the 30S subunit of ribosomes, leading to miscoding and inhibition of translocation (1,2). In practice, the antibiotic is used as a selection marker of the *Escherichia coli* tns neomycin phosphotransferase II gene (*npt II*) for selecting transformed plants (e.g. ref. 3,4). Cells of transgenic plants are grown on an agar containing the antibiotic, resulting in embryo-derived calli and complete plants. The information given in terms of the working concentrations varies from 10 - 150 mg/L. Concentrations above 50 µg/ml are toxic to plants. Paromomycin sulfate is watersoluble. Stock solutions are stored at 2-8°C.

Parthenolide BioChemica

B

from *Chrysanthemum parthenium*

C₁₅H₂₀O₃
M = 248.32 g/mol
CAS-No.: 20554-84-1
HS-No.: 29329900

Storage: 2-8°C

Melting point 112 - 115°C
Solubility (5 mg/ml Dichloromethane)
..... clear, colorless

Specification:

Assay (TLC) approx. 98 %
λ_{max} (MeOH) 209 nm

Order-No.	Quantity
A7789,0025	25 mg
A7789,0100	100 mg

Comment: Parthenolide is a sesquiterpene lactone from feverfew and other plants (Compositae). It has anti-inflammatory, anti-secretory and spasmolytic activity. It inhibits the release of various mediators. Parthenolide inhibits the activation of MAP kinase. Parthenolide is soluble in DMSO (100 mg/ml), ethanol and dichloromethane.

Patent Blue V Calcium salt (C.I. 45051)



B

$C_{54}H_{62}CaN_4O_{14}S_4$
 $M = 1159.42$ g/mol
CAS-No.: 3536-49-0
HS-No.: 32129000
EC-No.: 222-573-8

Storage: RT

Specification:

Assay (titr.) min. 85 %
Heavy metals (as Pb) max. 0.004 %
In H_2O insol. matter max. 0.20 %

Subsidiary dyes max. 2.0 %
Unsulphonated primary aromatic amine
..... max. 0.01 %

As max. 0.0003 %
Cd max. 0.0001 %
Hg max. 0.0001 %

Order-No.
A8187,0010 **Quantity**
 10 g
A8187,0025 25 g

Patulin BioChemica

B

*Expansine, Mycoin C3, Clavacin,
Claviformin, Penicidin
from Penicillium expansum*

$C_7H_6O_4$
 $M = 154.12$ g/mol
CAS-No.: 149-29-1
HS-No.: 29419000
EC-No.: 205-735-2

Storage: -20°C
protected from light

Class / PG: 6.1/II
UN3462
Danger
H315-H300
P264-P301+P310



Melting point 105 - 111°C
Solubility (10 mg/ml DMSO)
..... clear, colorless

Specification:

Assay approx. 98 %
 λ_{max} 276 nm

Order-No.
A7910,0005 **Quantity**
 5 mg
A7910,0010 10 mg
A7910,0025 25 mg

Comment: Patulin is a cytostatic, antibacterial mycotoxin derived from the metabolites of a number of fungi (*Aspergillus* spp., *Penicillium* spp., *Gymnoascus* spp.). It inhibits the potassium uptake and activates the p38 kinase. Patulin is soluble in water, DMSO, methanol and ethanol. It is unstable in alkali with loss of its biological activity.

Paxilline BioChemica

B

from Penicillium paxilli

$C_{27}H_{33}NO_4$
 $M = 435.56$ g/mol
CAS-No.: 57186-25-1
HS-No.: 29419000

Storage: 2-8°C
protected from light

Class / PG: 6.1/II
UN2811
Danger
H311-H330-H315-H301-H335-H318
P280-P284-P305+P351+P338-P310-
P260



Melting point 252 - 269°C

Specification:

Assay approx. 98 %
Solubility (5 mg/ml acetone) clear, colorless

Order-No.
A7820,0005 **Quantity**
 5 mg
A7820,0010 10 mg

PBS buffer (Dulbecco's) - Powder

HS-No.: 38210000

Storage: RT
LGK: 10 - 13

hygroscopic
P262

PBS buffer (10X Dulbecco's) - Powder

B

*Phosphate buffered saline, 10X
concentrated*

Order-No.
A0965,9010 **Quantity**
 10 L
A0965,9050 50 L
A0965,9100 100 L

PBS buffer (1X, Dulbecco's) - Powder

B

Phosphate buffered saline

Order-No.
A0964,9010 **Quantity**
 10 L
A0964,9050 50 L
A0964,9100 100 L

PBS buffer (1X Dulbecco's) - Powder

B

with 0,02 % EDTA

Order-No.
A1908,9010 **Quantity**
 10 L
A1908,9050 50 L
A1908,9100 100 L

PBS tablets

HS-No.: 38220000

Storage: RT

Comment: Deposit one tablet in flask or beaker placed on a magnetic stirrer. Add deionized water to 50% of the final volume at RT. Stir for a few minutes. Adjust the water to the final volume, stir until full dissolution. Autoclave or filter sterilize through a 0.22 μ m filter into a sterile flask or bottle. Solutions of PBS are stable for approx. 12 months if stored at 2-8°.

Anwendung: Tissue culture/ Cell culture; Sample dilution/ Protein dilution; Immunoassays/ Immuno-histochemistry; Microbiology

PBS tablets pH 7.2 (for 1 L)

B

- Tablets for preparation of 1 L phosphate buffered saline (PBS)
- pH (25°C): 7.2 $\pm$ 0.05

KCl 2.7 mM
NaCl 140 mM
Phosphate 10 mM

Order-No.	Quantity
A9202,0010	10 Tab.
A9202,0100	100 Tab.

PBS tablets pH 7.4 (for 1 L)

B

- Tablets for preparation of 1 L phosphate buffered saline (PBS)
- pH (25°C): 7.4 $\pm$ 0.05

KCl 2.7 mM
NaCl 140 mM
Phosphate 10 mM

Order-No.	Quantity
A9201,0010	10 Tab.
A9201,0100	100 Tab.

PBS tablets pH 7.4 (for 100 ml)

B

- Tablets for preparation of 100 ml phosphate buffered saline (PBS)
- pH (25°C): 7.4 $\pm$ 0.05

KCl 2.7 mM
NaCl 140 mM
Phosphate 10 mM

Order-No.	Quantity
A9162,0100	100 Tab.

PBS tablets pH 7.4 (for 500 ml)

B

- Tablets for preparation of 500 ml phosphate buffered saline (PBS)
- pH (25°C): 7.4 $\pm$ 0.05

KCl 2.7 mM
NaCl 140 mM
Phosphate 10 mM

Order-No.	Quantity
A9191,0012	12 Tab.
A9191,0100	100 Tab.

PBS tablets pH 7.4 (for 200 ml)

B

- Tablets for preparation of 200 ml phosphate buffered saline (PBS)
- pH (25°C): 7.4 $\pm$ 0.05

KCl 2.7 mM
NaCl 140 mM
Phosphate 10 mM

Order-No.	Quantity
A9177,0100	100 Tab.

PBS tablets pH 7.4 (w/o potassium, for 1 L)

B

- Tablets for preparation of 1 L phosphate buffered saline (PBS)
- pH (25°C): 7.4 ± 0.05

NaCl	140 mM		
Phosphate	10 mM		
		Order-No.	Quantity
		A9166,0010	10 Tab.
		A9166,0100	100 Tab.

PBS tablets pH 7.4 - high buffer strength (w/o potassium, for 1 L)

B

- Tablets for preparation of 1 L phosphate buffered saline (PBS)
- pH (25°C): 7.4 ± 0.05

NaCl	150 mM		
Phosphate	20 mM		
		Order-No.	Quantity
		A9199,0100	10 Tab.

PBS / Tween® - Solution

B

Phosphate buffered saline / Tween® 20

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 14

Composition:	Specification:		
KCl	pH	Order-No.	Quantity
KH ₂ PO ₄	7.3 ± 0.2	A3814,0500	500 ml
Na ₂ HPO ₄ · 12H ₂ O		A3814,1000	1 L
NaCl		A3814,5000	5 L
Tween® 20			
0.5 %			

trans-PCCaM see All-trans-4-(4'-Propyl)bicyclohexyl-α-maltosid *BioChemica* Page 670

PCR Blunt Cloning Kit

B

End-polishing and blunt-end cloning kit

HS-No.: 38220000

Storage: -20°C

- ◆ The **Kit components** for 20 reactions:
- LPA (linear polyacrylamide)
- 10X *Psp* - Puffer
- dNTP mix (8 mM each)
- *Psp* DNA Polymerase
- 10X Ligase buffer
- ATP
- T4 DNA Ligase
- blunt-ended vector

Order-No.	Quantity
A5232,0020	20 Tests

Comment: This **End-polishing or blunt cloning kit** contains all components for the 3'-end-polishing of the amplification products (if the amplification product contains a 3'-overhang) and blunt-end cloning of the resulting fragments. The kit is useful for blunt-end fragment preparation from fragments with 5' or 3'-overhangs of all types (obtained after restriction endonuclease digestion, after exonuclease treatment, after unspecific degradation etc.) with the possibility of the blunt-end cloning of the end-polished fragments. The plasmid used for the cloning is Amp^r, the colonies with the recombinant plasmid may be selected by the Lac⁺/Lac⁻ phenotype detection (blue/white selection on the X-gal/IPTG - containing plates).

PCR-InfectoDetect Mixes DNA-free

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice

Highly sensitive detection assays for bacteria are often hampered by DNA contamination. Sources of the contamination may be all reagents used in such an assay, i.e. DNA polymerase, PCR buffers, primers, dNTPs and the water. The qPCR of 16S and 23S rDNA are extremely sensitive. This sensitive method is applied for the clinical diagnosis and the quality control of food and water. False positive results are unacceptable.

All components of the PCR-InfectoDetect Mixes are free of bacterial DNA. Depending on your application, you may order mixes including the 16S rDNA primer of *E. coli* (nucleotides 331-797 of the rRNA gene) or you may add your own primers when ordering the basic mix. The mixes are stable for approx. one year.

PCR-InfectoDetect Mix DNA-free, 16S Primer

B

- ◆ for the PCR detection and identification of bacteria
- ◆ for 100 or 250 reactions, respectively
- ◆ based on detection with 16S rDNA primers (nucleotides 331 - 797 of the *E. coli* 16 S rRNA)
- ◆ Components of the mix
 - 2.5X Mastermix (incl. MgCl₂); incl. Primer
 - Taq-Polymerase, DNA-free
 - PCR grade water, DNA-free

Order-No.	Quantity
A7746,0100	100 React
A7746,0250	250 React

Comment: PCR-InfectoDetect Mix, DNA-free Primer contains primers for the conserved region of the 16S rRNA genes (nucleotides 331-797) of *E. coli*. Therefore, any eubacterial DNA may be detected in samples containing bacteria. The product is similar to the *all inclusive mix* (A7732), except for the dye solution, the size marker and the loading buffer, which are not supplied.

PCR-InfectoDetect Mix DNA-free, all inclusive

B

- ◆ for the PCR detection and identification of bacteria
- ◆ for 100 or 250 reactions, respectively
- ◆ based on detection with 16S rDNA primers (nucleotides 331 - 797 of the *E. coli* 16 S rRNA)
- ◆ Components of the mix
 - 2.5X Mastermix (incl. MgCl₂); incl. Primer
 - Taq-Polymerase, DNA-free
 - PCR grade water, DNA-free
 - 10X DNA staining solution
 - 6X gel loading buffer
 - DNA size marker (100 bp ladder; pre-stained)

Order-No.	Quantity
A7732,0100	100 React
A7732,0250	250 React

Comment: PCR-InfectoDetect Mix DNA-free, all inclusive contains primers for the conserved region of the 16S rRNA genes (nucleotides 331-797) of *E. coli*. Therefore, any eubacterial DNA may be detected in samples containing bacteria. Detection of amplified DNA is done by gel electrophoresis and staining with SYBR® Green. The mix is suited for applications in Real-Time PCR or array technologies. The amplified fragment is 466 bp in size and shows species-specific sequences. After first thawing, the reagents may be aliquoted and frozen again. The dye is light-sensitive! To prevent any contamination by bacterial DNA, it is recommended to use DNA-free certified consumables only.

PCR-InfectoDetect Mix DNA-free, Basic

B

- ◆ for the PCR detection and identification of bacteria and fungi
- ◆ for 100 or 250 reactions, respectively
- ◆ based on usage of custom primers
- ◆ Components of the mix
 - 2.5X Mastermix (incl. MgCl₂); without primer
 - Taq-Polymerase, DNA-free
 - PCR grade water, DNA-free

Order-No.	Quantity
A7751,0100	100 React
A7751,0250	250 React

Comment: PCR-InfectoDetect Mix DNA-free, Basic does not include primers for the conserved region of the 16S rRNA genes of *E. coli*. Therefore, you may run the PCR with your own primers. The mix contains all reagents to run a PCR. All components of the mix are free of bacterial DNA!

Easy PCR Kit

B

available for 100 or 500 reactions

HS-No.: 38220000

Storage: -20°C

The Easy PCR Kit contains:

- 10x Taq DNA- polymerase buffer
- dNTP Mix (8 mM each)
- 25 mM MgCl₂
- Taq DNA polymerase
- Nuclease-free water
- Control DNA
- control primer mix
- mineral oil
- Protocol

Order-No.	Quantity
A5200,0100	100 Tests
A5200,0500	500 Tests

Comment: The Easy PCR Kit is a traditional PCR kit containing all components in liquid form. It contains a positive control (high molecular weight DNA) and a pair of control primers. Control DNA and primers are sufficient for 10 reactions in 50 µl. The size of the control generated by the control primers is 827 bp.

Easy Hot Start PCR Kit

B

available for 100 or 500 reactions

HS-No.: 38220000

Storage: -20°C

The Easy Hot Start PCR Kit contains:

- 10x Taq DNA- polymerase buffer
- dNTP Mix (8 mM each)
- 25 mM MgCl₂
- SuperHot Taq DNA polymerase
- Nuclease-free water
- Control DNA
- control primer mix
- mineral oil
- Protocol

Order-No.	Quantity
A5214,0100	100 Tests
A5214,0500	500 Tests

Comment: The Easy Hot Start PCR Kit is a traditional PCR kit containing all components in liquid form. It contains a positive control (high molecular weight DNA) and a pair of control primers. Control DNA and primers are sufficient for 10 reactions in 50 µl. The size of the control generated by the control primers is 827 bp.

PCR Kit, DNA-free



B

PCR Mastermix, DNA free

available for 100 or 250 reactions

HS-No.: 38220000

Storage: -20°C

Shipment: dry ice

- ◆ Components of the mix
- 2.5X Mastermix (incl. MgCl₂, BSA, dNTPs), DNA-free
- Taq-Polymerase, DNA-free
- PCR grade water, DNA-free

Specification:

Bacterial DNA not detectable (min.
40 PCR cycle)

Order-No.	Quantity
A8509,0100	100 React
A8509,0250	250 React

qPCR Kit, DNA-free



B

Real Time-PCR Mastermix, Real Time-PCR Kit

available for 100 or 250 reactions

HS-No.: 38220000

Storage: -20°C

Shipment: wet ice

- ◆ Components of the mix
- 2.5X Mastermix (incl. MgCl₂, BSA, dNTPs), DNA-free
- Taq-Polymerase, DNA-free
- PCR grade water, DNA-free
- SYBR® Green 10X staining solution, DNA-free

Specification:

Bacterial DNA not detectable (min.
40 PCR cycle)

Order-No.	Quantity
A8514,0100	100 React
A8514,0250	250 React

Comment: Mastermix and additional components for (real time) qPCR. Includes an extra vial of 10X SYBR® Green solution. All components are tested DNA free, hence this kit is ideal for sensitive qPCR assays using genereil primers.

PCR Mycoplasma Test Kit

B

Mycoplasma PCR Test Kit

HS-No.: 38220000

Storage: -20°C

Avoid repeated changes in the reaction mix temperature

When in use, always keep the reaction mix on ice!

Shipment: wet ice

- ◆ Ready-to-use PCR Mix for the detection of mycoplasma in cell culture
- ◆ for 10 or 20 tests, respectively
- ◆ detects all of mycoplasma species found in cell cultures
- ◆ Kit components
 - Reaction mix
 - Buffer solution
 - Positive template control

Order-No.	Quantity
A3744,0010	10 Tests
A3744,0020	20 Tests

Literature: (1) Rottem, S. & Barile, F.M. (1993) *TIBTECH* 11, 143-150

Comment: The *PCR Mycoplasma Test Kit* is designed to detect the presence of mycoplasma contaminating biological materials, such as cultured cells. Mycoplasma detection by the direct culture procedure is time-consuming and some mycoplasma species are difficult to cultivate. With PCR testing, results are obtained within a few hours, since the presence of contaminant mycoplasma can be easily detected simply by verifying the bands of amplified DNA fragments in electrophoresis. There is no need to prepare probes labeled with radioisotopes, or to calculate enzyme, dNTP's or buffer concentrations. Instead, a *ready-to-use*, optimized PCR mix is supplied. The primer set allows detection of various mycoplasma species (*M. fermentans*, *M. hyorhinis*, *M. arginini*, *M. orale*, *M. salivarium*, *M. hominis*, *M. pulmonis*, *M. arthritis*, *M. bovis*, *M. pneumoniae*, *M. pirum*, *M. capricolum*) as well as *Acholeplasma* and *Spiroplasma* species, with high sensitivity and specificity.

Principle: rRNA gene sequences of prokaryotes, including mycoplasmas, are well conserved, whereas, the lengths and sequences of the spacer region in the rRNA operon (for example the region between 16S and 23S gene) differ from species to species. The detection procedure utilizing the PCR process with this primer set consists of

1.) Amplification of a conserved and mycoplasma-specific 16S rRNA gene region using two primers.

2.) Detection of the amplified fragment by agarose gel electrophoresis.

This system does not allow the amplification of DNA originating from other sources, such as cultured cells or bacteria, which affect the detection result. Amplification of the gene sequence with PCR using this primer set enhances not only the sensitivity, but also the specificity of detection. Amplified products are then detected by agarose gel electrophoresis.

PCR Mycoplasma Test Kit II



B

Mycoplasma PCR Test Kit II

HS-No.: 38220000

Storage: 2-8°C

- ◆ lyophilized PCR Mix for the detection of mycoplasma in cell culture by conventional PCR
- ◆ for 25, 50 or 100 tests, respectively
- ◆ detects all of mycoplasma species found in cell cultures
- ◆ kit meets criteria of section 2.6.7 of Ph. Eur.
- ◆ Kit components
 - PCR Primer Nucleotide Mix
 - Positive template control
 - Reaction Buffer Solution
 - Water PCR grade
 - internal control DNA

Order-No.	Quantity
A8994,0025	25 Tests
A8994,0050	50 Tests
A8994,0100	100 Tests

Comment: This PCR Mycoplasma Test Kit is supplied without *Taq*-DNA-Polymerase. This enables to lyophilize the temperature-sensitive components and to increase the stability especially during the transport at ambient temperature. We recommend to employ the SuperHot *Taq*-DNA-Polymerase (Product-No. A5231) in combination with this kit. As it holds true for the PCR Mycoplasma Test Kit (A3744), during PCR reaction, a 270 bp band is generated by the primer in case of a positive PCR, proving a contamination. The size of the internal control band is 191 bp.

qPCR Mycoplasma Test Kit



B

qPCR test kit for the mycoplasma detection

HS-No.: 38220000

Storage: 2-8°C

- ◆ lyophilized PCR Mix for the detection of mycoplasma in cell culture by real-time/qPCR
- ◆ for 25 or 100 tests, respectively
- ◆ detects all of mycoplasma species found in cell cultures
- ◆ kit meets criteria of section 2.6.7 of Ph. Eur.
- ◆ Kit components
 - PCR Primer Mix (incl. primers, probes, nucleotides)
 - Positive template control
 - Reaction Buffer Solution
 - Water PCR grade
 - internal control DNA

Order-No.	Quantity
A9019,0025	25 Tests
A9019,0100	100 Tests

Comment: This qPCR Mycoplasma Test Kit is suited for use in combination with different instruments: LightCycler® 1.2, 1.5, 2.0, 480, Rotor-Gene™ 3000, 6000, ABI Prism® 7000, iCycler iQ®, iQ™5, Opticon 2, Chromo 4, MX300P®, MX4000®.

PCR Pack Tube Kit

B

HS-No.: 38220000

Storage: RT

◆ ready-to-use HotStart PCR Kit

- ◆ Each tube contains a lyophilized mixture of:
 - *Taq* DNA polymerase
 - heat-sensitive *Taq* DNA polymerase inhibitor
 - dNTPs
 - MgCl₂
 - special stabilizer to provide long-term storage

Order-No.	Quantity
A5218,01002	100 reac.
A5218,05002	500 reac.

Comment: This kit provides the simplest PCR solution. Everything is included, in the right ratio, lyophilized to the bottom of the tube as a single spot. It may be stored for at least one year at room temperature. Just add a drop of the buffer, your DNA and primers and run the HotStart PCR.

The components of the lyophilized mixture are adjusted for an optimal HotStart PCR in a volume of 25 µl. The kit contains the mastermix tubes (lyophilized), a PCR diluent (1 ml) and Mineral oil (1 ml). The tubes are especially good for large-scale experiments, for experiments under unusual conditions (field experiments, expeditions, trainings, etc.). They are available in 0.2 ml PCR tubes (100 or 500 tubes). A PCR protocol will be supplied with the kit.

PCR buffer

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

PCR buffer (10X)

B

Composition:

Gelatin	0.2 % (w/v)
KCl	500 mM
MgCl	25 mM
Tris · HCl	50 mM

Specification:

pH	8.3 ± 0.2

Order-No.	Quantity
A3274,0500	500 ml
A3274,1000	1 L

PCR buffer (1X)

B

Composition:

Gelatin	0.02 % (w/v)
KCl	50 mM
MgCl	2.5 mM
Tris · HCl	5 mM

Specification:

pH	8.3 ± 0.2

Order-No.	Quantity
A3292,0500	500 ml
A3292,1000	1 L

RT-PCR buffer, one-step reaction (5X)

B

HS-No.: 38220000

Storage: RT

Composition:

Bicine/KOH	250 mM
Glycerol (v/v)	40 %
Potassium acetate	575 mM

Specification:

pH	8.2

Order-No.	Quantity
A5060,0001	1 ml
A5060,0005	5 ml

PCR Water see Water Page 857

rHu PDGF-AA



B

recombinant Human Platelet-Derived
Growth Factor-AA
lyophilized without additives
from *E. coli*

M = 28.51 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (SDS-PAGE) min. 90 %

Order-No.	Quantity
A8253,0002	2 µg
A8253,0010	10 µg
A8253,0100	100 µg

Comment: PDGF is a mitogenic peptide growth hormone carried in the alpha-granules of platelets. It is released when platelets adhere to traumatized tissues. Connective tissue cells near the traumatized region respond by initiating the process of replication. The synthesis of PDGF can be induced by Interleukin-1, Interleukin-6, TNF-α, TGF-β and EGF. Recombinant Human Platelet-Derived Growth Factor-AA is a homodimeric, non-glycosylated, polypeptide chain containing 2 x 125 amino acids and having a total molecular mass of 28.51 kDa.

rM PDGF-AA



B

recombinant Mouse Platelet-Derived Growth Factor-AA
lyophilized without additives
from *E. coli*

M = 28.9 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1- 0.5 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8259,0005	5 µg
A8259,0010	10 µg
A8259,0100	100 µg

Comment:Recombinant Mouse Platelet-Derived Growth Factor-AA is a disulfide linked dimer comprised of 2 polypeptide chains of 126 amino acids each, with a dimeric molecular weight of 28.9 kDa. Belonging to a family of PDGFs including PDGF-AA, PDGF-BB and PDGF-AB, they play an important role as a mitogen for a number of cell types. Recombinant Mouse PDGF-AA produced in *E. coli* is a non-glycosylated homodimer.

rHu PDGF-AB



B

recombinant Human Platelet-Derived Growth Factor-AB
lyophilized without additives
from *E. coli*

M = 25.5 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8282,0002	2 µg
A8282,0010	10 µg
A8282,0100	100 µg

Comment:We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.*PDGF is a mitogenic peptide growth hormone carried in the alpha-granules of platelets. It is released when platelets adhere to traumatized tissues. Connective tissue cells near the traumatized region respond by initiating the process of replication. The synthesis of PDGF can be induced by Interleukin-1, Interleukin-6, TNF-α, TGF-β and EGF. Recombinant Human PDGF-AB is a heterodimeric, non-glycosylated, polypeptide chain containing 234 amino acids consisting of 13.3 kDa α-chain and 12.2 β-chain having a total molecular mass of 25.5 kDa.

rHu PDGF-BB bioconfident grade



B

recombinant Human Platelet-Derived Growth Factor-BB
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 14.6 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8850,0010	10 µg
A8850,0050	50 µg
A8850,0100	100 µg
A8850,1000	1 mg

Comment:Recombinant human PDGF-BB contains 110 amino acids and a 16 amino acid histidine-based tag for a total length of 126 amino acids and has a predicted molecular mass of 14.6 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as three bands with an apparent molecular mass of 10, 14 and 20 kDa in SDS-PAGE.

rHu PDGF-BB



B

recombinant Human Platelet-Derived Growth Factor-BB
lyophilized without additives
from *E. coli*

M = 24.3 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8292,0002	2 µg
A8292,0010	10 µg
A8292,0100	100 µg

Comment:PDGF is a mitogenic peptide growth hormone carried in the alpha-granules of platelets. It is released when platelets adhere to traumatized tissues. Connective tissue cells near the traumatized region respond by initiating the process of replication. The synthesis of PDGF can be induced by Interleukin-1, Interleukin-6, TNF-α, TGF-β and EGF. Recombinant Human PDGF-BB is a homodimeric, non-glycosylated, polypeptide chain containing 109 amino acids and having a molecular mass of 24.3 kDa.

Pectolarigenin HPLC grade



B

5,7-Dihydroxy-4',6'-dimethoxyflavon
from *Linaria vulgaris*

*C*₁₇*H*₁₄*O*₆
M = 314.30 g/mol
CAS-No.: 520-12-7
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.	Quantity
A8723,0010	10 mg
A8723,0020	20 mg

Comment:Documents included: HPLC-DAD with UV spectrum.

Pectolinarin HPLC grade



B

Neolinarin, Pectolinarosid
from *Linaria vulgaris*

$C_{29}H_{34}O_{15}$
 $M = 622.58$ g/mol
CAS-No.: 28978-02-1
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A8734,0010	10 mg
A8734,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Pectolinarosid see Pectolinarin HPLC grade Page 601
PEG see Polyethylene glycol Page 630
Pelarginadon see Naringenin HPLC grade Page 562
Penicidin see Patulin *BioChemica* Page 593

Penicillic acid *BioChemica*

B

3-Methoxy-5-methyl-4-oxohexa-2,5-
diene acid
from *Penicillium cyclopium*

$C_8H_{10}O_4$
 $M = 170.17$ g/mol
CAS-No.: 90-65-3
HS-No.: 29189990
EC-No.: 202-008-1

Storage: 2-8°C

Warning
H302
P280-P262



Melting point 83 - 87°C

Specification:

Assay approx. 98 %
 λ_{max} 220 nm
Appearance slight yellow powder

Solubility (10 mg/ml Dichloromethane)
..... clear, colorless

Order-No.	Quantity
A7927,0005	5 mg
A7927,0025	25 mg

Penicillin G potassium salt

$C_{16}H_{17}KN_2O_4S$
 $M = 372.48$ g/mol
CAS-No.: 113-98-4
HS-No.: 29411000
EC-No.: 204-038-0

Storage: RT
LGK: 10 - 13

Warning
H317
P280



Penicillin G potassium salt *BioChemica*

B

Specification:

Assay min. 98 %
 $\alpha_{20}^{\circ}C/D; 1\%$, H_2O +285° - +295°
Potency (calc. on dried substance)
..... min. 1440 µg/mg

pH (5 %; H_2O) 5.5 - 7.5
Water (K.F.) max. 1 %

Order-No.	Quantity
A1837,0010	10 g
A1837,0025	25 g
A1837,0100	100 g

Comment: Penicillin G was isolated from *Penicillium notatum*. The bactericidal effect of this β -lactam antibiotic is based on the irreversible inhibition of transpeptidase, interfering with the biosynthesis of the cell wall in bacteria.

Stability: Penicillin G potassium salt is readily water-soluble. The dry substance can be stored at room temperature or +4°C and is stable for about 5 years. The buffered solution (pH 4.5 - 7) loses 5 % of its activity after 20 days at +4°C. Storage of the solution at room temperature results in a 5 % loss of activity after 48 hours, after 7 days in a 10 % loss and after 14 days it results in a loss of 20 - 50 %. The stability in an unbuffered solution is much lower (+4°C approx. 3-7 days).

Penicillin G potassium salt pure Ph. Eur.

C

Specification:

Assay (HPLC, anhydrous subst.)
..... 96.0 - 102.0 %
 $\alpha_{20}^{\circ}C/D; 2\%$, H_2O +270° - +300°
Absorption complies

Identity complies
Loss on drying max. 1.0 %
Related subst. complies
pH (10 %; H_2O) 5.5 - 7.5

Order-No.	Quantity
A6998,0025	25 g
A6998,0100	100 g
A6998,0250	250 g

Penicillin G sodium salt pure Ph. Eur.

C

$C_{16}H_{17}N_2NaO_4S$
 $M = 356.37$ g/mol
CAS-No.: 69-57-8
HS-No.: 29411000
EC-No.: 200-710-2

Storage: RT
LGK: 10 - 13

Danger
H334-H317
P261-P280-P342+P311



Specification:

Assay (HPLC, anhydrous subst.)
..... 98.0 - 102.0 %
 $\alpha_{20}^{\circ}C/D; 2\%$, H_2O +285° - +310°
Absorption complies

Identity complies
Loss on drying max. 1.0 %
Related subst. complies
pH (10 %; H_2O) 5.5 - 7.5

2-Ethylhexanoic acid
..... max. 0.5 %

Order-No.	Quantity
A7000,0025	25 g
A7000,0100	100 g

Penicillin - Streptomycin (100X) Cell culture grade

B

stabilized, sterile filtrated, solution in 0.9 %
NaCl

HS-No.: 38220000

Storage: -20°C
Shipment: wet ice

WGK: 2

pH 6.0 - 7.0

Composition:

Penicillin 10000 U/ml
Streptomycin 10 mg/ml

Specification:

Endotoxins complies

Order-No.
A8943,0100

Quantity
100 ml

Penitrem A BioChemica

B

Tremortin A
from *Penicillium paxilli*

$C_{37}H_{44}ClNO_6$
 $M = 634.20$ g/mol
CAS-No.: 12627-35-9
HS-No.: 29339980

Storage: 2-8°C
protected from light

Class / PG: 6.1/II
UN2811
Danger
H300-H330-H310
P280-P284-P302+P350-P264-P260

**Specification:**

Assay approx. 95 %
Solubility (10 mg/ml MeOH) clear, colorless

Order-No.
A7980,0001
A7980,0005

Quantity
1 mg
5 mg

Literature: (1) Aaronson, P.I. *et al.* (2006) *Br. J. Pharmacol.* **147**, 815-824

A role of voltage-gated, but not Ca^{2+} -activated, K^+ channels in regulating spontaneous contractile activity in myometrium from virgin and pregnant rats.

Comment: Penitrem A (tremortin) is a fungal neurotoxin of the indole alkaloid group, produced by several species of *Aspergillus*, *Claviceps*, and *Penicillium*. It inhibits Calcium-activated potassium channels in smooth muscles, leading to a prolongation of the depolarization plateau potential. Penitrem A increases the spontaneous release of endogenous glutamate, GABA (γ -aminobutyric acid), and aspartate, respectively, from rat cerebrocortical synaptosomes. It is lipid-soluble. A stock solution (0.5 mM) is made in DMSO (1).

Penita(carboxymethyl)diethylenetriamine see Diethylenetriaminepentaacetic acid p. A. Page 278

3,3',4',5,7-Pentahydroxyflavan see (+)-Catechin HPLC grade Page 188

3,5,7,3',4',5-Pentahydroxyflavone see (-)-Catechin HPLC grade Page 188

3,3',4',5,7-Pentahydroxyflavone see Quercetin HPLC grade Page 680

3,3',4',5,7-Pentahydroxyflavone-3- β -glucoside see Isoquercitrin Page 466

iso-Pentane see 2-Methylbutane Page 537

n-PentaneAlkane C_5

C_5H_{12}
 $M = 72.15$ g/mol
CAS-No.: 109-66-0
HS-No.: 29011000
EC-No.: 203-692-4

Storage: <15°C
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1265
WGK: 1
Danger
EUH066-H411-H304-H225-H336
P273-P331-P301+P310-P403+P235



Boiling point 36°C
Density (d 20°C/4°C) ... 0.626
Melting point -129°C
n 20°C/D 1.3588

n-Pentane Residue analysis grade

C

Specification:

Assay (HPLC) min. 95 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.
A1629,2500
A1629,25004

Quantity
2.5 L
4 x 2,5 L

n-Pentane HPLC grade

C

Specification:

Assay (HPLC) min. 95 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %
A (1 cm³/water HPLC grade)
210 nm max. 0.4
220 nm max. 0.2
230 nm max. 0.05
240 nm max. 0.01
250 nm max. 0.005

Order-No.
A1631,1000
A1631,2500
A1631,25004

Quantity
1 L
2.5 L
4 x 2,5 L

n-Pentane p. A.

C

Specification:

Assay (HPLC) min. 99 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %
Al max. 0.00005 %
Ca max. 0.00005 %
Co max. 0.00005 %
Cr max. 0.00005 %
Cu max. 0.00005 %
Fe max. 0.00001 %
Mn max. 0.00001 %
Pb max. 0.00001 %

Order-No.
A0930,0500
A0930,1000
A0930,10006
A0930,2500
A0930,25004
A0930,5000
A0930,9010
A0930,9025BK

Quantity
500 ml
1 L
6 x 1 L
2.5 L
4 x 2,5 L
5 L
10 L
25 L

***n*-Pentane pure**

C

Specification:

Assay (HPLC)	min. 99 %
Non-volatile matter	max. 0.002 %
Water (K.F.)	max. 0.1 %
Ca	max. 0.0001 %
Fe	max. 0.0005 %
Mn	max. 0.0001 %
Pb	max. 0.0005 %

Order-No.	Quantity
A0641,1000	1 L
A0641,10006	6 x 1 L
A0641,2500	2.5 L
A0641,25004	4 x 2.5 L
A0641,5000	5 L
A0641,9010	10 L
A0641,9025BK	25 L

***n*-Pentane Technical grade**

C

Specification:

Assay (HPLC)	min. 95 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A4495,1000	1 L
A4495,10006	6 x 1 L
A4495,2500	2.5 L
A4495,25004	4 x 2.5 L
A4495,5000	5 L
A4495,9010	10 L
A4495,9025BK	25 L
A4495,9025PE	25 L

Pentane-1,5-dial see Glutaraldehyde - Solutions Page 382

1-Pentanesulfonic acid sodium salt anhydrous IPC grade

C

Sodium 1-pentanesulfonate

$C_5H_{11}NaO_3S$
 $M = 174.20$ g/mol
 CAS-No.: 22767-49-3
 HS-No.: 29041000
 EC-No.: 245-208-4

Storage: RT
 LGK: 10 - 13
 Disposal: 28

Solubility (H_2O ; 20°C) . easily soluble

Specification:

Assay (titr.)	min. 99 %
pH (10 %; H_2O)	5.5 - 7.5
A (1 cm/0.005 M in H_2O)	210 nm max. 0.15
	230 nm max. 0.05
	260 nm max. 0.02

Order-No.	Quantity
A1709,0005	5 g
A1709,0010	10 g
A1709,0025	25 g

1-Pentanesulfonic acid sodium salt monohydrate IPC grade

C

Sodium 1-pentanesulfonate monohydrate

$C_5H_{11}NaO_3S \cdot H_2O$
 $M = 192.21$ g/mol
 CAS-No.: 207605-40-1
 HS-No.: 29041000
 EC-No.: 245-208-4

Storage: RT
 LGK: 10 - 13
 Disposal: 28

Specification:

Assay (titr.)	min. 99 %
Solubility (10 %; H_2O)	clear, colorless
A (1 cm/0.005 M in H_2O)	210 nm 0.15
	230 nm 0.05
	260 nm 0.02

Order-No.	Quantity
A1013,0005	5 g
A1013,0010	10 g
A1013,0025	25 g

1-Pentanol see *n*-Amyl alcohol Page 109

1-Pentyl alcohol see *n*-Amyl alcohol Page 109

PEO3-Amine-Biotin see N-[2-[2-(2-Aminoethoxy)ethoxy]ethyl] biotinamide Page 87

PEO4-Amine-Biotin see N-[3-[2-[2-(3-Aminopropoxy)ethoxy]ethoxy]propyl]biotinamide hydrochloride Page 90

PEP-3CHA see Phosphoenolpyruvate tricyclohexylammonium salt Page 623

PEP-K see Phosphoenolpyruvate monopotassium salt Page 623

Pepsin

B

[E.C. 3.4.23.1]
 from porcine stomach

$M \approx 36000$ g/mol
 CAS-No.: 9001-75-6
 HS-No.: 35079090
 EC-No.: 232-629-3

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

WGK: nwg
 Danger
 H334-H315-H319-H335
 P304+P341-P302+P352-
 P305+P351+P338-P342+P311



Specification:

Activity	min. 0.7 FIP-U/mg
pH (2 %; H_2O)	4.0 - 5.0
Water (K.F.)	max. 6 %

Order-No.	Quantity
A4289,0025	25 g
A4289,0100	100 g

Pepsinogen I, human

B

supplied liquid in 20 mM potassium
 phosphate buffer, pH 7.0, 150 mM NaCl
 from human gastric mucosa

HS-No.: 35079090

Storage: 2-8°C

Specification:

Protein	min. 1 mg/ml

Order-No.	Quantity
A6973,0050	50 µg
A6973,0500	500 µg

Comment: Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Pepsinogen II, human

B

supplied liquid in 20 mM potassium
phosphate buffer, pH 7.0, 150 mM NaCl
from human gastric mucosa

HS-No.: 35079090

Storage: 2-8°C

Specification:

Protein min. 0.1 mg/ml

Order-No.

A6980,0025

A6980,0250

Quantity

25 µg

250 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Pepstatin A

B

Isovaleryl-L-val-L-val-statiny-L-ala-
statine

C₃₄H₆₃N₅O₉

M = 685.91 g/mol

CAS-No.: 26305-03-3

HS-No.: 29241900

EC-No.: 247-600-0

Storage: 2-8°C

LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.

A2205,0010

A2205,0025

A2205,0100

Quantity

10 mg

25 mg

100 mg

Literature: (1) Aoyagi, T. *et al.* (1971) *J. Antibiotics* **24**, 687-694

(2) Umezawa, H. (1976) *Methods Enzymol.* **45**, 678-695

(3) Katoh, I. *et al.* (1987) *Nature* **329**, 654-656

(4) Von der Helm, K. *et al.* (1989) *FEBS Lett.* **247**, 349-352

(5) Menéndez-Arias, L. *et al.* (1992) *J. Biol. Chem.* **267**, 24134-24139

(6) Saiga, A. *et al.* (1993) *Arch. Virol.* **128**, 195-210

Effect of Pepstatin on acid proteases.

Structures and activities of protease inhibitors of microbial origin.

Inhibition of retroviral protease activity by an aspartyl proteinase inhibitor.

Inhibition of HIV replication in cell culture by the specific aspartic protease inhibitor Pepstatin A.

Purification and characterization of the MMTV protease expressed in *Escherichia coli*. The HTLV-1 protease expressed in *Escherichia coli* possesses aspartic proteinase activity.

Comment: Pepstatin was isolated from *Streptomyces testaceus* and different actinomycetes. It is a strong inhibitor of acidic proteases ('Aspartic Proteases'): Pepsin, HIV and MMTV protease, cathepsin D and renin (1-6). Pepstatin is not a strong toxin (1, 2). The working concentration ranges from 1 µM (0.7 µg/ml) to 5 µM, whereas the MMTV protease requires a higher dose ([C₅₀ = 90 µM, ref. 5). Solutions are stable for approx. 1 week at +4°C or 1 month at -20°C.

Pepstatin may be dissolved in methanol or ethanol at a concentration of 1 mg/ml. It is of low solubility in ethyl acetate, ether, benzene, chloroform, acetic acid, DMSO, pyridine and water (2). Under the assay conditions described in reference 3 (concentration 1 µM - 1 mM in DMSO), a precipitate of pepstatin A was observed.

Peptidyl peptide hydrolase see Trypsin from bovine pancreas Page 842

Peptone from casein (controlled enzymatic hydrolysis) see Tryptone *BioChemica* Page 844

Peptones

HS-No.: 35040090

EC-No.: 293-428-4

Storage: RT

LGK: 10 - 13

WGK: 1

Peptone from casein (acid hydrolysate)

B

Specification:

Nitrogen (NH₂) min. 4.0 %

Sulfated ash max. 45 %

Total N min. 8.5 %

pH (2 %; H₂O) approx. 7.0 (20°C)

Loss on drying max. 5 %

Order-No.

A2142,0250

A2142,0500

Quantity

250 g

500 g

Peptone from casein (enzymatic digest)

B

Specification:

Sulfated ash max. 17 %

Total N min. 12 %

pH (2 %; H₂O) approx. 7.0 (20°C)

NaCl max. 6 %

Loss on drying max. 6 %

Order-No.

A2208,0250

A2208,0500

Quantity

250 g

500 g

Peptone from casein (pancreatic digest)

B

Specification:

Enzyme activity not detectable

Nitrogen (NH₂) 3.0 - 4.0 %

Sulfated ash max. 17 %

Total N approx. 13 %

pH (2 %; H₂O) approx. 7.0 (20°C)

NaCl max. 6 %

Loss on drying max. 6 %

Order-No.

A2210,0250

A2210,0500

Quantity

250 g

500 g

Peptone from gelatin

B

Specification:

Red. sugars negativ

Sulfated ash max. 9 %

Total N min. 15 %

Undigested protein negativ

pH (2 %; H₂O) approx. 7.0 (20°C)

Loss on drying max. 6 %

Order-No.

A2254,0250

A2254,0500

Quantity

250 g

500 g

Peptone from lactalbumin (Lactalbumin hydrolysate)

B

Specification:

Nitrogen (NH₂) approx. 5 %

Total N approx. 12 %

pH (2 %; H₂O) approx. 7 (20°C)

Loss on drying max. 6 %

Order-No.

A2207,0250

A2207,0500

A2207,1000

Quantity

250 g

500 g

1 kg

Peptone from meat (enzymatic digest)

B

Specification:

Sulfated ash	 max. 6 %	NaCl	 max. 3 %
Total N	 min. 15 %	Loss on drying	 max. 6 %
pH (2 %; H ₂ O; 20°C)	 5.0 - 6.5		

Order-No.	Quantity
A1835,0250	250 g
A1835,0500	500 g

Peptone from soybean (enzymatic digest)

B

Specification:

Nitrogen (NH ₂)	 2.5 - 3.5 %	Loss on drying	 max. 6 %
Sulfated ash	 max. 21 %	Chloride (as NaCl)	 max. 5 %
Total N	 min. 9 %		
pH (1 %; H ₂ O)	 approx. 7.0 (20°C)		

Order-No.	Quantity
A2206,0250	250 g
A2206,0500	500 g
A2206,1000	1 kg

Peptone from wheat (enzymatic digest)

B

Specification:

Loss on drying	 max. 6 %	pH (5 %; H ₂ O; 20°C)	 6.0 - 7.0
Residue on ignition	 max. 11 %	Chloride (as NaCl)	 max. 1 %
Total N	 11 - 14 %		

Order-No.	Quantity
A4865,0250	250 g
A4865,0500	500 g

Pepton Water, Buffered

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Buffers	 5.0 g/L
Peptones	 10.0 g/L
Sodium chloride	 5.0 g/L

Specification:

pH before autoclaving .. approx. 7.2 (20°C)

Order-No.	Quantity
A5841,0500G	500 g
A5841,5000KG	5 kg

Literature: (1) APHA (1976) Compendium of Methods for Microbiological Examination of Foods.

Comment: This is a pre-enrichment medium, used for the isolation of *Salmonella* species.

Directions: Suspend 20 g in 1 L of distilled water. Heat gently to dissolve the medium completely and distribute into final containers. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Peracetic acid 15 % pure

C

Peroxyacetic acid

CAS-No.: 79-21-0
HS-No.: 29159000
EC-No.: 201-186-8

Storage: 2-8°C
LGK: 5.2

Class / PG: 5.2(8)
UN3105
WGK: 2
Danger
H302-H332-H314-H312
P261-P304+P340-P330-P280-
P301+P312-P302+P352



Composition:

Acetic acid	 min. 15 %
Hydrogen peroxide	 max. 24 %
Peracetic acid	 max. 16 %
Water	 min. 40 %

Specification:

Peracetic acid	 approx. 15 %
Heavy metals (as Pb)	 max. 0.005 %
Chloride	 max. 0.005 %
Sulfate	 max. 0.005 %

Order-No.	Quantity
A4600,1000	1 L
A4600,5000	5 L
A4600,9010	10 L
A4600,9025	25 L

* The specification and shelf life are only valid for the original closed package. Dust and dirt particles may enforce the degradation of the product.

Perchloric acid

Boiling point 198°C (70 %)
Melting point -18°C (70 %)

ClHO₄
M = 100.46 g/mol
CAS-No.: 7601-90-3
HS-No.: 28111980
EC-No.: 231-512-4

Storage: RT
LGK: 5.1 A
Disposal: 12

Class / PG: 5.1(8)/I
UN1873
WGK: 1
Danger
H271-H314
P305+P351+P338-P210-P280-
P301+P330+P331



Perchloric acid 70 % p. A.

C

Specification:

Assay (titr.)	 69 - 72 %
Total N	 max. 0.002 %
Total P	 max. 0.0002 %
Total S	 max. 0.0005 %
Total Si	 max. 0.0001 %
Chlorate	 max. 0.001 %
Chloride	 max. 0.0001 %

Ca	 max. 0.0001 %	Ni	 max. 0.00001 %
Cr	 max. 0.00002 %	Pb	 max. 0.00002 %
Cu	 max. 0.00002 %	Zn	 max. 0.00005 %
Fe	 max. 0.0001 %		
K	 max. 0.00002 %		
Mg	 max. 0.00005 %		
Na	 max. 0.0002 %		

Order-No.	Quantity
A0539,0250	250 ml
A0539,0500	500 ml
A0539,1000	1 L
A0539,10006	6 x 1 L
A0539,2500	2.5 L
A0539,25004	4 x 2.5 L

Perchloric acid 70 % pure

C

Specification:

Assay	approx. 70 %
Heavy metals (as Pb)	max. 0.0001 %
Residue on ignition	max. 0.005 %
Chloride	max. 0.001 %
Sulfate	max. 0.001 %
Fe	max. 0.0001 %

Order-No.	Quantity
A4891,0250	250 ml
A4891,0500	500 ml
A4891,1000	1 L
A4891,10006	6 x 1 L
A4891,2500	2.5 L
A4891,25004	4 x 2,5 L

Perchloric acid 60 % p. A.

C

HClO₄

Specification:

Assay (titr.)	60 - 62 %	Ca	max. 0.0001 %	Ni	max. 0.00001 %
Total N	max. 0.002 %	Cr	max. 0.00002 %	Zn	max. 0.00001 %
Total P	max. 0.0002 %	Cu	max. 0.00002 %		
Total S	max. 0.0005 %	Fe	max. 0.0001 %		
Total Si	max. 0.0001 %	K	max. 0.00005 %		
Chlorate	max. 0.002 %	Mg	max. 0.00005 %		
Chloride	max. 5 %	Na	max. 0.0005 %		

Order-No.	Quantity
A2413,0250	250 ml
A2413,0500	500 ml
A2413,1000	1 L
A2413,10006	6 x 1 L
A2413,2500	2.5 L
A2413,25004	4 x 2,5 L

Perchloric acid - Standard volumetric solutions (aqueous solutions)

HS-No.: 38220000	Storage: RT	WGK: 1
EC-No.: 231-512-4	LGK: 5.1 A	
	Disposal: 12	

Perchloric acid - Standard volumetric solution (1 M)

C

1 mol/L (1 N Solution)

Danger
H314
P305+P351+P338-P301+P330+P331-
P280-P309+P311



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3365,0250	250 ml
A3365,0500	500 ml
A3365,1000	1 L
A3365,10006	6 x 1 L
A3365,2500	2.5 L
A3365,25004	4 x 2,5 L

Perchloric acid - Standard volumetric solution (0.6 M)

C

0.6 mol/L (0.6 N Solution)

Warning
H319-H315
P280-P305+P351+P338-P309+P311-
P301+P330+P331



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3368,0250	250 ml
A3368,0500	500 ml
A3368,1000	1 L
A3368,2500	2.5 L
A3368,25004	4 x 2,5 L

Perchloric acid - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Warning
H315-H319
P305+P351+P338-P309+P311-
P301+P330+P331-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A5488,0500	500 ml
A5488,1000	1 L
A5488,10006	6 x 1 L

Perchloric acid - Standard volumetric solution (0.1 M) in Acetic acid anhydrous

C

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 12

Class / PG: 8(3)/II
UN2789
WGK: 1
Danger
H314-H226
P280-P301+P330+P331-
P305+P351+P338-P309+P311



Density 1.06 g/cm³

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A6354,0500	500 ml
A6354,1000	1 L
A6354,10006	6 x 1 L
A6354,2500	2.5 L
A6354,25004	4 x 2.5 L

Perchloric acid - Standard volumetric solution (0.01 M) in Acetic acid anhydrous

C

0.01 mol/L (0.01 N Solution) in anhydrous acetic acid

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 12

Class / PG: 8(3)/II
UN2789
WGK: 1
Danger
H226-H314
P301+P330+P331-P280-P309+P311-
P305+P351+P338



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3927,0500	500 ml
A3927,1000	1 L
A3927,10006	6 x 1 L

Perchloroethylene see Tetrachloroethylene pure Page 804

Peroxidase from horseradish

Donor : hydrogen peroxide
oxidoreductase

M = ~40000 g/mol
CAS-No.: 9003-99-0
HS-No.: 35079090
EC-No.: 232-668-6

Storage: -20°C
LGK: 10 - 13

Danger
H334-H317
P280-P342+P311-P302+P352-
P304+P341



Peroxidase from horseradish EIA and Immunology Grade I

B

salt-free, freeze-dried

Specification:

Activity (Purpurogallin) min. 300 U/mg
Appearance reddish-brown
RZ value > 3
Solubility clear (5 mg/ml H₂O)

ATPase * max. 0.001 %
Catalase * max. 0.7 %
Phosphatase, acid * max. 0.001 %

Order-No.	Quantity
A3615,0001	1 KU
A3615,0005	5 KU
A3615,0010	10 KU

* contaminants as % of peroxidase activity

Peroxidase from horseradish EIA and Immunology Grade II

B

salt-free, freeze-dried

Specification:

Activity (Purpurogallin) min. 260 U/mg
RZ value > 3
Solubility clear (5 mg/ml H₂O)
ATPase * max. 0.001 %

Catalase * max. 0.7 %
Phosphatase, acid * max. 0.001 %

Order-No.	Quantity
A3771,0005	5 KU
A3771,0010	10 KU
A3771,0025	25 KU

* contaminants as % of peroxidase activity

Comment: This grade is suited for applications like rapid testing (test stripes). In case you need peroxidase for labeling reaction, it is recommended to apply Grade I (A3615), which contains predominantly iso-enzyme C, the material of choice.
Repeated thaw and freezing is obviously not good and not recommended. Therefore, dispense into aliquots before freezing. 50 % glycerol will maintain activity. Whatever the storage conditions are, it is important that care is taken to minimise bacterial contamination. This will adversely affect the activity of the peroxidase.

Peroxidase from horseradish Practical Grade I

B

salt-free, freeze-dried

Specification:

Activity (Purpurogallin) min. 230 U/mg
RZ value > 2
Solubility clear (5 mg/ml H₂O)
ATPase * max. 0.001 %

Catalase * max. 0.7 %
Phosphatase, acid * max. 0.001 %

Order-No.	Quantity
A3791,0005	5 KU
A3791,0025	25 KU
A3791,0050	50 KU

* contaminants as % of peroxidase activity

Comment: This grade is suited for applications like rapid testing (test stripes).

Peroxidase from horseradish Practical Grade II

B

salt-free, freeze-dried

Specification:

Activity (Purpurogallin) min. 130 U/mg
 RZ value > 1
 Solubility clear (5 mg/ml H₂O)

Order-No.	Quantity
A3800,0005	5 KU
A3800,0025	25 KU
A3800,0050	50 KU

Comment: One unit of activity is defined as that amount of enzyme which catalyses the production of 1 mg purpurogallin in 20 seconds at 20°C and pH 6.0. Unit-Quantity conversion: 5 kU correspond to 38.5 mg; 25 kU correspond to 192.3 mg; 50 kU correspond to 384.6 mg.

Peroxidase, myelo see Myeloperoxidase, human Page 555
 Peroxidase-Stabilizer see Immunoassay Buffer Page 446
 Peroxyacetic acid see Peracetic acid 15 % pure Page 605
 Petrol ether see Petroleum ether 60 - 80 Page 609

Petroleum ether 30 - 40

Petrol ether

Explosive range 0.6 - 8 Vol. %

CAS-No.: 64742-49-0
 HS-No.: 27101125
 EC-No.: 265-151-9

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/I
 UN1268
 WGK: 1
 Danger
 EUH066-H304-H411-H224-H336
 P403+P235-P331-P301+P310-P273-
 P240-P210



Petroleum ether 30 - 40 p. A.

C

Specification:

Acidity/Alkalinity max. 0.0001 meq/g
 Boiling range 30 - 40°C (1000 hPa)
 Bromine number <3
 Density (15°C) 0.628 - 0.630 g/cm³
 Non-volatile matter max. 0.001 %
 Total P max. 0.00005 %

Total S max. 0.001 %
 Total Si max. 0.000005 %
 Aromates max. 0.01 %
 Water (K.F.) max. 0.01 %
 Ca max. 0.00005 %
 Cu max. 0.000005 %

Fe max. 0.00002 %
 K max. 0.00002 %
 Mg max. 0.000005 %
 Na max. 0.00005 %
 Pb max. 0.000005 %
 Zn max. 0.00001 %

Order-No.	Quantity
A2414,0500	500 ml
A2414,1000	1 L
A2414,10006	6 x 1 L
A2414,2500	2.5 L
A2414,5000	5 L

Petroleum ether 30 - 40 pure

C

Specification:

Bromine number < 5
 Non-volatile matter max. 0.002 %
 Aromates max. 0.05 %
 Water (K.F.) max. 0.02 %
 Fe max. 0.00005 %
 Pb max. 0.00005 %

Order-No.	Quantity
A0760,1000	1 L
A0760,10006	6 x 1 L
A0760,2500	2.5 L
A0760,25004	4 x 2.5 L
A0760,5000	5 L
A0760,9010	10 L
A0760,9025BK	25 L

Petroleum ether 30 - 50 pure

C

Explosive range 1.2 - 7.5 Vol. %

CAS-No.: 64742-49-0
 HS-No.: 27101125
 EC-No.: 265-151-9

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/I
 UN1268
 WGK: 1
 Danger
 H411-H224-H336-H315-H304
 P210-P240-P403+P235-P301+P310-
 P331-P273



Specification:

Bromine number max. 20
 Non-volatile matter max. 0.001 %
 S max. 0.0001 %

Aromates max. 0.001 %
 Water (K.F.) max. 0.01 %

Order-No.	Quantity
A7350,5000	5 L
A7350,9025	25 L

Petroleum ether 40 - 60

Petrol ether

Explosive range 0.6 - 8 Vol. %

CAS-No.: 64742-49-0
 HS-No.: 27101125
 EC-No.: 265-151-9

Storage: RT
 LGK: 3 A
 Disposal: 1

Class / PG: 3/II
 UN1268
 WGK: 1
 Danger
 H411-H336-H315-H304-H225
 P240-P210-P403+P235-P301+P310-
 P273



Petroleum ether 40 - 60 Residue analysis grade

C

Specification:

Acidity/Alkalinity max. 0.0005 meq/g
 Non-volatile matter max. 0.002 %
 Water (K.F.) max. 0.02 %
 GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
 GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1771,2500	2.5 L
A1771,25004	4 x 2.5 L

Petroleum ether 40 - 60 dried, p. A.

C

Specification:

Non-volatile matter max. 0.002 %
Water (K.F.) max. 0.005 %

Order-No.	Quantity
A2423,0500	500 ml
A2423,1000	1 L
A2423,2500	2.5 L

* This product contains molecular sieve as a drying agent!

Petroleum ether 40 - 60 p. A.

C

Specification:

Acidity/Alkalinity max. 0.0003 meq/g	Water (K.F.) max. 0.01 %
Boiling range 40 - 60°C (1000 hPa)	Ca max. 0.00005 %
Bromine number <3	Cu max. 0.000005 %
Density (15°C) 0.644 - 0.658	Fe max. 0.00002 %
Non-volatile matter max. 0.001 %	K max. 0.00002 %
Total P max. 0.00005 %	Mg max. 0.00001 %
Total S max. 0.005 %	Na max. 0.00005 %
Total Si max. 0.000005 %	Pb max. 0.00001 %
Aromates max. 0.02 %	Zn max. 0.00001 %

Order-No.	Quantity
A0538,1000	1 L
A0538,10006	6 x 1 L
A0538,2500	2.5 L
A0538,25004	4 x 2,5 L
A0538,5000	5 L
A0538,9010	10 L
A0538,9025BK	25 L

Petroleum ether 40 - 60 pure DAB

C

Specification:

Acidic/alkaline react. subst. complies	Tetraethyl lead complies
Appearance complies	n-Hexane (GC) max. 2 %
Behaviour against H ₂ SO ₄ complies	
Boiling range (40 - 60°C) ... ≥75 Vol. %	
Foreign odor, non-vol. subst. complies	
Res. after evaporation max. 0.001 %	
Benzene (UV) max. 0.001 Vol. %	
Sulfur comp., red. subst. complies	

Order-No.	Quantity
A0758,1000	1 L
A0758,10006	6 x 1 L
A0758,2500	2.5 L
A0758,25004	4 x 2,5 L
A0758,5000	5 L
A0758,9010	10 L
A0758,9025BK	25 L

Petroleum ether 60 - 80

Petrol ether

Explosive range 0.6 - 8 Vol. %

CAS-No.: 64742-49-0
HS-No.: 27101125
EC-No.: 265-151-9

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1268
WGK: 1
Danger
H411-H315-H336-H225-H304
P210-P331-P301+P310-P273



Petroleum ether 60 - 80 Residue analysis grade

C

Specification:

Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.002 %
Water (K.F.) max. 0.02 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) ... max. 10 ng/L

Order-No.	Quantity
A1772,2500	2.5 L

Petroleum ether 60 - 80 dried, p. A.

C

Specification:

Non-volatile matter max. 0.002 %
Water (K.F.) max. 0.005 %

Order-No.	Quantity
A2426,0500	500 ml
A2426,1000	1 L

* This product contains molecular sieve as a drying agent!

Petroleum ether 60 - 80 p. A.

C

Specification:

Acidity/Alkalinity max. 0.0001 meq/g	Ca max. 0.00005 %
Boiling range 60 - 80°C (1000 hPa)	Cu max. 0.000005 %
Bromine number <3	Fe max. 0.00002 %
Density (d 20°C/4°C) 0.670	K max. 0.00002 %
Non-volatile matter max. 0.001 %	Mg max. 0.000005 %
Total P max. 0.00005 %	Na max. 0.00005 %
Total S max. 0.001 %	Pb max. 0.000005 %
Total Si max. 0.000005 %	Zn max. 0.00001 %
Aromates max. 0.01 %	
Water (K.F.) max. 0.01 %	

Order-No.	Quantity
A0530,0500	500 ml
A0530,1000	1 L
A0530,10006	6 x 1 L
A0530,2500	2.5 L
A0530,25004	4 x 2,5 L
A0530,5000	5 L
A0530,9010	10 L
A0530,9025BK	25 L

Petroleum ether 60 - 80 pure

C

Specification:

Bromine number <5
Non-volatile matter max. 0.002 %
Aromates max. 0.05 %
Water (K.F.) max. 0.02 %
Fe max. 0.00005 %
Pb max. 0.00005 %

Order-No.	Quantity
A0759,1000	1 L
A0759,10006	6 x 1 L
A0759,2500	2.5 L
A0759,25004	4 x 2,5 L
A0759,5000	5 L
A0759,9010	10 L
A0759,9025BK	25 L

Petroleum ether 80 - 110 / 100 - 140

Petrol ether

Explosive range 0.6 - 8 Vol. %

CAS-No.: 64742-49-0
HS-No.: 27101125
EC-No.: 265-151-9

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1268
WGK: 1
Danger
H411-H336-H225-H315-H304
P273-P331-P210-P301+P310



Petroleum ether 80 - 110 pure

Specification:

Bromine number < 5
Non-volatile matter max. 0.002 %
Aromates max. 0.05 %
Water (K.F.) max. 0.02 %
Fe max. 0.00005 %
Pb max. 0.00005 %

Order-No.	Quantity
A0761,1000	1 L
A0761,10006	6 x 1 L
A0761,2500	2.5 L
A0761,25004	4 x 2,5 L
A0761,5000	5 L
A0761,9010	10 L
A0761,9025BK	25 L

C

Petroleum ether 100 - 140 pure

Specification:

Bromine number < 5
Non-volatile matter max. 0.002 %
Aromates max. 0.05 %
Water (K.F.) max. 0.02 %
Fe max. 0.00005 %
Pb max. 0.00005 %

Order-No.	Quantity
A0762,1000	1 L
A0762,10006	6 x 1 L
A0762,2500	2.5 L
A0762,25004	4 x 2,5 L
A0762,5000	5 L
A0762,9010	10 L
A0762,9025BK	25 L

C

PF-P-Biotin see Biotin pentafluorophenyl ester Page 142

Phallacidin

$C_{37}H_{50}N_8O_{13}S$
 $M = 846.91 \text{ g/mol}$
CAS-No.: 26645-35-2
HS-No.: 29349990

Storage: 2-8°C
protected from light

Class / PG: 6.1/I
UN3172
WGK: 3
Danger
H330-H310-H300
P309+P311-P280-P201



Specification:

Assay min. 97 %

Order-No.	Quantity
A3176,0001	1 mg
A3176,0005	5 mg
A3176,0025	25 mg

B

Phalloidin

from *Amanita phalloides*

$C_{35}H_{48}N_8O_{11}S$
 $M = 788.87 \text{ g/mol}$
CAS-No.: 17466-45-4
HS-No.: 29349990
EC-No.: 241-484-5

Storage: 2-8°C

Class / PG: 6.1/II
UN3462
WGK: 3
Danger
H310-H330-H300
P280-P201-P309+P311



Specification:

Assay (TLC) min. 95 %

Order-No.	Quantity
A1488,0001	1 mg
A1488,0005	5 mg

B

Literature: (1) Wieland, T. & Faulstich, H. (1978) *Crit. Rev. Biochem.* **5**, 185-260

Amatoxins, Phallotoxins, Phallolysin and Antamanide: The biologically active components of poisonous *Amanita* mushrooms.

1,10-Phenanthroline monohydrate

B

o-Phenanthroline monohydrate

$C_{12}H_8N_2 \cdot H_2O$
 $M = 198.24$ g/mol
 CAS-No.: 5144-89-8
 HS-No.: 29339980
 EC-No.: 200-629-2

Storage: RT
 LGK: 6.1 B
 Disposal: 9

Class / PG: 6.1/II
 UN2811
 WGK: 3*
 Danger
 H301-H410
 P310-P309-P273



Melting point 97 - 101°C

Specification:

Assay (titr.) min. 99.5 %
 EtOH-insoluble matter complies
 Identity (IR) complies
 Sulfated ash max. 0.1 %
 Water (K.F.) 8.5 - 10.0 %

Order-No.	Quantity
A3826,0005	5 g
A3826,0010	10 g
A3826,0050	50 g
A3826,0100	100 g

Literature: (1) Herman, C. *et al.* (1998) *Genes & Dev.* **12**, 1348-1355

- (2) Braun, M. *et al.* (1999) *Planta* **209**, 435-443
 (3) Samaj, J. *et al.* (2000) *Plant Cell Physiol.* **41**, 571-582
 (4) Del Lama, M.A. *et al.* (2001) *Apidologie* **32**, 25-35

Degradation of C-terminal-tagged cytoplasmic proteins by the *E. coli* protease HflB (FtsH).
 Redistribution of actin, profilin and PIP₂ in growing and maturing root hairs.
 Effects of a Myosin ATPase inhibitor on distribution of myosin in maize root apices.
 Genetic, ontogenetic and tissue-specific variation of aminopeptidases of *Apis mellifera*.

Comment: 1,10-Phenanthroline complexes several metal ions (e. g. Fe and Ni) and is applied as an inhibitor of metalloproteases (e. g. Carboxypeptidase G2 from *Pseudomonas*; Peptidase T and Acetylornithinase from *E. coli*; Aminopeptidases from *Apis mellifera*; Peptidase V from *L. delbrueckii* etc.). It is included in protease inhibitor cocktails at concentrations ranging from 1 µg/ml to 200 µg/ml (corresponding to 1 mM) or even up to 2 mg/ml (10 mM; ref. 1) See ref. 1-4 for applications.
 1,10-Phenanthroline is soluble in alcohol and acetone and hardly soluble in water (0.3 %).

o-Phenanthroline monohydrate see 1,10-Phenanthroline monohydrate Page 611

o-Phenanthroline hydrochloride monohydrate see 1,10-Phenanthroline hydrochloride monohydrate p. A. Page 611

1,10-Phenanthroline hydrochloride monohydrate p. A.

C

o-Phenanthroline hydrochloride monohydrate

$C_{12}H_8N_2 \cdot HCl \cdot H_2O$
 $M = 234.69$ g/mol
 CAS-No.: 18851-33-7
 HS-No.: 29339980
 EC-No.: 223-325-1

Storage: RT
 LGK: 6.1 A
 Disposal: 9

Class / PG: 6.1/II
 UN2811
 WGK: 3*
 Danger
 H410-H301
 P310-P273-P309



Reagent for iron

Melting point 215 - 220°C (dec.)

Specification:

Assay (titr.) min. 99 %
 H_2O -insoluble matter complies
 Identity (IR) complies
 Sulfated ash max. 0.25 %
 Water (K.F.) 7.0 - 8.5 %

Order-No.	Quantity
A4076,0005	5 g
A4076,0010	10 g
A4076,0025	25 g
A4076,0100	100 g

Phenazine methosulfate

B

N-Methylphenazinium methylsulfate, PMS

$C_{14}H_{14}N_2O_4S$
 $M = 306.34$ g/mol
 CAS-No.: 299-11-6
 HS-No.: 29339980
 EC-No.: 206-072-1

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

Warning
 H335-H319-H315
 P201-P280-P309+P311



Specification:

Assay (titr.) min. 98 %
 Heavy metals max. 0.001 %
 Loss on drying max. 1 %
 Solubility (10 %; H_2O) clear, yellow

Order-No.	Quantity
A2212,0005	5 g
A2212,0010	10 g
A2212,0025	25 g

Literature: (1) Hardonk, M.J. (1965) *Histochemie* **4**, 563-568

- (2) Negi, D.S. & Stephens, R.J. (1977) *J. Histochem. Cytochem.* **25**, 149-154
 (3) Scudiero, D.A. *et al.* (1988) *Cancer Res.* **48**, 4827-4833
 (4) Dunigan, D.D. *et al.* (1994) *BioTechniques* **19**, 640-649
 (5) Powell, W.S. *et al.* (1994) *J. Biol. Chem.* **269**, 25373-25380

The use of Phenazine methosulfate as an electron carrier in the histochemical demonstration of dehydrogenases.
 An improved method for the histochemical localization of Glucose-6-phosphate dehydrogenase in animal and plant tissue.
 Evaluation of a soluble Tetrazolium/Formazan assay for cell growth and drug sensitivity in culture using human and other tumor cell lines.
 Aqueous soluble Tetrazolium/Formazan MTS as an indicator of NADH- and NADPH-dependent dehydrogenase activity.
 Phorbol myristate acetate stimulates the formation of 5-Oxo-6,8,11,14-eicosatetraenoic acid by human neutrophils by activating NADPH Oxidase.

Comment: Phenazine methosulfate (PMS) serves as an electron carrier in enzymatic assays (1). Its application has to be carefully checked, because it may negatively influence the assay system. PMS may promote the non-enzymatical conversion of NADPH to NADP⁺ (5). NAD- and NADP-dependent dehydrogenases will be inhibited in most tissues by PMS. This might be helpful for the examination of NAD- and NADP-independent dehydrogenases and NADH- and NADPH-dependent dehydrogenases, respectively (1, 4).

Stability: PMS solution deteriorates in light. The incubation, therefore, should be carried out in the dark (2). Solutions in PBS (e. g. 5 mM corresponding to 1.53 mg/ml) are stable at +4°C for approximately 3 months (3) or in 0.1 mM HCl (14 mg/ml PMS) for approximately 4 weeks (4) if they are protected from light.

Phenol crystalline

Carbolic acid

Boiling point 180 - 182°C
Melting point 40.0 - 41.5°C
Solubility (20°C) 84 g/L (H₂O)

C₆H₆O
M = 94.11 g/mol
CAS-No.: 108-95-2
HS-No.: 29071100
EC-No.: 203-632-7

Storage: 2-8°C
protected from light
LGK: 6.1 A
Disposal: 9

Class / PG: 6.1/II
UN1671
WGK: 2
hygroscopic
Danger
H301-H314-H331-H341-H373-H311
P302+P352-P280-P310-
P301+P330+P331-P309-
P305+P351+P338



Phenol crystalline Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.0005 %
Insoluble matter complies

pH (5 %; H₂O; 20°C) ... 3.0 - 5.5
Water (K.F.) max. 0.2 %

Order-No.	Quantity
A1594,0100	100 g
A1594,0250	250 g
A1594,0500	500 g

◆ May change color in storage!

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-41

Large- and small-scale Phenol extractions.

Comment: Phenol should be clear and colorless when liquified. If the phenol has a yellow or pink color, it is an indication for the presence of phenolic oxidation products. To increase the stability it may be stabilized with 8-Hydroxyquinoline (100 mg/100 ml phenol) and stocks may be kept frozen until use. For details of the extraction procedure see reference 1.

Caution: Phenol is very toxic and corrosive. Wear suitable protective clothing, gloves and eye/face protection. Handle only in a chemical fume hood.

Phenol crystalline p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
Cresoles max. 0.1 %
Water (K.F.) max. 0.5 %
Chloride max. 0.0005 %

Order-No.	Quantity
A1382,0250	250 g
A1382,0500	500 g
A1382,1000	1 kg
A1382,10006	6 x 1 kg

◆ May change color in storage!

Phenol crystalline pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
Acidic reacting subst. complies
Appearance of solution complies
Coagulating temperature ... min. 39.5°C
Identity complies

Non-volatile matter ... max. 0.05 %
Volatile org. impurities ... complies
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A4458,0250	250 g
A4458,0500	500 g
A4458,1000	1 kg
A4458,10006	6 x 1 kg

◆ May change color in storage!

Phenol - Stock solution (1.000 g/L in water) for Phenol determination

C

according to DEV H 16

HS-No.: 38220000

Storage: RT

Order-No.	Quantity
A6220,0100	100 ml
A6220,0500	500 ml
A6220,1000	1 L

Phenol liquid non water-saturated, non-stabilized

CAS-No.: 108-95-2
HS-No.: 29071100
EC-No.: 203-632-7

Storage: 2-8°C
protected from light
under argon
LGK: 6.1 A
Disposal: 9

Class / PG: 6.1/II
UN2821
WGK: 2
Danger
H301-H341-H314-H311-H373-H331
P310-P301+P330+P331-P309-P280-
P302+P352-P305+P351+P338



Phenol liquid non water-saturated, non stabilized BioChemica

B

for RNA-isolation

Specification:

Assay approx. 90 %
Heavy metals max. 0.0005 %
Insoluble matter complies

pH (20°C) approx. 4.0
Water (K.F.) approx. 9 %

Stability approx. 12 months

Order-No.	Quantity
A3276,0100	100 ml
A3276,0500	500 ml

Comment: Phenol will take up approx. 25 % water, if water-saturated. This phenol only contains approx. 9 % of water. Therefore, a lot of water will be taken up from the aqueous, RNA-containing sample during RNA extraction. The advantage of the water-uptake is a reduction of the sample volume (concentration of the RNA). It might be a disadvantage, if the sample already contains high salt concentrations, because salt will be concentrated too.

Phenol liquid non water-saturated, non stabilized p. A.

C

Specification:

Assay (titr.)	approx. 90 %
Heavy metals (as Pb)	max. 0.0005 %
Water (K.F.)	8 - 11 %
Chloride	max. 0.005 %
Fe	max. 0.0001 %
Stability	approx. 12 months

Order-No.	Quantity
A4441,0250	250 ml
A4441,0500	500 ml
A4441,1000	1 L
A4441,10006	6 x 1 L
A4441,5000	5 L

Phenol liquid water-saturated

Carbolic acid

CAS-No.: 108-95-2
HS-No.: 29071100
EC-No.: 203-632-7

Storage: 2-8°C
protected from light
under argon
LGK: 6.1 A
Disposal: 9

Class / PG: 6.1/II
UN2821
WGK: 2

Phenol water-saturated, non-stabilized

without 0.1 % 8-Hydroxyquinoline

Danger
H314-H373-H311-H331-H341-H301-
P301+P330+P331-P309-P280-P310-
P305+P351+P338-P302+P352



B

Specification:

Assay (titr.)	approx. 75 %	Stability	approx. 12 months
Heavy metals	max. 0.0005 %		
pH (20°C)	4.0		
Water (K.F.)	approx. 25 %		

Order-No.	Quantity
A1578,0100	100 ml
A1578,0250	250 ml
A1578,0500	500 ml

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-41

Large- and small-scale Phenol extractions.

Comment: RNA-containing solutions are extracted with water-saturated, acidic phenol. At low pH values (pH 5.0 - 6.0), DNA is selectively retarded in the phenol phase, while RNA stays in the aqueous phase. Water-saturated, acidic phenol is quite stable. The addition of 8-hydroxyquinoline increases stability and colors the phenol yellow, so that the separation of the aqueous and organic phases is facilitated. Besides, 8-hydroxyquinoline is an RNase inhibitor. If SDS is a component of the RNA-containing solution, do not work at temperatures below 10°C to prevent the precipitation of the surfactant.

Phenol water-saturated, stabilized

stabilized with 0.1 % 8-Hydroxyquinoline

Danger
H373-H314-H341-H301-H331-H311-
P280-P302+P352-P309-
P301+P330+P331-P310



B

Specification:

Assay (titr.)	approx. 75 %	Stability	approx. 15 months
Heavy metals	max. 0.0005 %		
pH (20°C)	4.0		
Water (K.F.)	approx. 25 %		

Order-No.	Quantity
A1624,0100	100 ml
A1624,0250	250 ml
A1624,0500	500 ml

Phenol water-saturated, non-stabilized + separate Tris - Solution (A2492)

without 0.1 % 8-Hydroxyquinoline; with
separate Tris buffer (A2492) for pH
adjustment

Danger
H314-H373-H331-H301-H311-H341-
P309-P310-P301+P330+P331-
P302+P352-P280-P305+P351+P338



B

Specification:

Assay (titr.)	approx. 75 %	Stability	approx. 12 months
Heavy metals	max. 0.0005 %		
pH (20°C)	4.0		
Water (K.F.)	approx. 25 %		

Order-No.	Quantity
A0444,0100	100 ml
A0444,0250	250 ml
A0444,0500	500 ml

Comment: The phenol included in this product corresponds to "Phenol water-saturated, non-stabilized" with the product number A1578. By the addition of the "Phenol equilibration buffer (pH 6.5 - 7.9) with the product number A2492, the product with the number A0444 is generated. This separate Tris buffer solution (Product No.: A2492; 50 ml, 125 ml or 250 ml Tris buffer for 100 ml, 250 ml or 500 ml phenol, respectively) is used for the equilibration of the phenol. By using different amounts of the buffer, corresponding pH values (between 6.6 and 7.5) can be adjusted before use.

Example:

100 ml Phenol (A1578) + ml Tris - Solution results in pH (20°C) of:
10 ml pH 6.50 ± 0.1
20 ml pH 6.88 ± 0.1
30 ml pH 7.15 ± 0.1
40 ml pH 7.35 ± 0.1
50 ml pH 7.48 ± 0.1

Phenol water-saturated, stabilized + separate Tris - Solution (A2492)

stabilized with 0.1 % 8-Hydroxyquinoline;
with separate Tris buffer (A2492)

Danger
H301-H311-H373-H314-H341-H331
P302+P352-P309-P280-P310-
P301+P330+P331-P305+P351+P338



B

Specification:

Assay (titr.) approx. 75 %
Heavy metals max. 0.0005 %
pH (20°C) 4.0
Water (K.F.) approx. 25 %

Stability approx. 15
months

Order-No.	Quantity
A0447,0100	100 ml
A0447,0250	250 ml
A0447,0500	500 ml

Comment: The phenol included in this product corresponds to "Phenol water-saturated, stabilized" with the product number A1624. By the addition of the "Phenol equilibration buffer (pH 6.5 - 7.9) with the product number A2492, the product with the number A0447 is generated. This separate Tris buffer solution (Product-No.: A2492; 50 ml, 125 ml or 250 ml Tris buffer for 100 ml, 250 ml or 500 ml phenol, respectively) is used for the equilibration of the phenol. By using different quantities of the buffer, corresponding pH values (between 6.6 and 7.5) can be adjusted before use (see A0444).
100 ml of Phenol (A0447,0100) include 50 ml of separate Tris buffer (A2492,0050).
250 ml of Phenol (A0447,0250) include 125 ml of separate Tris buffer (A2492,0125).
500 ml of Phenol (A0447,0500) include 250 ml of separate Tris buffer (A2492,0250).

Phenol water-saturated, non-stabilized + separate TLE buffer (A4573)

Danger
H301-H311-H373-H341-H331-H314
P301+P330+P331-P310-P280-
P302+P352-P309



B

Composition:

EDTA 5 mM
LiCl 100 mM
Tris 200 mM
pH (with HCl) 8.2

Specification:

Assay (titr.) approx. 75 %
Heavy metals max. 0.0005 %
pH (20°C) 4.0
Water (K.F.) approx. 25 %

Stability approx. 12
months

Order-No.	Quantity
A3815,0100	100 ml
A3815,0250	250 ml
A3815,0500	500 ml

Values are given for the composition of the TLE buffer (A4573)

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 1995 *Current Protocols in Molecular Biology*, Page 4.3.1-4 (Suppl. 9) Greene Publishing & Wiley-Interscience, New York.

Comment: This product is used for the isolation of RNA from plants. Extract the phenol at the day of your experiment three times with the separate TLE buffer (Product-No.: A4573; volume phenol : TLE 1 : 1). The phenol included in this product corresponds to "Phenol water-saturated, non-stabilized" with the product number A1578. By the addition of the "TLE buffer with the product number A4573, the product with the number A3815 is generated. For the first extraction add 0.5 ml of 15 M NaOH per 250 ml phenol to adjust the pH at 8.0.
100 ml of Phenol (A3815,0100) includes 3 x 100 ml of TLE buffer (A4573,0100).
250 ml of Phenol (A3815,0250) includes 3 x 250 ml of TLE buffer (A4573,0250).
500 ml of Phenol (A3815,0500) includes 3 x 500 ml of TLE buffer (A4573,0500).

Phenol liquid equilibrated / extracted

Carbolic acid

CAS-No.: 108-95-2
HS-No.: 29071100
EC-No.: 203-632-7

Storage: 2-8°C
protected from light
under argon
LGK: 6.1 A
Disposal: 9

Class / PG: 6.1/II
UN2821
WGK: 2
Danger
H314-H341-H301-H331-H311-H373
P280-P305+P351+P338-P309-
P302+P352-P301+P330+P331-P310



Phenol equilibrated, non-stabilized

without 0.1 % 8-Hydroxyquinoline, extracted
with Tris - Solution

Specification:

Assay (titr.) 89 - 90 %
Heavy metals max. 0.0005 %
pH (20°C) 7.8 - 8.2
Water (K.F.) 10 - 11 %

Stability approx. 6 months

Order-No.	Quantity
A0971,0100	100 ml
A0971,0250	250 ml
A0971,0500	500 ml

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 33-41

Phenol extraction in large and small scale.

Comment: DNA-containing solutions are extracted with equilibrated phenol. Equilibration of phenol means the extraction with a Tris buffer, until the phenol reaches a pH value of -7.6 - 8.0. As higher the pH value is, as easier it will be oxidized by air. Stocks of this phenol may be stored in PE-tubes protected from light at -20°C. The use of equilibrated phenol for the purification of DNA is important. At pH values from 5.0 - 6.0, DNA is retarded in the organic phase (phenol) and interphase, while RNA stays in the aqueous phase. In addition, the salt concentration of the aqueous phase has to be above 50 mM (e. g. NaCl or KCl), otherwise DNA (oligomers) will be lost in the phenol phase.

Phenol equilibrated, stabilized

B

stabilized with 0.1 % 8-Hydroxyquinoline,
extracted with Tris - Solution

Specification:

Assay (titr.)	89 - 90 %	Stability	approx. 9 months
Heavy metals	max. 0.0005 %		
pH (20°C)	7.8 - 8.2		
Water (K.F.)	10 - 11 %		

Order-No.	Quantity
A1153,0100	100 ml
A1153,0250	250 ml
A1153,0500	500 ml

Comment: For the efficient extraction of DNA, the use of equilibrated, stabilized Phenol with a high pH (pH approx. 7.5 - 8.0) is important. At low pH values (pH <6) DNA will be retained in the organic phase and interphase, leaving RNA in the aqueous phase. The salt concentration should not remain under 50 mM, because oligomers, in particular, may be lost to the phenol phase. If the salt concentration is too high, an inversion of organic and aqueous phase may occur. The addition of the antioxidant 8-hydroxyquinoline facilitates the identification of the organic phase by its bright yellow color and has the additional advantages of reducing the rate of phenol oxidation and the partial inhibition of ribonucleases. To improve the dissociation of proteins from nucleic acids, which is the fundamental aim of a phenol extraction, the use of chloroform in conjunction with phenol has been shown to increase the yield of nucleic acids. Chloroform denatures proteins (like phenol) and enhances the separation of the organic and aqueous phases. Other advantages are the removal of lipids by chloroform and a reduction of the amount of water retained in the organic phase.

Phenol has a very limited shelf life and its stability is additionally reduced by a high pH. Its 'quality' can be monitored by a change of the color from colorless to pink/red. Such pink/red solutions should not be used, since the oxidized products of phenol may lead to strand breaks of nucleic acids. We recommend the use of stabilized phenol solutions (8-Hydroxychinolinol as an antioxidant). Phenol from AppliChem is bottled under argon. Stocks may be stored frozen in the dark at -20°C in PE tubes.

Phenol extracted with 0.1 M citrate buffer

B

without 0.1 % 8-Hydroxyquinoline

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	4.1 - 4.5
Stability	approx. 9 months

Order-No.	Quantity
A2938,0100	100 ml
A2938,0250	250 ml
A2938,0500	500 ml

Phenol equilibrated with TE (1X) + separate Equilibration buffer (A2492)

B

with separate TE buffer (A2492) for pH
adjustment; without 0.1 % 8-
Hydroxyquinoline

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	approx. 6.7
Stability	approx. 8 months

Order-No.	Quantity
A4271,0100	100 ml
A4271,0250	250 ml
A4271,0500	500 ml

Comment: A separate bottle of Phenol equilibration buffer A2492 is enclosed (same size as phenol bottle, i. e. 50 ml, 125 ml, 250 ml respectively) to adjust the pH of the phenol to approx. 7.6, if required.

Example: 100 ml Phenol equilibrated with TE (1X) + ml Phenol equilibration buffer (pH 6.5 - 7.9) results in a pH (20°C) of:

20 ml	pH 7.28 ± 0.1
40 ml	pH 7.41 ± 0.1
60 ml	pH 7.56 ± 0.1
80 ml	pH 7.61 ± 0.1
100 ml	pH 7.61 ± 0.1

Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1

HS-No.: 38220000

Storage: 2-8°C
protected from light
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/II
UN2810
WGK: 2
Danger
H302-H373-H341-H351-H314-H311-
H331
P301+P330+P331-P309+P311-P280-
P305+P351+P338



Phenol equilibrated, non-stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1

B

without 0.1 % 8-Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol equilibrated (A0971)	500 ml/L

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	7.8 - 8.2
Water (K.F.)	approx. 5 %
Stability	approx. 6 months

Order-No.	Quantity
A0837,0100	100 ml
A0837,0250	250 ml
A0837,0500	500 ml

Phenol equilibrated, stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1

B

Phenol stabilized with 0.1 % 8-
Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol equilibrated, stabilized (A1153)	500 ml/L

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	7.8 - 8.2
Water (K.F.)	approx. 5 %
Stability	approx. 9 months

Order-No.	Quantity
A0889,0100	100 ml
A0889,0250	250 ml
A0889,0500	500 ml

Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1

B

without 0.1 % 8-Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol liquid (A3276)	500 ml/L

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	approx. 5.0
Water (K.F.)	approx. 5 %
Stability	approx. 9 months

Order-No.

A0944,0100	100 ml
A0944,0250	250 ml
A0944,0500	500 ml

Quantity

Phenol stabilized : Chloroform : Isoamyl alcohol 25 : 24 : 1

B

Phenol stabilized with 0.1 % 8-Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol liquid	500 ml/L

Specification:

Heavy metals	max. 0.0005 %	Stability	approx. 12 months
pH (20°C)	approx. 5.0		
Water (K.F.)	approx. 5 %		

Order-No.

A2279,0100	100 ml
A2279,0250	250 ml
A2279,0500	500 ml

Quantity

Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)

B

without 0.1 % 8-Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol liquid (A3276)	500 ml/L

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	approx. 5.0
Water (K.F.)	approx. 5 %
Stability	approx. 9 months

Order-No.

A2489,0100	100 ml
A2489,0250	250 ml
A2489,0500	500 ml

Quantity

Comment: The separate Tris buffer solution (25 ml, 75 ml or 125 ml Tris buffer for 100 ml, 250 ml or 500 ml phenol/CHCl₃/isoamyl alcohol, respectively) is used for the equilibration of the phenol.

By using different quantities of the buffer, corresponding pH values (between 6.8 and 8.0) can be adjusted before use.

The specification applies to the Phenol : Chloroform : Isoamylalcohol - Mixture.

Example: 100 ml Phenol : Chloroform : Isoamyl alcohol (A2489) + ml Tris buffer result in a pH (20°C) of:

5 ml pH 7.38 ± 0.1
10 ml pH 7.59 ± 0.1
15 ml pH 7.76 ± 0.1
20 ml pH 7.87 ± 0.1
25 ml pH 7.96 ± 0.1

Phenol stab. : Chloroform : Isoamyl alcohol 25 : 24 : 1 + separate Tris - Solution (A2492)

B

Phenol stabilized with 0.1 % 8-Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol liquid	500 ml/L

Specification:

Heavy metals	max. 0.0005 %	Stability	approx. 12 months
pH (20°C)	approx. 5.0		
Water (K.F.)	approx. 5 %		

Order-No.

A2493,0100	100 ml
A2493,0250	250 ml
A2493,0500	500 ml

Quantity

Comment: The separate Tris buffer solution (25 ml, 75 ml or 125 ml for 100 ml, 250 ml or 500 ml Phenol/CHCl₃/Isoamyl alcohol solution) is used for the equilibration of the phenol. By using

different quantities of the buffer, corresponding pH values (between 6.8 and 8.0) can be adjusted before use.

The specification given applies to the Phenol : Chloroform : Isoamylalcohol - Mixture.

Example: see A2489

Phenol extracted with citrate buffer : Chloroform : Isoamyl alcohol 25 : 24 : 1

B

extracted with 0.1 M citrate (pH 4.5), 1 mM EDTA; without 0.1 % 8-Hydroxyquinoline

Composition:

Chloroform (A1585)	480 ml/L
Isoamyl alcohol (A0875)	20 ml/L
Phenol extracted	500 ml/L

Specification:

Heavy metals	max. 0.0005 %
pH (20°C)	4.0 - 5.0
Stability	approx. 9 months

Order-No.

A4155,0100	100 ml
A4155,0250	250 ml

Quantity

Phenol equilibration buffer

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Phenol equilibration buffer (Citrat pH 4.3)

B

Specification:

pH (20°C)	4.3 ± 0.1

Order-No.

A5041,0500	500 ml
A5041,1000	1 L

Quantity

Phenol equilibration buffer (Citrate/EDTA pH 4.5)

B

Specification:

pH (20°C)	4.5 ± 0.1

Order-No.

A5047,0500	500 ml
A5047,1000	1 L

Quantity

Phenol equilibration buffer (pH 6.5 - 7.9)

B

Specification:

pH (20°C) 8.0 ± 0.2

Order-No.	Quantity
A2492,0050	50 ml
A2492,0125	125 ml
A2492,0250	250 ml

Phenol equilibration buffer (pH 7.5)

B

- equilibrate phenol directly in the phenol bottle
- simple and convenient phenol equilibration
- acidic phenol can be stored longer - adjust pH of acidic phenol just before use
- used in combination with Phenol water-saturated, non-stabilized (A1578)

Order-No.	Quantity
A4452,0050	50 ml

Comment: The addition of 50 ml of this buffer to 250 ml of water-saturated, non-stabilized phenol (Product number: A1578) will result in a buffered and equilibrated phenol with a pH value of approx. 7.5. The buffer is added directly to the phenol and mixed well. This product has the advantage, that water-saturated phenol is more stable than equilibrated phenol. Equilibrate your phenol just before use.

Phenol equilibration buffer (pH 8.0)

B

- equilibrate phenol directly in the phenol bottle
- simple and convenient phenol equilibration
- acidic phenol can be stored longer - adjust pH of acidic phenol just before use
- used in combination with Phenol water-saturated, non-stabilized (A1578)

Order-No.	Quantity
A4451,0050	50 ml

Comment: The addition of 50 ml of this buffer to 250 ml of water-saturated, non-stabilized phenol (Product number: A1578) will result in a buffered and equilibrated phenol with a pH value of approx. 8.0. The buffer is added directly to the phenol and mixed well. This product has the advantage, that water-saturated phenol is more stable than equilibrated phenol. Equilibrate your phenol just before use.

Phenolphthalein (C.I. 764)

C

3,3-Bis-(4-hydroxyphenyl)-phthalide

C₂₀H₁₄O₄

Storage: RT

WGK: 3



M = 318.33 g/mol

LGK: 6.1 A

Danger

Melting range 258 - 263°C

CAS-No.: 77-09-8

Disposal: 9

H341-H361f-H350

Transition interval pH 8.2 - 10.0

HS-No.: 29322910

P281-P201-P308+P313

(colorless -
redviolet)

EC-No.: 201-004-7

Specification:

Assay (titr.) 98 - 101 %

λ_{max} 551 - 554 nmE 1 %/1 cm, λ_{max} min. 700

Loss on drying max. 1.0 %

Order-No.	Quantity
A1132,0050	50 g
A1132,0100	100 g
A1132,0250	250 g
A1132,0500	500 g

Phenolphthalein - SolutionsReady-to-use indicator solution in 96 %
ethanolHS-No.: 38220000
EC-No.: 201-004-7Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3/II
UN1993**Phenolphthalein - Solution 2 %**

C

Danger
H341-H350-H225
P210-P303+P361+P353-P280

**Composition:**

Phenolphthalein (A1132) ... 2 %

Order-No.	Quantity
A3338,0100	100 ml
A3338,0500	500 ml
A3338,1000	1 L
A3338,10006	6 x 1 L
A3338,2500	2.5 L
A3338,25004	4 x 2.5 L

Phenolphthalein - Solution 1 %

C

Danger
H225-H341-H350
P210-P280-P303+P361+P353



Composition:
Phenolphthalein (A1132) ... 1 %

Order-No.	Quantity
A2547,0100	100 ml
A2547,0500	500 ml
A2547,1000	1 L
A2547,10006	6 x 1 L
A2547,2500	2.5 L
A2547,25004	4 x 2,5 L

Phenolphthalein - Solution 0.1 %

C

Danger
H225-H350
P303+P361+P353-P280-P210



Composition:
Phenolphthalein (A1132) ... 0.1 %

Order-No.	Quantity
A2213,0100	100 ml
A2213,0500	500 ml
A2213,1000	1 L
A2213,10006	6 x 1 L
A2213,2500	2.5 L
A2213,25004	4 x 2,5 L

Phenolphthalein diposphate tetrasodium salt

B

$C_{20}H_{12}Na_4O_{10}P_2$
 $M = 566.20$ g/mol
CAS-No.: 68807-90-9
HS-No.: 29322985
EC-No.: 283-818-2

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Specification:
Assay (titr.) 95 - 101 %
Phenolphthalein max. 0.1 %

Order-No.	Quantity
A1826,0005	5 g
A1826,0010	10 g

Phenol red

- Transition interval .. pH 1.2 - 3.0 (orange - yellow)
 $C_{19}H_{14}O_5S$
 $M = 354.38$ g/mol
CAS-No.: 143-74-8
HS-No.: 29349990
EC-No.: 205-609-7
- Transition interval .. pH 6.5 - 8.0 (brown-yellow - red-violet)

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Phenol red Molecular biology grade

B

Phenolsulfonphthalein

Specification:
DNases/RNases/Proteases not detectable
Identity (IR) complies
Loss on drying max. 1 %

Solubility (0.1 %; 95 % EtOH)
..... clear, yellow

Order-No.	Quantity
A3922,0010	10 g
A3922,0025	25 g

Literature: (1) Klebe, R.J. et al. (1999) *Biotechniques* **27**, 1108-1110

Simple Method for "Hot-Starting" RT-PCR.

Comment: Beside Cresol red, Phenol red serves as a "tracking dye" in PCR reactions (Ref. 1 in Hot-Start RT-PCR). Concentrations up to 0.3 % of Phenol red don't inhibit the PCR reaction. The working concentration was 0.01 %.

Phenol red Cell culture grade

B

Specification:
Pyrogen test complies
Identity (IR) complies
Loss on drying max. 1 %

Solubility (0.1 %; 95 % EtOH)
..... clear, yellow

Order-No.	Quantity
A7615,0010	10 g
A7615,0025	25 g

Literature: (1) Berthois, Y. et al. (1986) *Proc. Natl. Acad. Sci. U.S.A.* **83**, 2496-2500

Phenol red in tissue culture media is a weak estrogen: Implications concerning the study of estrogen-responsive cells in culture.

Comment: Phenol red is used ubiquitously as a pH indicator in tissue culture media, changing the colour of the medium from red to violet with rising pH-values and to yellow at acidic pH values. It has been shown that Phenol red has significant estrogenic activity at the concentrations (15 - 45 µM) at which it is found in tissue culture media by binding to the estrogen receptor (1).

Phenol red

C

Phenolsulfonphthalein

Specification:

Assay (photometr.) min. 95 %
Loss on drying max. 1 %

Order-No.	Quantity
A0680,0010	10 g
A0680,0025	25 g
A0680,0100	100 g

Comment: Phenol red, frequently listed under the description Phenolsulfonphthalein (see Merck Index 13. Ed. (2001) Monograph 7329; page 1301) is a pH indicator for the pH range 1.2 - 3.0 (transition from orange to yellow) and 6.5 - 8.0 with the transition from brownishyellow to red, respectively. The substance is stable in air.
Phenol red is soluble in alcohol (1 g per ca. 350 ml), acetone (1 g per ca. 500 ml), less soluble in water (1 g per ca. 1.3 L). In aqueous solutions of alkali hydroxides (NaOH) it is readily soluble with red color.

Phenol red - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000
EC-No.: 205-609-7

Storage: RT
LGK: 10 - 13
Disposal: 1

Composition:

Phenol red (A0680) 0.1 %

Order-No.	Quantity
A0679,0100	100 ml
A0679,0500	500 ml

Phenol red sodium salt

B

Phenolsulfonphthalein sodium salt

$C_{19}H_{13}NaO_5S$
 $M = 376.36$ g/mol
CAS-No.: 34487-61-1
HS-No.: 29349990
EC-No.: 252-057-8

Storage: RT
LGK: 10 - 13
Disposal: 3

1. Transition interval . . pH 1.2 - 3.0
(orange - yellow)
2. Transition interval . . pH 6.5 - 8.0
(brownyellow - red-violet)

Specification:

Assay (photometr.) min. 95 %
Insoluble matter max. 0.5 %
Loss on drying max. 8 %

Order-No.	Quantity
A4233,0010	10 g
A4233,0025	25 g
A4233,0100	100 g

Phenolsulfonphthalein see Phenol red Page 618

Phenolsulfonphthalein sodium salt see Phenol red sodium salt Page 619

Phenolsulfonphthalein see Phenol red Page 618

Phenoltetrabromophthalein disulfonic acid disodium salt see Sulfobromophthalein disodium salt Page 778

2-Phenoxyethanol

Ethylene glycol phenyl ether,
Phenylglycol

$C_8H_{10}O_2$
 $M = 138.17$ g/mol
CAS-No.: 122-99-6
HS-No.: 29094980
EC-No.: 204-589-7

Storage: RT
LGK: 10
Disposal: 1

WGK: 1
Warning
H319-H302
P305+P351+P338



Boiling point 244 - 250°C
Density (20°C) 1.11 g/cm³
Melting point ~13°C
Solubility 24 g/L (H₂O)

2-Phenoxyethanol pure

C

Specification:

Assay (HPLC) min. 99 %
Density (d₂₀⁴/4°C) 1.107 - 1.108
Identity complies
Peroxides (as H₂O₂) max. 0.005 %

Order-No.	Quantity
A7038,1000	1 L
A7038,2500	2.5 L
A7038,5000	5 L

2-Phenoxyethanol for synthesis

C

Specification:

Assay (HPLC) min. 99 %
Density (d₂₀⁴/4°C) 1.107 - 1.108
Water (K.F.) max. 0.1 %

Order-No.	Quantity
A7312,1000	1 L
A7312,10006	6 x 1 L
A7312,2500	2.5 L
A7312,25004	4 x 2.5 L
A7312,5000	5 L

L-Phenylalanine

L-2-Amino-3-phenylpropionic acid

 $C_9H_9NO_2$

Storage: RT

WGK: nwg

Melting range 275 - 283°C (dec.)

 $M = 165.19 \text{ g/mol}$

LGK: 10 - 13

Solubility (25°C) 27 g/L

CAS-No.: 63-91-2

HS-No.: 29224985

EC-No.: 200-568-1

L-Phenylalanine Cell culture grade

B

Specification:

Pyrogen test	 complies	Chloride	 max. 0.02 %
Assay (titr.)	 min. 99 %	Sulfate	 max. 0.02 %
$\alpha 20^\circ\text{C/D}$; 2 %, H_2O	 -33.0° - -34.7°	As	 max. 0.0001 %
Other amino acids	 max. 0.5 %	Fe	 max. 0.001 %
Ammonium	 max. 0.02 %	Pb	 max. 0.001 %

Order-No.

Quantity

A3464,0100 100 g

A3464,0250 250 g

A3464,0500 500 g

A3464,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Phenylalanine BioChemica

B

Specification:

Assay (titr.)	 min. 99 %	Other amino acids	 max. 0.5 %
$\alpha 20^\circ\text{C/D}$; 2 %, H_2O	 -33.0° - -34.7°	Ammonium	 max. 0.02 %
Heavy metals (as Pb)	 max. 0.001 %	Chloride	 max. 0.02 %
Insoluble matter	 complies	Sulfate	 max. 0.02 %
pH (1 %; H_2O)	 5.4 - 6.0		

Order-No.

Quantity

A3442,0100 100 g

A3442,0250 250 g

A3442,0500 500 g

A3442,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Phenylalanine pure Ph. Eur., USP

C

Specification:

Assay (titr.)	 98.5 - 101.0 %	Loss on drying	 max. 0.3 %	Ammonium	 max. 0.02 %
$\alpha 20^\circ\text{C/D}$; 2 %, H_2O	 -32.7° - -34.7°	Organic vol. impurities	 complies	Chloride	 max. 0.02 %
Appearance of solution	 complies	Residue on ignition	 max. 0.1 %	Sulfate	 max. 0.03 %
Heavy metals (as Pb)	 max. 0.001 %	pH (1 %; H_2O ; 25°C)	 5.4 - 6.0	Fe	 max. 0.001 %
Identity	 complies	Other amino acids	 max. 0.5 %		

Order-No.

Quantity

A1344,0100 100 g

A1344,0250 250 g

A1344,0500 500 g

A1344,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

2-Phenyl-1,2-benzisoxaselenazol-3(2H)-on see Ebselen Page 312

Phenylcarbinol see Benzyl alcohol Page 135

o-Phenylenediamine, free base BioChemica

B

1,2-Diaminobenzene, OPD

 $C_6H_8N_2$

Storage: RT

Class / PG: 6.1/III

 $M = 108.14 \text{ g/mol}$

May darken in storage

UN1673

CAS-No.: 95-54-5

LGK: 6.1 A

WGK: 3

HS-No.: 29215119

Disposal: 9

Danger

EC-No.: 202-430-6

H319-H351-H410-H312-H341-H301-

H317-H332

P273-P281-P305+P351+P338-

P302+P352



Specification:

Assay (HPLC)	 min. 98 %	Order-No.	Quantity
Identity (IR)	 complies	A4883,0005	5 g
Melting point	 100 - 103°C	A4883,0100	100 g
m- & p-Phenylenediamine	 max. 0.25 %	A4883,0500	500 g

p-Phenylenediamine, free base

C

1,4-Diaminobenzene

 $C_6H_8N_2$

Storage: RT

Class / PG: 6.1/III

 $M = 108.14 \text{ g/mol}$

LGK: 6.1 A

UN1673

CAS-No.: 106-50-3

Disposal: 9

WGK: 3

HS-No.: 29215119

Danger

EC-No.: 203-404-7

H319-H311-H317-H410-H301-H331

P304+P340-P302+P352-P280-

P305+P351+P338-P273



Specification:

Assay (titr.)	 min. 99 %	Order-No.	Quantity
Melting range	 141 - 143°C	A4199,0025	25 g
		A4199,0100	100 g
		A4199,0250	250 g

p-Phenylenediamine dihydrochloride BioChemica



B

1,4-Diaminobenzene dihydrochloride,
1,4-Benzenediamine dihydrochloride

$C_6H_{12}N_2 \cdot 2HCl$
 $M = 181.06 \text{ g/mol}$
CAS-No.: 624-18-0
HS-No.: 29215119
EC-No.: 210-34-9

Storage: RT
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/III
UN2811
WGK: 3
Danger
H410-H317-H311-H331-H319-H301
P304+P340-P302+P352-P280-
P305+P351+P338-P273



Melting point 275°C
Solubility (20°C) 100 g/L (H₂O)

Specification:

Assay (titr.) min. 99 %
Appearance white to light brown powder
Identity (IR) complies
Solubility (5 %; H₂O) ... clear, yellowish to brownish

Order-No. Quantity
A8078,0025 25 g
A8078,0100 100 g

2-Phenylethanol for synthesis

C

2-Phenylethyl alcohol, Benzyl carbinol

$C_8H_{10}O$
 $M = 122.17 \text{ g/mol}$
CAS-No.: 60-12-8
HS-No.: 29062900
EC-No.: 200-456-2

Storage: RT
LGK: 10
Disposal: 1

Class / PG: 6.1/III
UN2810
WGK: 1

Boiling point 219°C
Melting point -27°C
Solubility (20°C) 20 g/L (H₂O)

Specification:

Assay (HPLC) min. 99 %
Density (d 20°C/4°C) 1.019 - 1.021
Identity (IR) complies
Refractive index 1.531 - 1.534

Order-No. Quantity
A7597,0005 5 ml
A7597,0250 250 ml
A7597,1000 1 L

2-Phenylethyl alcohol see 2-Phenylethanol for synthesis Page 621
Phenylethylglucosinolate potassium salt see Gluconasturtin HPLC grade Page 376
Phenyl formic acid see Benzoic acid Page 133
Phenylglycol see 2-Phenoxyethanol Page 619
Phenylmethanesulfonyl fluoride see PMSF BioChemica Page 330

pH-Fix Indicator Strips

HS-No.: 38220000

Storage: RT

pH-Fix 0-14 Indicator Strips



C

Universal Indicator Strips, Indicator
Strips for pH value determination

- ◆ universal pH indicator strips covering the full pH range
- non-bleeding
- 100 strips per box
- Size 6 x 85 mm

Order-No. Quantity
A8651,0001 100 Strips

pH-Fix 0-6 Indicator Strips



C

- ◆ universal pH indicator strips covering the acidic pH range 0-6
- non-bleeding
- 100 strips per box
- Size 6 x 85 mm

Order-No. Quantity
A8679,0001 100 Strips

pH-Fix 7-14 Indicator Strips



C

pH Indicator Strips

- ◆ pH indicator strips covering the alkaline pH range 7-14
- non-bleeding
- 100 strips per box
- Size 6 x 85 mm

Order-No. Quantity
A8690,0001 100 Strips

pH Indicator Strips see pH-Fix Indicator Strips Page 621

Phloxine B (C.I. 45410) Microscopy grade



B

2',4',5',7'-Tetrabromo-4,5,6,7-tetrachlorofluorescein disodium salt, Cyanosine, Eosin Blue, Phloxine red

$C_{20}H_2Br_4Cl_4Na_2O_5$
 $M = 829.64$ g/mol
 CAS-No.: 18472-87-2
 HS-No.: 32041200
 EC-No.: 242-355-6

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 2

Solubility (25°C) 100 g/L (H₂O)

Specification:

UV/VIS spectrum complies

Order-No.	Quantity
A8065,0005	5 g
A8065,0025	25 g

Phloxine red see Phloxine B (C.I. 45410) Microscopy grade Page 622

Phomin see Cytochalasins Page 257

Phorbol-12-myristate-13-acetate (PMA)

B

12-O-Tetradecanoylphorbol-13-acetate, TPA

$C_{36}H_{56}O_8$
 $M = 616.84$ g/mol
 CAS-No.: 16561-29-8
 HS-No.: 29159000

Storage: -20°C
 protected from light

Warning
 H312-H315
 P309+P311-P280


Specification:

Assay min. 98 %
 Solubility (DMSO) clear

Order-No.	Quantity
A0903,0001	1 mg
A0903,0005	5 mg
A0903,0010	10 mg

Literature: (1) Fürstenberger, G. & Marks, F. (1983) *J. Invest. Dermatol.* **81**, 157s-161s

Growth stimulation and tumor promotion in skin.

Comment: 12-O-Tetradecanoylphorbol-13-acetate (TPA), also called Phorbol 12-myristate 13-acetate (PMA), binds to protein kinase C and leads to a very strong activation of this enzyme. Physiological effects are very diverse.

TPA is soluble in DMSO or ethanol. The crystalline substance as well as the stock solution should be stored in the dark at -20°C (stock solution 1 mg/ml; working concentration 100 ng/ml). Long term storage should be at -70°C.

Caution: TPA irritates eyes and skin. In the multistep carcinogenesis model of the skin of mice TPA is a very strong tumor promotor. TPA should be handled only by well trained persons.

Phosphatase, acid from sweet potato

B

Orthophosphoric monoester phosphohydrolase
 supplied as 75 % ammonium sulfate solution
 from sweet potato

HS-No.: 35079090

Storage: 2-8°C

Specification:

Activity (37°C) min. 50 U/ml
 Protein (Coomassie) min. 0.3 mg/ml

Order-No.	Quantity
A6977,0050	50 U
A6977,0250	250 U

Comment: **Unit Definition:** One unit will convert one micromole of p-nitrophenylphosphate to p-nitrophenol and phosphate per minute at 37°C.

Phosphatase, acid from wheat germ

B

CAS-No.: 9001-77-8
 HS-No.: 35079090
 EC-No.: 232-630-9

Storage: -20°C
 LGK: 10 - 13

Specification:

Activity/mg Protein min. 0.2 U

Order-No.	Quantity
A3829,0250	250 mg
A3829,0001	1 g

Phosphatase, alkaline bacterial (BAP)

B

Bacterial Alkaline Phosphatase
 Suspension in 2.6 M (NH₄)₂SO₄, pH 8.0

$M = \sim 80000$ g/mol
 CAS-No.: 9001-78-9
 HS-No.: 35079090
 EC-No.: 232-631-4

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

P262

Specification:

Activity/mg Protein min. 30 U
 Activity/ml variable
 Concentration (mg Protein/ml) variable

Order-No.	Quantity
A3827,0001	1 mg
A3827,0005	5 mg

Literature: (1) Mellgren, R.L. et al. (1977) *J. Biol. Chem.* **252**, 6082-6089

Dephosphorylation of Phosphoproteins by *E. coli* Alkaline Phosphatase.

Phosphatase, alkaline from calf intestine (CIP)

[E.C. 3.1.3.1], Calf Intestine
Phosphatase, Phosphohydrolase
(alkaline optimum)
freeze-dried powder

$M = \sim 80000$ g/mol
CAS-No.: 9001-78-9
HS-No.: 35079090
EC-No.: 232-631-4

Storage: -20°C
LGK: 10 - 13

P262

Phosphatase, alkaline from calf intestine (CIP) Grade I

B

Specification:

Activity approx. 100 U/mg

Order-No.	Quantity
A3907,0100	100 mg
A3907,0500	500 mg

Phosphatase, alkaline from calf intestine (CIP) Grade II

B

Specification:

Activity min. 20 DEA-U/mg

Order-No.	Quantity
A3810,0500	500 mg
A3810,0001	1 g
A3810,0005	5 g

Comment: Unit definition: One unit of activity is defined as that amount of enzyme which causes the hydrolysis of one micromole of p-nitrophenyl phosphate per minute at 37°C and pH 9.8 (diethanolamine buffer).
Unit conversion: One glycine unit is equivalent to approximately three DEA units where the glycine unit is defined as: That amount of enzyme causing the hydrolysis of one micromole of p-nitrophenyl phosphate per minute at 25°C and pH 9.6 (glycine buffer).

Phosphate buffered saline see PBS buffer (Dulbecco's) - Powder Page 593

Phosphate buffered saline / Tween® 20 see PBS / Tween® - Solution Page 595

Phosphate buffered saline, 10X concentrated see PBS buffer (Dulbecco's) - Powder Page 593

L-α-Phosphatidylcholine see Lecithins Page 483

Phosphocreatine see Creatine phosphate disodium salt tetrahydrate BioChemica Page 246

Phosphoenolpyruvate monopotassium salt

B

PEP-K, Phosphoenolsuccinic acid
potassium salt

$C_3H_4KO_6P$
 $M = 206.13$ g/mol
CAS-No.: 4265-07-0
HS-No.: 29189990
EC-No.: 224-247-0

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay (enzym.) min. 98 %
Loss on drying max. 1 %

Order-No.	Quantity
A2271,0250	250 mg
A2271,0500	500 mg
A2271,0001	1 g
A2271,0005	5 g

Phosphoenolpyruvate tricyclohexylammonium salt

B

Phosphoenolsuccinic acid tris-
(cyclohexylamine) salt, PEP-3CHA

$C_3H_5O_6P \cdot 3C_6H_{13}N$
 $M = 465.58$ g/mol
CAS-No.: 35556-70-8
HS-No.: 29189990
EC-No.: 252-618-7

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay (enzym.) min. 98 %
Solubility (1 %; H₂O) clear
Water (K.F.) 3.0 - 5.0 %

Order-No.	Quantity
A1810,0250	250 mg
A1810,0500	500 mg
A1810,0001	1 g
A1810,0005	5 g

Phosphoenolsuccinic acid potassium salt see Phosphoenolpyruvate monopotassium salt Page 623

Phosphoenolsuccinic acid tris-(cyclohexylamine) salt see Phosphoenolpyruvate tricyclohexylammonium salt Page 623

6-Phosphogluconic acid trisodium salt BioChemica

B

D-Gluconate-6-phosphate trisodium salt

$C_6H_{10}Na_3O_{10}P$
 $M = 342.08$ g/mol
CAS-No.: 53411-70-4
HS-No.: 29181600
EC-No.: 258-543-6

Storage: -20°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr.) min. 99 %
Solubility (5 %; H₂O) clear, colorless
Water (K.F.) max. 16 %

Order-No.	Quantity
A1825,0250	250 mg
A1825,0500	500 mg
A1825,0001	1 g

Phosphohydrolase (alkaline optimum) see Phosphatase, alkaline from calf intestine (CIP) Page 623

2-Phospho-D-glycerate hydrolase see Enolase, Neuron-specific human Page 327

Phosphoramidon disodium salt *BioChemica*

B

N-(α -Rhamnopyranosylphosphono)-L-leucyl-L-tryptophan disodium salt

C₂₃H₃₂N₃Na₂O₁₀P
M = 587.48 g/mol
CAS-No.: 119942-99-3
HS-No.: 29419000
EC-No.: 252-996-3

Storage: -20°C
LGK: 10 - 13
Disposal: 3

Specification:

Assay (TLC) min. 99 %
Solubility (2 %, Acetic acid) . clear, colorless
Water (K.F.) max. 6 %

Order-No.	Quantity
A2214,0005	5 mg
A2214,0010	10 mg
A2214,0025	25 mg

Literature: (1) Umezawa, H. (1976) *Methods Enzymol.* **45 B**, 678-695
(2) Matsumura, Y. et al. (1990) *Eur. J. Pharmacol.* **185**, 103-106

(3) Keller, P.M. et al. (1996) *Biochem. Biophys. Res. Com.* **223**, 372-378

Structure and activities of protease inhibitors of microbial origin.
Phosphoramidon, a metalloproteinase inhibitor, suppresses the hypertensive effect of big endothelin-1.
Endothelin-converting enzyme: substrate specificity and inhibition by novel analogs of Phosphoramidon.

ortho-Phosphoric acid (concentrations ≥ 25 %)

H ₃ PO ₄	H ₃ O ₄ P	Storage: RT	Class / PG: 8/III
	M = 98.00 g/mol	LGK: 8 B	UN1805
Boiling point 158°C (85 %)	CAS-No.: 7664-38-2	Disposal: 12	WGK: 1
Density (d 20°C/4°C) .. 1.71 (85 %)	HS-No.: 28092000		hygroscopic
Melting point 21°C (85 %)	EC-No.: 231-633-2		

ortho-Phosphoric acid 85 % p. A.

C

Danger
H314-H290
P305+P351+P338-P280-
P301+P330+P331



Specification:

Assay (titr.) min. 85 %
Chloride max. 0.0002 %
Nitrate max. 0.0005 %
Phosphite max. 0.005 %
Sulfate max. 0.005 %
Ca max. 0.005 %
Cu max. 0.0001 %
Fe max. 0.001 %
K max. 0.0005 %
Mg max. 0.001 %
Na max. 0.02 %
Ni max. 0.0001 %

Pb max. 0.0001 %
Zn max. 0.0002 %

Order-No.	Quantity
A0989,0250	250 ml
A0989,0500	500 ml
A0989,1000	1 L
A0989,10006	6 x 1 L
A0989,2500	2.5 L
A0989,25004	4 x 2,5 L
A0989,5000	5 L
A0989,9010	10 L
A0989,9020	20 L
A0989,9025	25 L

ortho-Phosphoric acid 85 % pure Ph. Eur., NF

C

Danger
H314-H290
P280-P305+P351+P338-
P301+P330+P331



Specification:

Assay (titr.) 85.0 - 88.0 %
Alkali phosphates complies
Ammonia-precip. subst. complies
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Chloride max. 0.005 %
Nitrate complies
Phosphite / Hypophosphite complies
Sulfate max. 0.01 %

As max. 0.0002 %
Fe max. 0.005 %

Order-No.	Quantity
A0637,1000	1 L
A0637,10006	6 x 1 L
A0637,2500	2.5 L
A0637,25004	4 x 2,5 L
A0637,5000	5 L
A0637,9010	10 L
A0637,9020	20 L
A0637,9025	25 L

ortho-Phosphoric acid 50 % p. A.

C

Danger
H290-H314
P280-P313-P305+P351+P338



Specification:

Assay (titr.) min. 50 %
Chloride max. 0.0002 %
Nitrate max. 0.0005 %
Phosphite max. 0.005 %
Sulfate max. 0.005 %
Ca max. 0.005 %

Cu max. 0.0001 %
Fe max. 0.001 %
K max. 0.0005 %
Mg max. 0.001 %
Na max. 0.02 %
Ni max. 0.0001 %

Pb max. 0.0001 %
Zn max. 0.0002 %

Order-No.	Quantity
A2652,0250	250 ml
A2652,0500	500 ml
A2652,1000	1 L
A2652,2500	2.5 L
A2652,25004	4 x 2,5 L

ortho-Phosphoric acid 50 % pure

C

Danger
H314-H290
P305+P351+P338-P280-P313

**Specification:**

Assay (titr.) min. 50 %	Sulfate max. 0.01 %
Appearance of solution complies	As max. 0.0002 %
Heavy metals (as Pb) max. 0.001 %	Fe max. 0.005 %
Identity complies	
Chloride max. 0.005 %	

Order-No.	Quantity
A2657,1000	1 L
A2657,2500	2.5 L
A2657,5000	5 L
A2657,9010	10 L

ortho-Phosphoric acid 40 % p. A.

C

Danger
H314-H290
P280-P305+P351+P338-P313

**Specification:**

Assay (titr.) min. 40 %	Ca max. 0.005 %	Na max. 0.02 %
Chloride max. 0.0002 %	Cu max. 0.0001 %	Ni max. 0.0001 %
Nitrate max. 0.0005 %	Fe max. 0.001 %	Pb max. 0.0001 %
Phosphite max. 0.005 %	K max. 0.0005 %	Zn max. 0.0002 %
Sulfate max. 0.005 %	Mg max. 0.001 %	

Order-No.	Quantity
A3530,0250	250 ml
A3530,0500	500 ml
A3530,1000	1 L
A3530,2500	2.5 L

ortho-Phosphoric acid 40 % pure

C

Danger
H314-H290
P280-P305+P351+P338-P313

**Specification:**

Assay (titr.) min. 40 %	As max. 0.0002 %
Appearance of solution complies	Fe max. 0.005 %
Heavy metals (as Pb) max. 0.001 %	
Identity complies	
Chloride max. 0.005 %	
Sulfate max. 0.01 %	

Order-No.	Quantity
A2661,1000	1 L
A2661,10006	6 x 1 L
A2661,2500	2.5 L
A2661,5000	5 L
A2661,9010	10 L

ortho-Phosphoric acid 30 % p. A.

C

Danger
H314-H290
P313-P305+P351+P338-P280

**Specification:**

Assay (titr.) min. 30 %	Ca max. 0.005 %	Na max. 0.02 %
Chloride max. 0.0002 %	Cu max. 0.0001 %	Ni max. 0.0001 %
Nitrate max. 0.0005 %	Fe max. 0.001 %	Pb max. 0.0001 %
Phosphite max. 0.005 %	K max. 0.0005 %	Zn max. 0.0002 %
Sulfate max. 0.005 %	Mg max. 0.001 %	

Order-No.	Quantity
A3512,0500	500 ml
A3512,1000	1 L
A3512,2500	2.5 L

ortho-Phosphoric acid 30 % pure

C

Danger
H290-H314
P280-P313-P305+P351+P338

**Specification:**

Assay (titr.) min. 30 %	As max. 0.0002 %
Appearance of solution complies	Fe max. 0.005 %
Heavy metals (as Pb) max. 0.001 %	
Identity complies	
Chloride max. 0.005 %	
Sulfate max. 0.01 %	

Order-No.	Quantity
A2665,1000	1 L
A2665,10006	6 x 1 L
A2665,2500	2.5 L
A2665,5000	5 L
A2665,9010	10 L

ortho-Phosphoric acid 25 % pure

C

Danger
H314-H290
P280-P305+P351+P338-P313

**Specification:**

Assay (titr.) min. 25 %	Fe max. 0.005 %
Appearance of solution complies	
Heavy metals (as Pb) max. 0.001 %	
Identity complies	
Chloride max. 0.005 %	
Sulfate max. 0.01 %	
As max. 0.0002 %	

Order-No.	Quantity
A4231,1000	1 L
A4231,10006	6 x 1 L
A4231,2500	2.5 L
A4231,25004	4 x 2.5 L
A4231,5000	5 L
A4231,9010	10 L

ortho-Phosphoric acid (concentrations: ≥ 10 % - < 25 %)

H_3PO_4	H_3O_4P $M = 98.00 \text{ g/mol}$ CAS-No.: 7664-38-2 HS-No.: 28092000 EC-No.: 231-633-2	Storage: RT LGK: 8 B Disposal: 12	Class / PG: 8/III UN1805 WGK: 1 hygroscopic Warning H319-H315 P313-P305+P351+P338-P280	

ortho-Phosphoric acid 20 % pure

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 20 %	As max. 0.0002 %	A3358,1000	1 L
Appearance of solution complies	Fe max. 0.005 %	A3358,10006	6 x 1 L
Heavy metals (as Pb) max. 0.001 %		A3358,2500	2.5 L
Identity complies		A3358,5000	5 L
Chloride max. 0.005 %		A3358,9010	10 L
Sulfate max. 0.01 %			

ortho-Phosphoric acid 10 % p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 10 %	Cu max. 0.0001 %	A2670,0500	500 ml
Chloride max. 0.0002 %	Fe max. 0.001 %	A2670,1000	1 L
Nitrate max. 0.0005 %	K max. 0.0005 %	A2670,10006	6 x 1 L
Phosphite max. 0.005 %	Mg max. 0.001 %	A2670,2500	2.5 L
Sulfate max. 0.005 %	Na max. 0.02 %	A2670,25004	4 x 2,5 L
Ca max. 0.005 %	Ni max. 0.0001 %		
	Pb max. 0.0001 %		
	Zn max. 0.0002 %		

ortho-Phosphoric acid 10 % pure Ph. Eur., NF

C

Specification:		Order-No.	Quantity
Assay (titr.) 9.5 - 10.5 %	Chloride max. 0.0006 %	A2675,1000	1 L
Alkali phosphates complies	Hypophosphite / Phosphite complies	A2675,10006	6 x 1 L
Appearance of solution complies	Other tests complies	A2675,2500	2.5 L
Heavy metals (as Pb) max. 0.0001 %	Sulfate max. 0.001 %	A2675,5000	5 L
Identity complies	As max. 0.0002 %	A2675,9010	10 L
NH ₃ -precipitable subst. complies			

ortho-Phosphoric acid 5 % pure

C

H_3PO_4	H_3O_4P $M = 98.00 \text{ g/mol}$ CAS-No.: 7664-38-2 HS-No.: 28092000 EC-No.: 231-633-2	Storage: RT LGK: 8 B Disposal: 12	WGK: 1 Warning H290 P390-P406	

Specification:		Order-No.	Quantity
Assay (titr.) min. 5 %	As max. 0.0002 %	A3385,1000	1 L
Appearance of solution complies	Fe max. 0.005 %	A3385,10006	6 x 1 L
Heavy metals (as Pb) max. 0.001 %		A3385,2500	2.5 L
Identity complies		A3385,5000	5 L
Chloride max. 0.005 %		A3385,9010	10 L
Sulfate max. 0.01 %			

Phosphoric acid 1-naphthyl ester monosodium salt see 1-Naphthyl phosphate monosodium salt monohydrate *BioChemica* Page 561
 Phosphoric acid 2-naphthyl ester monosodium salt see 2-Naphthyl phosphate monosodium salt *BioChemica* Page 561

Phosphorous acid 98 % p. A.

C

Boiling point 200°C Melting point 73°C	H_3O_3P $M = 82.00 \text{ g/mol}$ CAS-No.: 13598-36-2 HS-No.: 28111980	Storage: RT LGK: 8 B Disposal: 2	Class / PG: 8/III UN2834 WGK: 1 hygroscopic Danger H314-H302 P280-P305+P351+P338	 

Specification:		Order-No.	Quantity
Assay (titr.) min. 98 %	Cu max. 0.005 %	A5034,0500	500 g
Chloride max. 0.005 %	Fe max. 0.005 %	A5034,1000	1 kg
Ni max. 0.01 %	Ni max. 0.005 %	A5034,10006	6 x 1 kg
Sulfate max. 0.01 %	Pb max. 0.005 %		

Phosphorous acid ≤ 50 %

H_3PO_3	H_3O_3P	Storage: RT	Class / PG: 8/III
Density (d 20°C/4°C) ... 1.15 (30 %)	$M = 82.00$ g/mol	LGK: 8 B	UN3264
Thermal dec. 180°C	CAS-No.: 13598-36-2	Disposal: 12	WGK: 1
	HS-No.: 28111980		very hygroscopic
	EC-No.: 237-066-7		Danger
			H314
			P305+P351+P338-P280



Phosphorous acid 50 % p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 50 %	Cu max. 0.0001 %	A2774,0500	500 ml
Chloride max. 0.005 %	Mn max. 0.0001 %	A2774,1000	1 L
Nitrate max. 0.0005 %	Ni max. 0.0005 %	A2774,10006	6 x 1 L
Sulfate max. 0.005 %	Pb max. 0.0005 %	A2774,2500	2.5 L
As max. 0.0005 %	Zn max. 0.0005 %	A2774,25004	4 x 2.5 L
Cd max. 0.001 %			

Phosphorous acid 30 % p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 30 %	As max. 0.0005 %	A1748,0500	500 ml
Chloride max. 0.005 %	Cd max. 0.001 %	A1748,1000	1 L
Nitrate max. 0.0005 %	Cu max. 0.0001 %	A1748,2500	2.5 L
Sulfate max. 0.005 %	Mn max. 0.0001 %		
	Ni max. 0.0005 %		
	Pb max. 0.0005 %		
	Zn max. 0.0005 %		

Phosphorous acid 10 % p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 10 %	As max. 0.0005 %	A0412,1000	1 L
Chloride max. 0.005 %	Cd max. 0.001 %	A0412,2500	2.5 L
Nitrate max. 0.0005 %	Cu max. 0.0001 %	A0412,5000	5 L
Sulfate max. 0.005 %	Mn max. 0.0001 %		
	Ni max. 0.0005 %		
	Pb max. 0.0005 %		
	Zn max. 0.0005 %		

Phosphorus(V) oxide see di-Phosphorus pentoxide Page 627

di-Phosphorus pentoxide

<i>Phosphorus(V) oxide, P_4O_{10}</i>	O_5P_2	Storage: RT	Class / PG: 8/II
Melting point 580 - 585°C	$M = 141.94$ g/mol	LGK: 8 B	UN1807
	CAS-No.: 1314-56-3	Disposal: 12	WGK: 1
	HS-No.: 28091000		very hygroscopic
	EC-No.: 215-236-1		Danger
			H314
			P280-P301+P330+P331-P260-
			P305+P351+P338



di-Phosphorus pentoxide p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 98 %	Fe max. 0.005 %	A0996,0250	250 g
Ammonium max. 0.001 %	Mn max. 0.0005 %	A0996,0500	500 g
Chloride max. 0.001 %		A0996,1000	1 kg
As max. 0.005 %		A0996,10006	6 x 1 kg
Cu max. 0.0005 %			

di-Phosphorus pentoxide pure

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 97 %		A2418,0500	500 g
Heavy metals (as Pb) max. 0.01 %		A2418,1000	1 kg
Chloride max. 0.005 %		A2418,10006	6 x 1 kg

Phthalic acid monopotassium salt see Potassium hydrogen phthalate p.A. Page 647

Picrosid II HPLC grade

B

6-Vanilloyl/catalpol from <i>Picrorhiza kurroa</i>	$C_{23}H_{28}O_{13}$	Storage: 2-8°C
	$M = 512.47$ g/mol	LGK: 10 - 13
	CAS-No.: 39012-20-9	
	HS-No.: 29124100	

Specification:		Order-No.	Quantity
Assay min. 98 %		A2067,0020	20 mg
		A2067,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Pikric acid - Solution 1.2 %

C

2,4,6-Trinitrophenol - Solution, saturated

CAS-No.: 88-89-1
HS-No.: 29089990
EC-No.: 201-865-9

Storage: RT
LGK: 10 - 13

WGK: 2
P280

Specification:

Assay approx. 12 g/L

Order-No.	Quantity
A2520,0500	500 ml
A2520,1000	1 L
A2520,10006	6 x 1 L
A2520,2500	2.5 L
A2520,25004	4 x 2,5 L

Piperazine-1,4-bis-(2-ethanesulfonic acid) see PIPES Page 628
Piperazine-1,4-bis-(2-ethanesulfonic acid) 1.5sodium salt see PIPES 1.5sodium salt Buffer grade Page 629
Piperazine-1,4-bis-(2-ethanesulfonic acid) disodium salt see PIPES disodium salt Buffer grade Page 628
Piperazine-1,4-bis-(2-ethanesulfonic acid) sesquisodium salt see PIPES 1.5sodium salt Buffer grade Page 629
Piperazine-1,4-bis-(2-ethanesulfonic acid) sodium salt see PIPES sodium salt Buffer grade Page 628
Piperazine-1,4-bis-(2-hydroxy-propane-sulfonic acid) dihydrate see POPSO dihydrate Buffer grade Page 635
Piperazinediacrylamide see 1,4-Diacryloyl piperazine BioChemica Page 272

PIPES

Piperazine-1,4-bis-(2-ethanesulfonic acid)

$C_8H_{18}N_2O_6S_2$
 $M = 302.37 \text{ g/mol}$
CAS-No.: 5625-37-6
HS-No.: 29335995
EC-No.: 227-057-6

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Useful pH range pH 6.1 - 7.5
 pK_a (20°C) 6.8

PIPES Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Loss on drying max. 1 %
Fe max. 0.001 %
Pb max. 0.0001 %

A (1 cm/0.1 M in 0.1 M NaOH)
260 nm max. 0.05
280 nm max. 0.04

Order-No.	Quantity
A3495,0100	100 g
A3495,0250	250 g
A3495,0500	500 g

PIPES Buffer grade

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.0005 %
Loss on drying max. 1 %

A (1 cm/0.1 M in 0.1 M NaOH)
260 nm max. 0.05
280 nm max. 0.04

Order-No.	Quantity
A1079,0100	100 g
A1079,0250	250 g
A1079,0500	500 g
A1079,1000	1 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* 5, 467-477

Hydrogen ion buffers for biological research.

PIPES disodium salt Buffer grade

B

Piperazine-1,4-bis-(2-ethanesulfonic acid) disodium salt

$C_8H_{16}N_2Na_2O_6S_2$
 $M = 346.33 \text{ g/mol}$
CAS-No.: 76836-02-7
HS-No.: 29335995
EC-No.: 278-562-3

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Useful pH range pH 6.1 - 7.5
 pK_a (20°C) 6.8

Specification:

Assay (titr.) min. 95 %
Heavy metals (as Pb) max. 0.001 %
Loss on drying max. 3 %

A (1 cm/0.1 M in H_2O)
260 nm max. 0.04
280 nm max. 0.02

Order-No.	Quantity
A1140,0025	25 g
A1140,0100	100 g
A1140,0500	500 g

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* 5, 467-477

Hydrogen ion buffers for biological research.

PIPES sodium salt Buffer grade

B

Piperazine-1,4-bis-(2-ethanesulfonic acid) sodium salt

$C_8H_{17}N_2NaO_6S_2$
 $M = 324.36 \text{ g/mol}$
CAS-No.: 10010-67-0
HS-No.: 29335995
EC-No.: 233-005-3

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Useful pH range pH 6.1 - 7.5
 pK_a (20°C) 6.8

Specification:

Assay (titr.) min. 97 %
Heavy metals (as Pb) max. 0.001 %
pH (2 % H_2O) 4.0 - 5.0
Loss on drying max. 1 %

A (1 cm/0.1 M in H_2O)
260 nm max. 0.06
280 nm max. 0.04

Order-No.	Quantity
A1080,0025	25 g
A1080,0100	100 g
A1080,0500	500 g

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* 5, 467-477

Hydrogen ion buffers for biological research.

PIPES 1.5sodium salt Buffer grade

B

Piperazine-1,4-bis-(2-ethanesulfonic acid) sesquisodium salt, Piperazine-1,4-bis-(2-ethanesulfonic acid) 1.5sodium salt

$C_{16}H_{33}N_4Na_3O_{12}S_4$
 $M = 670.66 \text{ g/mol}$
CAS-No.: 100037-69-2
HS-No.: 29335995

Storage: RT

P262

Useful pH range pH 6.1 - 7.5

Specification:

Assay (titr.) min. 96 %
pH (1 %; H_2O) 6.4 - 7.2
Loss on drying max. 4 %

A (1 cm/0.1 M in H_2O)
260 nm max. 0.05
280 nm max. 0.03

Order-No.	Quantity
A1511,0025	25 g
A1511,0100	100 g
A1511,0250	250 g

PKC412 BioChemica



B

Benzoylstauroporine, Midostaurin, 4-N-Benzoylstauroporine, CGP 41251
Semisynthetic derivative of Staurosporine

$C_{35}H_{30}N_4O_4$
 $M = 570.6 \text{ g/mol}$
CAS-No.: 120685-11-2
HS-No.: 29419000

Storage: -20°C
protected from light
hygroscopic

Melting point 225 - 235°C

Specification:

Assay (TLC) min. 96 %
 λ_{max} 241, 292, 334, 370 nm

Appearance white to off-white clear, colorless
powder
Solubility (10 mg/ml DMSO)

Order-No.	Quantity
A8634,0001	1 mg
A8634,0005	5 mg

Comment: PKC412 is soluble in DMSO and Dichloromethanol. The Solubility in H_2O is < 0.1 mg/ml.

Plastone see Polyvinylpyrrolidone Page 634

Plate Count Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Glucose 1.0 g/L
Peptones 5.0 g/L
Yeast extract 2.5 g/L

Specification:

pH before autoclaving ... approx. 7.0 (20°C)

Order-No.	Quantity
A3369,0500	500 g
A3369,5000	5 kg

Literature: (1) American Public Health Association (1978) Standard Methods for the Examination of Dairy Products. 14th. ed., APHA Inc., Washington, D.C.

Comment: This is a standard medium, designed for the enumeration of total viable microorganisms, including anaerobic spores and spore-forming bacteria e.g. from food.

Preparation: Suspend 23.5 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize at 121°C for 15 min. Store the prepared medium at 2-8°C.

recombinant Mouse Platelet-Derived Growth Factor-AA see rM PDGF-AA Page 600
recombinant Human Platelet-Derived Growth Factor-AA see rHu PDGF-AA Page 599
recombinant Human Platelet-Derived Growth Factor-AB see rHu PDGF-AB Page 600
recombinant Human Platelet-Derived Growth Factor-BB see rHu PDGF-BB Page 600

Pluronic® F-68

B

Synperonic® F-68

$M = \sim 8400 \text{ g/mol}$
CAS-No.: 9003-11-6
HS-No.: 34021300

Storage: RT
LGK: 10 - 13

WGK: 1

Classification: nonionic detergent
Melting point approx. 55°C

Specification:

Solubility (1 %; H_2O) clear
pH (5 %; H_2O) 5.0 - 8.0

Order-No.	Quantity
A1288,0100	100 g
A1288,0500	500 g

®trademark of ICI

Literature: (1) Ghebeh, H. et al. (1998) *Anal. Biochem.* **262**, 39-44
(2) Hom, L.G. & Volkman, L.E. (1998) *Biotechniques* **25**, 18-20

Measurement of Pluronic F-68 in mammalian cell culture.
Prevention of proteolytic artefacts in Baculovirus-expression systems.

Comment: Pluronics are copolymers from ethylene- and propylene oxide. Pluronic F-68 has a molecular weight of 8400 and consists mainly of ethylene oxid (approx. 80 %). It is applied in the culturing of mammalian cells in large batches. It prevents the sticking of air bubbles to cells, which develop during mixing within the fermentor, stabilizes the foam on the surface or improves the resistance of the cell membrane against hydrodynamic shearing.

PMS see Phenazine methosulfate Page 611

PMSF BioChemica

B

Phenylmethanesulfonyl fluoride,
Benzylsulfonyl fluoride

C₇H₇FO₂S
M = 174.19 g/mol
CAS-No.: 329-98-6
HS-No.: 29049095
EC-No.: 206-350-2

Storage: RT
LGK: 8 B
Disposal: 3

Class / PG: 8(6.1)/II
UN2923
WGK: 3
Danger
H314-H301
P305+P351+P338-P310-P280



Melting point 91 - 94°C

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.001 %
Solubility (10 %, EtOH) clear
Sulfated ash max. 0.1 %

Water (K.F.) max. 0.5 %

Order-No.	Quantity
A0999,0005	5 g
A0999,0025	25 g
A0999,0100	100 g

Literature: (1) Fahrney, D.E. & Gold, A.M. (1963) *J. Am. Chem. Soc.* **85**, 996-1000

(2) Gold, A.M. & Fahrney, D.E. (1964) *Biochemistry* **3**, 783-791

(3) Prouty, W.F. & Goldberg, A.L. (1972) *J. Biol. Chem.* **247**, 3341-3352

(4) James, G.T. (1978) *Anal. Biochem.* **86**, 574-579

Sulfonyl fluorides as inhibitors of esterases. I. Rates of reaction with acetylcholinesterase, α -Chymotrypsin and trypsin.
Sulfonyl fluorides as inhibitors of esterases. II Formation and reactions of phenylmethanesulfonyl α -Chymotrypsin.
Effects of protease inhibitors on protein breakdown in *E. coli*.
Inactivation of the protease inhibitor Phenylmethylsulfonyl fluoride in buffers.

Comment: PMSF is an irreversible inhibitor of serin-proteases like trypsin, chymotrypsin and cysteine proteases. The inhibition of cysteine proteases can be reverted by reducing thioles. It is frequently used for the preparation of proteins from cell lysates. PMSF is limited soluble in water. Stock solutions are prepared in organic solvents (e. g. 10 mg/ml in 10 % Isopropanol). The effective concentration of PMSF is 0.1 - 1 mM. The LD₅₀ (i.p.) for the mouse is 200 mg/kg.

Stability: In aqueous solutions PMSF is inactivated very fast, especially at raising pH and temperature. Therefore, it has to be added fresh during each working step. At pH 7.0, 7.5 and 8.0 at 25°C the half life is 110, 55 and 35 minutes respectively. Stock solutions (Isopropanol) are stable for about 9 months at +4°C (4). Stock solutions of PMSF (10 - 100 mM; 1.74 mg/ml - 17.4 mg/ml, respectively) are prepared with anhydrous Ethanol, Methanol or Isopropanol and stored at -20°C. PMSF may crystallize in Isopropanol at -20°C.

Caution: PMSF is extremely toxic to mucous membranes of the lung, eyes and skin. Any contact by inhalation, swallowing or contact with skin must be avoided. After contact with skin wash immediately with plenty of water. We recommend to use **AESBF** instead of PMSF, which is as effective but substantially less toxic.

PNAG see 4-Nitrophenyl-N-acetyl- β -D-glucosaminide *BioChemica* Page 573

PNK see T4 Polynucleotide kinase Page 790

P₄O₁₀ see di-Phosphorus pentoxide Page 627

Polyclear AT see Polyvinylpyrrolidone insoluble *BioChemica* Page 633

Polyetherin A see Nigericin sodium salt *BioChemica* Page 567

Polyethylene glycol

HO(C₂H₄O)_nH
CAS-No.: 25322-68-3
HS-No.: 39072011
EC-No.: 500-038-2

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Polyethylene glycol 200 BioChemica

B

Specification:

Average M 190 - 210
Hydroxyl-No. 535 - 590
Loss on drying max. 2 %

Order-No.	Quantity
A0445,1000	1 L
A0445,2500	2.5 L
A0445,5000	5 L

Literature: (1) Chomczynski, P. & Rymaszewski, M. (2006) *BioTechniques* **40**, 454-458

Alkaline polyethylene glycol-based method for direct PCR from bacteria, eukaryotic tissue samples, and whole blood.

Polyethylene glycol 300 BioChemica

B

Specification:

Average M 285 - 315
Hydroxyl-No. 356 - 394
Loss on drying max. 2 %

Order-No.	Quantity
A2853,1000	1 L
A2853,2500	2.5 L
A2853,5000	5 L

Polyethylene glycol 300 pure Ph. Eur.

C

Specification:

Acidic/alk. react. impurities . complies
Appearance of solution . complies
Dyn. viscosity 80 - 105 mPas (20°C)
Heavy metals max. 0.002 %
Hydroxyl-No. 340 - 394
Identity complies

Kin. viscosity 71 - 94 mm²/s
Red. substances complies
Sulfated ash max. 0.2 %
Dioxane (GC) max. 0.001 %
Ethylene glycol/Diethylene glycol max. 0.4 %

Ethylene oxide (GC) max. 0.0001 %
Formaldehyde . . . max. 0.0015 %
Loss on drying . . . max. 2.0 %

Order-No.	Quantity
A5537,0250	250 ml
A5537,1000	1 L
A5537,10006	6 x 1 L
A5537,5000	5 L

Polyethylene glycol 400 BioChemica

B

Specification:

Average M 380 - 420
Hydroxyl-No. 264 - 300
Melting range 4 - 8°C
Loss on drying max. 2 %

Order-No.	Quantity
A2203,0500	500 ml
A2203,1000	1 L
A2203,2500	2.5 L

Polyethylene glycol 400 pure

C

Specification:

Average M 380 - 420
Melting range 4 - 8°C
Loss on drying max. 2 %

Order-No.	Quantity
A7311,1000	1 L
A7311,10006	6 x 1 L
A7311,5000	5 L

Polyethylene glycol 600 *BioChemica*

B

Density (20°C) 1.13 g/cm³

Specification:

Average M 570 - 630
Heavy metals (as Pb) max. 0.002 %
Hydroxyl-No. 178 - 197

Identity complies
Melting range 17 - 22°C
Sulfated ash max. 0.2 %

Loss on drying . max. 2 %

Order-No.
A5336,1000
A5336,5000

Quantity
1 L
5 L

Polyethylenglycol 600 pure Ph. Eur.

C

Specification:

Acidic/alk. react. impurities . complies
Appearance of solution complies
Congealing temperature 15 - 25°C
Density (50 %; m/m, 20°C) . 1.20 - 1.21 g/ml
Dyn. viscosity (50 %, 20°C) . 15 - 20 mPas
Heavy metals max. 0.002 %

Hydroxyl-No. 178 - 197
Identity complies
Kin. viscosity (50 %; m/m; 20°C) 13.9 - 18.5 mm²/s
Red. substances complies
Sulfated ash max. 0.2 %

Dioxane max. 0.001 %
Ethylene glycol/Diethylene glycol max. 0.4 %
Ethylene oxide . max. 0.0001 %
Formaldehyde . max. 0.003 %
Loss on drying . max. 2.0 %

Order-No.
A8491,1000
A8491,5000

Quantity
1 L
5 L

Polyethylene glycol 1000 *BioChemica*

B

Specification:

Average M 950 - 1050
Hydroxyl-No. 107 - 118
Melting range 33 - 40°C

Loss on drying max. 2 %

Order-No.
A3202,1000
A3202,5000

Quantity
1 kg
5 kg

Polyethylene glycol 1500 *BioChemica*

B

Specification:

Average M 1400 - 1600
Heavy metals (as Pb) max. 0.002 %
Hydroxyl-No. 70 - 80

Melting range 42 - 48°C
Sulfated ash max. 0.2 %
Loss on drying max. 1 %

Order-No.
A6328,1000
A6328,5000

Quantity
1 kg
5 kg

Polyethylene glycol 1500 pure Ph. Eur.

C

Specification:

Acidic/alk. react. impurities . complies
Appearance of solution complies
Congealing temperature 42 - 48°C
Dyn. viscosity (50 %, 20°C) . 34 - 50 mPas
Heavy metals max. 0.002 %
Hydroxyl-No. 70 - 80

Identity complies
Kin. viscosity (50 %; m/m; 20°C) 31 - 46 mm²/s
Red. substances complies
Sulfated ash max. 0.2 %
Dioxane max. 0.001 %

Ethylene glycol/Diethylene glycol max. 0.4 %
Ethylene oxide . max. 0.0001 %
Formaldehyde . max. 0.0015 %
Loss on drying . max. 1.0 %

Order-No.
A7425,1000
A7425,10006
A7425,5000

Quantity
1 kg
6 x 1 kg
5 kg

Polyethylene glycol 4000 *BioChemica*

B

Specification:

Average M 3500 - 4500
Hydroxyl-No. 25 - 32
Melting range 54 - 58°C

pH (5 %; H₂O; 20°C) . . . 4.0 - 7.0
Loss on drying max. 1 %

Order-No.
A1249,1000
A1249,5000

Quantity
1 kg
5 kg

Literature: (1) Power, J.B. *et al.* (1986) *Methods Enzymol.* **118**, 578-594
(2) Ingham, K.C. (1990) *Methods Enzymol.* **182**, 301-306

Fusion and transformation of plant protoplasts.
Precipitation of proteins with polyethylene glycol.

Comment: Polyethylene glycol 4000 (PEG 4000) is used e. g. for the fusion of bacterial spheroplasts (1) or the fractionated precipitation of proteins (2). Both references supply protocols and the theoretical background for the application of PEG.

Polyethylene glycol 4000 pure Ph. Eur.

C

Specification:

Acidic/alk. react. impurities . complies
Appearance of solution complies
Congealing temperature 53 - 59°C
Dyn. viscosity (50 %, 20°C) . 110 - 170 mPas
Heavy metals max. 0.002 %
Hydroxyl-No. 25 - 32

Identity complies
Kin. viscosity (50 %; m/m; 20°C) 102 - 158 mm²/s
Red. substances complies
Sulfated ash max. 0.2 %
Dioxane max. 0.001 %

Ethylene glycol/Diethylene glycol max. 0.4 %
Ethylene oxide . max. 0.0001 %
Formaldehyde . max. 0.0015 %
Loss on drying . max. 1.0 %

Order-No.
A7424,1000
A7424,10006
A7424,5000

Quantity
1 kg
6 x 1 kg
5 kg

Polyethylene glycol 6000 Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Average M 5000 - 7000
Heavy metals (as Pb) max. 0,001 %
Hydroxyl-No. 16 - 22

Melting range 56 - 61°C
pH (5 %; H₂O; 20°C) . . . 4.5 - 7.0
Loss on drying max. 0.5 %

Order-No.
A3099,0250
A3099,0500
A3099,1000

Quantity
250 g
500 g
1 kg

Polyethylene glycol 6000 BioChemica

B

Melting range 56 - 63°C

Specification:

Average M 5000 - 7000 pH (5 %; H₂O; 20°C) ... 4.5 - 7.0
Heavy metals (as Pb) max. 0.005 % Loss on drying max. 1 %
Hydroxyl-No. 16 - 22

Order-No.
A1387,1000 1 kg
A1387,5000 5 kg

Literature: (1) Yamamoto, K.R. *et al.* (1970) *Virology* **40**, 734-744

Rapid Bacteriophage sedimentation in the presence of Polyethyleneglycol and its application to large-scale virus purification.
Fusion and transformation of plant protoplasts.
'Macromolecular crowding' enables 'blunt-end' ligations.
Polymer-stimulated ligation of blunt and sticky DNA ends.
Precipitation of proteins with polyethylene glycol.

(2) Power, J.B. *et al.* (1986) *Methods Enzymol.* **118**, 578-594
(3) Zimmerman, S.B. & Pfeiffer, B.H. (1983) *Proc. Natl. Acad. Sci. USA* **80**, 5852-5856
(4) Pfeiffer, B.H. & Zimmerman, S.B. (1983) *Nucleic. Acids Res.* **11**, 7853-7871
(5) Ingham, K.C. (1990) *Methods Enzymol.* **182**, 301-306

Comment: Polyethylene glycol (PEG) is used for different purposes like virus / phage accumulation (1), fusion plant protoplasts (2) or the fractionated precipitation of proteins (5). Besides, it improves the ligation efficiency by 'macromolecular crowding', i. e. the concentration of the molecules in solution (40 % stock solution in ref. 3, 4).

Polyethylene glycol 6000 pure Ph. Eur., USP

C

Specification:

Acidic/alk. react. impurities . complies Identity complies
Appearance of solution complies Kin. viscosity (50 %; 20°C) max. 0.4 %
Congealing temperature 55 - 61°C Ethylene glycol/Diethylene glycol max. 0.0001 %
Dyn. viscosity 200 - 270 mPas (50 %; 20°C) Ethylene oxide (GC) max. 0.0015 %
Heavy metals max. 0.002 % Red. substances complies
Hydroxyl-No. 16 - 22 Sulfated ash max. 0.2 %
pH 4.5 - 7.5
Dioxane (GC) max. 0.001 %

Order-No.
A6564,1000 1 kg
A6564,10006 6 x 1 kg
A6564,5000 5 kg

Polyethylene glycol 8000 BioChemica

B

Specification:

Average M 7000 - 9000 pH (5 %; H₂O) 5.5 - 7.0 (20°C)
Heavy metals max. 0.005 %
Solubility (5 %; H₂O) clear, colorless

Order-No.
A2204,0500 500 g
A2204,1000 1 kg

Literature: (1) Zimmerman, S.B. & Harrison, B. (1985) *Nucleic Acids Res.* **13**, 2241-2249

'Macromolecular crowding' increases the cohesion of DNA with complementary ends.
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Pages 1.70, 1.71, 4.35; Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(3) Odom, O.W. *et al.* (1997) *Anal. Biochem.* **245**, 249-252

An effect of PEG 8000 on the mobility of proteins in SDS-PAGE and a methode to eliminate these effects.

Comment: The kinetic of the ligation in the cloning of DNA-fragments into bacteriophage M13-vectors can be improved by the inclusion of 5 % polyethylene glycol 8000 (PEG 8000; ref. 2). Especially for the cloning with 'blunt-ended' DNA, the concentration of 'blunt'-DNA-ends plays a crucial role for the successful cloning. Substances, that increase the so-called 'macromolecular crowding' and condense DNA molecules into aggregates, concentrate the DNA and increase the possibility, that DNA ends will meet and thereby improve the cloning result (1,2). So, the DNA and enzyme concentration can be reduced. Besides, such substances reduce the intramolecular ligation (religation). For 'blunt end' cloning the recommended PEG 8000 concentration is 15 %.
Stock solutions of PEG 8000 (40 %) are prepared with deionized water and stored at -20°C in small aliquots.

Polyethylene glycol 8000 pure Ph. Eur.

C

Specification:

Acidic/alk. react. impurities . complies Identity complies
Appearance of solution complies Kin. viscosity (50 %; m/m; 20°C) max. 0.4 %
Congealing temperature 55 - 62°C Ethylene glycol/Diethylene glycol max. 0.0001 %
Dyn. viscosity (50 %, 20°C) 260 - 510 mPa·s Ethylene oxide (GC) max. 0.0015 %
Heavy metals max. 0.002 % Red. substances complies
Hydroxyl-No. 12 - 16 Sulfated ash max. 0.2 %
Dioxane (GC) max. 0.001 %

Order-No.
A6422,1000 1 kg
A6422,10006 6 x 1 kg
A6422,5000 5 kg

Polyethylene glycol 10000 pure

C

Specification:

Average M 9000 - 12500
Hydroxyl-No. 9 - 12
Identity (IR) complies
Melting range 58 - 63°C

Order-No.
A7438,1000 1 kg
A7438,10006 6 x 1 kg
A7438,5000 5 kg

Polyethylene glycol 20000 BioChemica

B

Specification:

Average M 16000 - 25000 pH (5 %; H₂O) 4 - 7
Heavy metals max. 0.005 %
Solubility (5 %; H₂O) clear, colorless

Order-No.
A7619,1000 1 kg
A7619,5000 5 kg

Polyethylene glycol 20000 pure Ph. Eur.

C

Specification:

Acidic/alk. react. impurities . complies Identity complies
Appearance of solution complies Kin. viscosity (50 %; m/m; 20°C) max. 0.001 %
Average M 16000 - 25000 Ethylene oxide max. 0.0001 %
Congealing temperature min. 57°C Formaldehyde max. 0.003 %
Dyn. viscosity (50 %, 20°C) 2700 - 3500 mPa·s Loss on drying max. 1.0 %
Heavy metals max. 0.002 % Red. substances complies
Sulfated ash max. 0.2 %

Order-No.
A7449,1000 1 kg
A7449,5000 5 kg

Polyethylene glycol hexadecylether see Briji® 58 BioChemica Page 157

Polyethyleneglycol-mono-[p-(1,1,3,3,3-tetra methylbutyl)-phenyl]-ether see Triton® X-100 Page 840

Polyglycol see Polyethylene glycol Page 630

Polymyxin B sulfate *BioChemica*

B

Aerosporin

$C_{55}H_{96}N_{16}O_{13} \cdot 2H_2SO_4$
 $M = 1385.63$ g/mol
CAS-No.: 1405-20-5
HS-No.: 29419000
EC-No.: 215-774-7

Storage: RT
protected from light
LGK: 10 - 13

Specification:

Activity ~7000 I.U./mg
Loss on drying max. 5 %
Sulfated ash max. 1 %
pH (2 %; H_2O) 5.0 - 7.0

Sulfate max. 17 %

Order-No.	Quantity
A0890,0001	1 g
A0890,0005	5 g
A0890,0010	10 g

Literature: (1) Storm, D.R. et al. (1977) *Ann. Rev. Biochem.* **46**, 723-763
(2) Schächtele, C. et al. (1988) *Biochem. Biophys. Res. Com.* **151**, 542-547
(3) Raynor, R.L. et al. (1991) *J. Biol. Chem.* **266**, 2753-2758
(4) Lucas, M. et al. (1994) *Biochem. Pharmacol.* **47**, 667-672
(5) Schupp, J.M. et al. (1995) *BioTechniques* **19**, 18-20

Review article: Polymyxin and related peptide antibiotics.
Stimulus-dependent inhibition of platelet aggregation by PKC-inhibitors.
Membrane interaction of amphiphil polypeptides: Mastoparan, Melittin, Polymyxin B.
Protein kinase C activation increases the survival of mature lymphocytes.
Reagent for the permeabilisation of bacteria for enzyme assays.

Comment: Polymyxin B was isolated from *Bacillus polymyxa* and is a component of the polymyxin-complex, consisting of polymyxin A-E and M. Just polymyxin B and E are of practical importance. Polymyxin B is a basic, cyclic octa- (or hepta-) peptide with a peptide side chain. It permeabilizes the bacterial cytoplasmic membrane by interaction with phospholipid components. The efflux of essential components explain the bactericidal activity against non-proliferating bacteria. The bactericidal activity will be reduced by divalent ions (Fe^{2+} , Mn^{2+} , Ca^{2+} , Mg^{2+}), non-saturated fatty acids and polyphosphates. Polymyxin B is only active against proliferating and non-proliferating gram negative bacteria.

Stability: It is a faint yellow powder, stable and resistant against heat (in solutions at pH values from 2 - 7, especially 3 - 5). It is inactivated in strong acidic or alkaline solutions. An aqueous solution can be stored at +4°C for approx. 2 months (5). Polymyxin may be dissolved in water or methanol (< 25 mg/ml). It is of low solubility in organic solvents.

Polymyxin E₁ disulfate see Colistin sulfate *BioChemica* Page 221
Polynactin see Nonactin *BioChemica* Page 576
Polynucleotide kinase, T4 see T4 Polynucleotide kinase Page 790
Polyoxyethylene see Polyethylene glycol Page 630
Polyoxyethylenesorbitane monolaurate see Tween® 20 Page 846
Polyoxyethylenesorbitane monolaurate - Solution see Tween® 20 - Solution 10 % peroxide-free Page 847
Polyoxyethylenesorbitane monooleate see Tween® 80 Page 847
Polyoxyethylenesorbitane monooleate - Solution see Tween® 80 - Solution 10 % peroxide-free Page 847
Polyoxymethylene see Paraformaldehyde Page 592

Polyvinyl alcohol 72000 *BioChemica*

B

Melting point 265°C
Polymerisation grade : 1600

$M =$ approx. 72000 g/mol
CAS-No.: 9002-89-5
HS-No.: 39053000
EC-No.: 215-774-7

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay min. 98 %
Loss on drying max. 5 %

Order-No.	Quantity
A2255,0250	250 g
A2255,0500	500 g
A2255,1000	1 kg

Literature: (1) Negi, D.S. & Stephens, R.J. (1977) *J. Histochem. Cytochem.* **25**, 149-154
(2) Fujii, M. et al. (1992) *Genes & Dev.* **6**, 2066-2076
(3) De Block, M. (1995) *Methods Cell Biology* **49**, 153-163
(4) Groves, P.J. et al. (1997) *Anal. Biochem.* **245**, 247-248

Histochemical localisation of Glc-6-phosphate dehydrogenase in tissue.
Interaction of TAX1 and p67^{SRF}.
In Situ enzyme histochemistry with plastic-embedded plant material.
Stabilisation of the binding of sulfated glycosaminoglycans to dimethyl methylene blue.

Comment: The incubation of animal and plant tissue in "incubation medium" (22 % Polyvinylalcohol (PVA) in 200 mM Tris-Maleate (pH 7,2) stabilizes the protein/tissue and prevents the diffusion of enzymes (1). Sometimes, polyvinyl alcohol at a concentration of 2 % is included in 'band shift' reactions (e. g. ref. 2).

Solubility: PVA is hardly soluble in water. It might be dissolved in a hot waterbath while shaking (e. g. ref. 3: 10 % PVA in 100 mM Tris, pH 7; heating to 90°C). To prevent, that PVA will stick to the glass, make sure, that the level of the water in the waterbath is higher than the level of the solution in the flask. PVA sticks to plastic surfaces less than to glass. That's why it is recommended to use disposable plastic pipetts (1).

Polyvinyl formal see Formvar® Resin Electron Microscopy Grade Page 362

Polyvinylidene fluoride transfermembran see Transfer Membranes: Nitrocellulose, Nylon, PVDF Page 825

Polyvinylpyrrolidone insoluble *BioChemica*

B

PVPP, Polyclar AT
cross linked Polyvinylpyrrolidone

CAS-No.: 25249-54-1
HS-No.: 39059990
EC-No.: 201-800-4

Storage: RT

Melting point > 300°C

Specification:

Assay (from N) 11.0 - 12.8 %
Heavy metals (as Pb) max. 0.001 %
Water (K.F) max. 5 %
pH (1 %; H_2O) 5.0 - 8.0

Order-No.	Quantity
A2257,0250	250 g
A2257,0500	500 g
A2257,1000	1 kg

Literature: (1) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193
(2) Steiner, J.J. et al. (1995) *Nucleic Acids Res.* **23**, 2569-2570

Preparation of plant extracts.
A 'one-tube'-genomic DNA-extraction procedure for PCR- and RAPD-analysis.

Comment: Many plant species contain polyphenols (e. g. flavonoides, tannins) in their vacuols, which inhibit enzymes. They react with hydroxyl-, thiole- or primary amine groups. These phenolic substances and alkaloides may be complexed by incubation with polyvinylpyrrolidone (PVPP; ref. 1).

Solid PVPP is added to the buffers at a concentration of 1.5 % (w/v). To guarantee the complete hydration, it shall be added 2 - 24 hours before use (1).

Polyvinylpyrrolidone

Plastone, Povidone, PVP

CAS-No.: 9003-39-8
HS-No.: 39059990
EC-No.: 201-800-4

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Polyvinylpyrrolidone (K15) BioChemica

B

M = approx. 10000 (g/mol)

Specification:

Assay (from N)	12.0 - 12.8 %	Water (K.F.)	max. 5 %
Heavy metals (as Pb)	0.001 %	pH (5 %; H ₂ O)	3.0 - 5.0
Solubility (10 %; H ₂ O)	clear, colorless to yellowish		

Order-No.	Quantity
A2258,0250	250 g
A2258,0500	500 g
A2258,1000	1 kg

Literature: (1) Kim, C.S. *et al.* (1997) *Nucleic Acids Res.* **25**, 1085-1086
(2) Fu, R.-Z. *et al.* (1998) *BioTechniques* **25**, 796-801

Isolation of genomic DNA from fruit trees and conifers.
Isolation of genomic DNA from dried plant rhizomes / roots.

Polyvinylpyrrolidone (K30) BioChemica

B

M = approx. 40000 (g/mol)

Specification:

Assay (from N)	12.0 - 12.8 %	Water (K.F.)	max. 5 %
Heavy metals (as Pb)	0.001 %	pH (5 %; H ₂ O)	3.0 - 5.0
Solubility (10 %; H ₂ O)	clear, colorless to yellowish		

Order-No.	Quantity
A2259,0250	250 g
A2259,0500	500 g
A2259,1000	1 kg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 2.3.4 (Suppl. 27) and Page 10.8.15 (Suppl. 39). Greene Publishing & Wiley-Interscience, New York.
(2) John, M.E. (1992) *Nucleic Acids Res.* **20**, 2381

Isolation of RNA and DNA from plants with a high content of polyphenols.

Comment: The high concentration of polyphenols in many plants is a problem for isolating nucleic acids, as these substances will inhibit enzymes in the following procedures. They can be absorbed by the addition of 1 % polyvinylpyrrolidone K30 (v/v; final concentration) during the tissue homogenization (ref. 1 page 2.3.4). PVP should be prepared fresh as a 20 % stock each time (2).
Positively charged nylon membranes used in immunoblots show a high non-specific background. Therefore, these surfaces have to be blocked, in case of the nylon membrane in a very stringent way. Casein (6 % w/v) in combination with 1 % (v/v) polyvinylpyrrolidone (PVP) can be applied. Both substances are dissolved by stirring for 5 minutes in warm (65°C) TTBS buffer.

Polyvinylpyrrolidone (K90) Molecular biology grade

B

M = approx. 360000 (g/mol)

Specification:

DNases/RNases/Proteases	not detectable		slightly yellow
Assay (from N)	11.5 - 12.8 %	Water (K.F.)	max. 5 %
Heavy metals (as Pb)	0.001 %	pH (10 %; H ₂ O)	5.0 - 9.0
Solubility (10 %; H ₂ O)	clear, colorless to		

Order-No.	Quantity
A2260,0250	250 g
A2260,0500	500 g
A2260,1000	1 kg

Literature: (1) Denhardt, D.T. (1966) *Biochem. Biophys. Res. Com.* **23**, 641-646

A Membrane-filter technique for the detection of complementary DNA.

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition pages 9.47-9.55. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Polyvinylpyrrolidone (K90) pure Ph. Eur.

C

M = approx. 360000 (g/mol)

Specification:

Assay (from N)	11.5 - 12.8 %	Sulfated ash	max. 0.1 %	Peroxides (as H ₂ O ₂)	max. 0.04 %
Appearance of solution	complies	Viscosity (as K-value)	complies	Loss on drying	max. 5.0 %
Heavy metals (as Pb)	max. 0.001 %	pH (5 %; H ₂ O)	4.0 - 7.0		
Identity	complies	Aldehydes	max. 0.05 %		
Impurities	complies	Hydrazine	complies		

Order-No.	Quantity
A5422,0500	500 g
A5422,1000	1 kg
A5422,5000	5 kg

Polyvinylpyrrolidone (K90) pure

C

M = approx. 360000 (g/mol)

Specification:

Assay (from N)	11.5 - 12.8 %
Heavy metals (as Pb)	0.001 %
Loss on drying	max. 5 %
pH (5 %; H ₂ O)	5.0 - 9.0

Order-No.	Quantity
A6393,0500	500 g
A6393,1000	1 kg
A6393,5000	5 kg

Ponceau 4R see Cochenille Red (C.I. 16255) Page 220

Ponceau S (C.I. 27195)

B

3-Hydroxy-4-[2-sulfo-4-(4-sulfophenylazo)-phenylazo]-2,7-naphthalenedisulfonic acid

$C_{22}H_{12}N_4Na_4O_{13}S_4$
 $M = 760.56$ g/mol
CAS-No.: 6226-79-5
HS-No.: 29270000
EC-No.: 228-319-2

Storage: RT
LGK: 10 - 13

WGK: 3

Specification:

Assay min. 80 %
 λ_{max} (H₂O) 517 - 523 nm
Loss on drying max. 10 %

Order-No.	Quantity
A1405,0010	10 g
A1405,0025	25 g
A1405,0100	100 g

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; page 18.67. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(2) Correia, H. *et al.* (1997) *BioTechniques* **22**, 846-848

(3) Bannur, S.V. *et al.* (1999) *Anal. Biochem.* **267**, 382-389

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, Page 10.8.7. (Suppl. 39), Greene Publishing & Wiley-Interscience, New York.

(5) Salinovich, O. & Montelaro, R.C. (1986) *Anal. Biochem.* **156**, 341-347

(6) Vanfleteren, J.R. *et al.* (1992) *BioTechniques* **12**, 550-557

Protein staining with Ponceau S during TAU gel electrophoresis.

Protein determination with Ponceau S on nitrocellulose membranes.

Reversible Staining of Proteins Transferred to Nitrocellulose after Separation by SDS-PAGE.

Peptide Mapping and Microsequencing of Proteins by SDS-PAGE After Limited *In Situ* Acid Hydrolysis.

Ponceau S - Solution

B

Solution in Acetic acid 5 %

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 4

Density (d 20°C/4°C) ... 1.01
n 20°C/D 1.338

Composition:

Acetic acid 50 g/L
Ponceau S 1 g/L

Order-No.	Quantity
A2935,0100	100 ml
A2935,0500	500 ml

POPSO dihydrate Buffer grade

B

Piperazine-1,4-bis-(2-hydroxy-propane-sulfonic acid) dihydrate

$C_{10}H_{22}N_2O_8S_2 \cdot 2H_2O$
 $M = 398.42$ g/mol
CAS-No.: 68189-43-5
HS-No.: 29349990
EC-No.: 269-199-1

Storage: RT
LGK: 10 - 13

WGK: 1

Useful pH range pH 7.2 - 8.5
pK_a (20°C) 7.85

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 10 %
A (1 cm/0.1 M in 1 M NaOH)
260 nm max. 0.1
280 nm max. 0.05

Order-No.	Quantity
A1081,0025	25 g
A1081,0100	100 g

Literature: (1) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers for biological research.

Potassium acetate

CH₃COOK, Acetic acid potassium salt

$C_2H_3KO_2$
 $M = 98.15$ g/mol
CAS-No.: 127-08-2
HS-No.: 29152900
EC-No.: 204-822-2

Storage: RT
LGK: 10 - 13

WGK: 1

Melting point 292°C
Solubility (20°C) 2530 g/L (H₂O)

Potassium acetate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
pH (5 %; H₂O) 7.5 - 9.0 (20°C)
Chloride max. 0.005 %
Nitrate max. 0.005 %

Sulfate max. 0.001 %
As max. 0.0001 %
Ca max. 0.001 %
Cu max. 0.0001 %
Fe max. 0.0005 %

Na max. 0.5 %
Pb max. 0.0001 %
Zn max. 0.005 %

Order-No.	Quantity
A4279,0500	500 g
A4279,1000	1 kg
A4279,5000	5 kg

Potassium acetate BioChemica

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H₂O) 7.5 - 9.0 (20°C)
Chloride max. 0.005 %

Sulfate max. 0.001 %

A (1 cm/1 M in H₂O)
260 nm max. 0.02
280 nm max. 0.02

Order-No.	Quantity
A2369,0500	500 g
A2369,1000	1 kg
A2369,5000	5 kg

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

(2) Zhou, A. (1997) *BioTechniques* **23**, 592-594

Precipitation of nucleic acids.

Improved alkaline lysis for the rapid isolation of plasmid DNA.

Potassium acetate p. A.

C

Specification:

Assay (titr.)	min. 99 %
Chloride	max. 0.005 %
Nitrate	max. 0.005 %
Sulfate	max. 0.001 %
As	max. 0.0001 %

Ca	max. 0.001 %
Cu	max. 0.001 %
Fe	max. 0.0005 %
Na	max. 0.5 %
Pb	max. 0.0001 %

Zn max. 0.005 %

Order-No.	Quantity
A3625,0500	500 g
A3625,1000	1 kg
A3625,10006	6 x 1 kg
A3625,5000	5 kg

Potassium acetate pure Ph. Eur.

C

Specification:

Assay (titr.)	99.0 - 101.0 %
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.0004 %
Identity	complies
Loss on drying	max. 3.0 %
Red. substances	complies
pH (5 %; H ₂ O)	7.5 - 9.0

Chloride	max. 0.02 %
Sulfate	max. 0.02 %
Fe	max. 0.002 %
Na	max. 0.5 %

Order-No.	Quantity
A1498,0500	500 g
A1498,1000	1 kg
A1498,10006	6 x 1 kg
A1498,5000	5 kg
A1498,9010	10 kg
A1498,9025	25 kg

Potassium aluminium sulfate dodecahydrate

Melting point	 92°C
Solubility (20°C)	 139 g/L (H ₂ O)

AlK ₃ O ₉ S ₂ · 12H ₂ O
M = 474.39 g/mol
CAS-No.: 7784-24-9
HS-No.: 28333000
EC-No.: 233-141-3

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Potassium aluminium sulfate dodecahydrate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %
Chloride	max. 0.0005 %
As	max. 0.00001 %
Fe	max. 0.0005 %

Na	max. 0.002 %
Pb	max. 0.0005 %

Order-No.	Quantity
A2811,0250	250 g
A2811,1000	1 kg
A2811,10006	6 x 1 kg

Potassium aluminium sulfate dodecahydrate pure Ph. Eur., BP, USP

C

Specification:

Assay (titr.)	99.0 - 100.5 %
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.002 %
Identity	complies
Loss on drying (400°C)	43.0 - 46.0 %

pH (10 %; H ₂ O)	3.0 - 3.5
Ammonium	max. 0.2 %
Fe	max. 0.01 %

Order-No.	Quantity
A4396,1000	1 kg
A4396,10006	6 x 1 kg
A4396,5000	5 kg
A4396,9010	10 kg

Potassium bicarbonate see Potassium hydrogen carbonate Page 645
Potassium bichromate see Potassium dichromate Page 641
Potassium biphthalate see Potassium hydrogen phthalate p.A. Page 647

Potassium bromate - Standard volumetric solution (1/60 M)

C

1/60 mol/L (0.1 N Solution)

HS-No.: 38220000

Storage: RT
LGK: 6.1 B
Disposal: 22

Danger
H350
P201-P309-P310-P280


Specification:

Factor limits	0.998 - 1.002

Order-No.	Quantity
A2869,0500	500 ml
A2869,1000	1 L
A2869,10006	6 x 1 L
A2869,5000CT	5 L
A2869,5000PE	5 L

Potassium bromide

KBr, Bromopotassium

BrK
M = 119.01 g/mol
CAS-No.: 7758-02-3
HS-No.: 28275100
EC-No.: 231-830-3

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Boiling point	 1380°C
Melting point	 730°C
Solubility (20°C)	 540 g/L (H ₂ O)

Potassium bromide BioChemica

B

Specification:

Assay (titr.)	min. 99.5 %
Heavy metals (as Pb)	max. 0.001 %
Insoluble matter	complies
pH (2 %; H ₂ O)	5.0 - 8.0 (20°C)
Loss on drying	max. 0.5 %

Bromate	max. 0.001 %
Chloride	max. 0.1 %
Iodide	max. 0.005 %
Sulfate	max. 0.005 %

A (1 cm/1 M in H ₂ O)
260 nm max. 0.01
280 nm max. 0.01

Order-No.	Quantity
A3866,0250	250 g
A3866,0500	500 g
A3866,1000	1 kg

Potassium bromide p. A.

C

Specification:

Assay (titr.)	min. 99.5 %
pH (2 %; H ₂ O)	5.0 - 8.0 (20°C)
Loss on drying	max. 0.5 %
Bromate	max. 0.001 %
Chloride	max. 0.1 %
Iodide	max. 0.005 %

Sulfate	max. 0.005 %
As	max. 0.0001 %
Ba	max. 0.002 %
Ca	max. 0.001 %
Fe	max. 0.0005 %
Mg	max. 0.001 %

Na	max. 0.05 %
Pb	max. 0.0005 %

Order-No.	Quantity
A2373,0250	250 g
A2373,0500	500 g
A2373,1000	1 kg
A2373,10006	6 x 1 kg
A2373,5000	5 kg

Potassium bromide pure Ph. Eur.

C

Specification:

Assay (titr.)	98.0 - 100.5 %
Acidic/alk. react. subst.	complies
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.001 %
Identity	complies
Loss on drying	max. 1.0 %

Bromate	complies
Chloride	max. 0.6 %
Iodide	complies
Sulfate	max. 0.01 %
Fe	max. 0.002 %
Mg/Alk. earth metals	max. 0.02 %

Order-No.	Quantity
A0562,0500	500 g
A0562,1000	1 kg
A0562,10006	6 x 1 kg
A0562,5000	5 kg
A0562,9010	10 kg

Potassium carbonate



Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
hygroscopic
Warning
H319-H315-H335
P305+P351+P338-P302+P352



Melting point	891°C
Solubility (20°C)	1120 g/L (H ₂ O)

M = 138.21 g/mol
CAS-No.: 584-08-7
HS-No.: 28364000
EC-No.: 209-529-3

Potassium carbonate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %
Loss on drying	max. 1 %
Chloride	max. 0.005 %
Silicate	max. 0.002 %
Sulfate	max. 0.005 %

As	max. 0.00005 %
Fe	max. 0.0005 %
Mg	max. 0.001 %
Na	max. 0.02 %
Pb	max. 0.0005 %

Zn	max. 0.0005 %

Order-No.	Quantity
A2367,0500	500 g
A2367,1000	1 kg
A2367,10006	6 x 1 kg
A2367,5000	5 kg

Potassium carbonate pure Ph. Eur., USP, Food grade

C

Specification:

Assay (titr.)	99.5 - 100.5 %
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.0005 %
Identity	complies
Insoluble subst.	complies
Loss on drying (180°C)	max. 0.5 %

Volatile organic subst.	complies
Chloride	max. 0.002 %
Sulfate	max. 0.01 %
As	max. 0.0002 %
Ca	max. 0.005 %
Fe	max. 0.001 %

Hg	max. 0.0001 %
Na	max. 0.05 %
Pb	max. 0.0005 %

Order-No.	Quantity
A0573,1000	1 kg
A0573,10006	6 x 1 kg
A0573,5000	5 kg
A0573,9010	10 kg
A0573,9025	25 kg

Potassium carbonate Technical grade

C

Specification:

Assay (titr.)	min. 97 %

Order-No.	Quantity
A6551,5000	5 kg
A6551,9010	10 kg
A6551,9025	25 kg

Potassium chlorate (with anti-caking-agent)

KClO₃
M = 122.55 g/mol
CAS-No.: 3811-04-9
HS-No.: 28291900
EC-No.: 223-289-7

Storage: RT
LGK: 5.1 A
Disposal: 22

Class / PG: 5.1/II
UN1485
WGK: 2
Danger
H271-H302-H411-H332
P273-P210



Potassium chlorate pure (with anti-caking-agent)

C

Specification:

Assay (titr.)	min. 99 %
Heavy metals (as Pb)	max. 0.005 %
Identity	complies
Chloride	max. 0.05 %

Order-No.	Quantity
A9158,1000	1 kg
A9158,10006	6 x 1 kg
A9158,5000	5 kg

Comment: The anti-caking-agent is insoluble in water. To get a clear solution please filtrate.

Potassium chlorate Technical grade (with anti-caking-agent)

C

Specification:

Assay (titr.)	min. 97 %

Order-No.	Quantity
A9131,1000	1 kg
A9131,10006	6 x 1 kg
A9131,5000	5 kg

Potassium chloride

KCl	CIK	Storage: RT	WGK: 1
	<i>M</i> = 74.56 g/mol	LGK: 10 - 13	
Melting point 773°C	CAS-No.: 7447-40-7	Disposal: 14	
Solubility (20°C) 330 g/L (H ₂ O)	HS-No.: 31042090		
	EC-No.: 231-211-8		

Potassium chloride Molecular biology grade

B

Specification:			Order-No.	Quantity
DNases/RNases/Proteases not detectable	Sulfate max. 0.005 %	Na max. 0.02 %	A2939,0250	250 g
Assay (titr.) min. 99.5 %	As max. 0.00005 %	Pb max. 0.0005 %	A2939,0500	500 g
Loss on drying (2 h) max. 0.5 % (130°C)	Ba max. 0.001 %		A2939,1000	1 kg
pH (5 %; H ₂ O) 5.5 - 8.5 (20°C)	Ca max. 0.001 %		A2939,10006	6 x 1 kg
Bromide max. 0.05 %	Fe max. 0.0005 %		A2939,5000	5 kg
Iodide max. 0.002 %	Mg max. 0.001 %			

Potassium chloride Cell culture grade

B

Specification:			Order-No.	Quantity
Pyrogen test complies	Bromide max. 0.05 %	Fe max. 0.001 %	A3980,0250	250 g
Assay (titr.) min. 99.5 %	Iodide max. 0.002 %	Pb max. 0.001 %	A3980,0500	500 g
Loss on drying max. 0.5 %	Sulfate max. 0.005 %		A3980,1000	1 kg
pH (5 %; H ₂ O) 5.5 - 8.5 (20°C)	As max. 0.0005 %			

Potassium chloride BioChemica

B

Specification:			Order-No.	Quantity
Assay (titr.) min. 99.5 %	Bromide max. 0.05 %	A (1 cm ³ /l M in H ₂ O)	A1039,0500	500 g
Heavy metals (as Pb) max. 0.001 %	Iodide max. 0.002 %	260 nm max. 0.01	A1039,1000	1 kg
Insoluble matter complies	Sulfate max. 0.005 %	280 nm max. 0.01	A1039,5000	5 kg
Loss on drying (2 h; 130°C) max. 0.5 %				
pH (5 %; H ₂ O; 20°C) 5.5 - 8.5				

Literature: (1) Cram, L.S. *et al.* (1990) *Methods Cell Biol.* **33**, 369-376

Univariate analysis of metaphase chromosomes using the hypotonic Potassium chloride-Propidium iodide protocol.
Chromosome and nuclei isolation with the MgSO₄ procedure.

(2) Trask, B. & VanDen Engh, G. (1990) *Methods Cell Biol.* **33**, 363-367

Potassium chloride p. A.

C

Specification:			Order-No.	Quantity
Assay (titr.) min. 99.5 %	As max. 0.00005 %	Na max. 0.02 %	A3582,0500	500 g
Loss on drying (2 h) max. 0.5 % (130°C)	Ba max. 0.001 %	Pb max. 0.0005 %	A3582,1000	1 kg
Bromide max. 0.05 %	Ca max. 0.001 %		A3582,10006	6 x 1 kg
Iodide max. 0.002 %	Fe max. 0.0005 %		A3582,5000	5 kg
Sulfate max. 0.005 %	Mg max. 0.001 %			

Potassium chloride pure Ph. Eur., USP

C

Specification:			Order-No.	Quantity
Assay (titr.) 99.0 - 100.5 %	Loss on drying max. 1.0 %	Ca, Mg complies	A1362,1000	1 kg
Acidic/alkaline react. subst. complies	Organic vol. impurities complies	Fe max. 0.002 %	A1362,10006	6 x 1 kg
Acidity, alkalinity complies	Bromide max. 0.1 %	Mg/Alk. earth metals (as Ca)	A1362,5000	5 kg
Appearance of solution complies	Iodide max. 0.005 %	 max. 0.02 %	A1362,9010	10 kg
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.03 %	Na (Ph.Eur.) max. 0.1 %	A1362,9025	25 kg
Identity complies	Ba complies	Na (USP) complies		

Potassium chloride Technical grade

C

Specification:		Order-No.	Quantity
Assay (titr.) min. 98 %		A6907,5000	5 kg
Loss on drying (2 h) max. 2 % (130°C)		A6907,9010	10 kg
		A6907,9025	25 kg

Potassium chloride - Solutions

HS-No.: 28273985	Storage: RT	WGK: 1
EC-No.: 231-211-8	LGK: 10 - 13	
	Disposal: 28	

Potassium chloride - Solution 15 %

C

Composition:	Specification:	Order-No.	Quantity
Potassium chloride 150 g/L	pH (H ₂ O) 5.5 - 8.5 (20°C)	A3311,0500	500 ml
		A3311,1000	1 L
		A3311,5000	5 L

Potassium chloride - Solution (4 M)

C

4 mol/L (4 N Solution)

Composition:

Potassium chloride (A3582) 298.24 g/L

Specification:

pH (H₂O; 20°C) 5.5 - 8.5

Order-No.

A5158,0500

A5158,1000

A5158,5000

Quantity

500 ml

1 L

5 L

Potassium chloride - Solution (3.5 M)

C

3.5 mol/L (3.5 N Solution)

Composition:

Potassium chloride (A3582) 260.95 g/L

Specification:

pH (H₂O; 20°C) 5.5 - 8.5

Order-No.

A3984,0500

A3984,1000

A3984,5000

Quantity

500 ml

1 L

5 L

Potassium chloride - Solution (3 M) Molecular biology grade

B

3 mol/L (3 N Solution)

Composition:

Potassium chloride (A2939) 223.68 g/L

Specification:

DNases/RNases/Proteases

..... not detectable

pH (H₂O; 20°C) 5.5 - 8.5

Order-No.

A4280,0250

A4280,0500

A4280,1000

Quantity

250 ml

500 ml

1 L

Potassium chloride - Solution (3 M)

C

3 mol/L (3 N Solution)

Composition:

Potassium chloride (A3582) 223.68 g/L

Specification:

pH (H₂O; 20°C) 5.5 - 8.5

Order-No.

A1164,0250

A1164,0500

A1164,1000

A1164,10006

A1164,5000CT

A1164,5000PE

A1164,9010CT

A1164,9010PE

Quantity

250 ml

500 ml

1 L

6 x 1 L

5 L

5 L

10 L

10 L

Potassium chloride - Solution (1 M)

C

1 mol/L (1 N Solution)

Composition:

Potassium chloride (A3582) 74.56 g/L

Specification:

pH (H₂O; 25°C) 5.0 - 8.0

Order-No.

A3867,0500

A3867,1000

A3867,10006

A3867,5000CT

A3867,5000PE

Quantity

500 ml

1 L

6 x 1 L

5 L

5 L

Potassium chloride - Solutions saturated with silver chloride

HS-No.: 38220000

EC-No.: 231-211-8

Storage: RT

LGK: 10 - 13

Disposal: 27

WGK: 1

Potassium chloride - Solution (4 M) saturated with silver chloride

C

Composition:

Potassium chloride (A3582) 298.24 g/L

Silver nitrate for saturation

Specification:

pH (H₂O; 20°C) 5.5 - 8.5

Order-No.

A3238,0500

A3238,1000

A3238,2500

Quantity

500 ml

1 L

2.5 L

Potassium chloride - Solution (3.5 M) saturated with silver chloride

C

Composition:

Potassium chloride (A3582) 260.96 g/L

Silver nitrate for saturation

Specification:

pH (H₂O; 20°C) 5.5 - 8.5

Order-No.

A0938,0250

A0938,0500

A0938,1000

A0938,2500

A0938,25004

Quantity

250 ml

500 ml

1 L

2.5 L

4 x 2.5 L

Potassium chloride - Solution (3 M) saturated with silver chloride

C

*3 mol/L (3 N Solution), saturated with silver chloride***Composition:**Potassium chloride (A3582) 223.68 g/L
Silver nitrate for saturation**Specification:**pH (H₂O; 20°C) 5.5 - 8.5

Order-No.	Quantity
A0693,0250	250 ml
A0693,0500	500 ml
A0693,1000	1 L
A0693,10006	6 x 1 L
A0693,2500	2.5 L
A0693,25004	4 x 2.5 L

Potassium chloride - Standard volumetric solutionsHS-No.: 38220000
EC-No.: 231-211-8Storage: RT
LGK: 10 - 13
Disposal: 27

WGK: 1

Potassium chloride - Standard volumetric solution (0.5 M)

C

*0.5 mol/L (0.5 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3345,0500	500 ml
A3345,1000	1 L
A3345,10006	6 x 1 L
A3345,5000CT	5 L
A3345,5000PE	5 L

Potassium chloride - Standard volumetric solution (0.1 M)

C

*0.1 mol/L (0.1 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3366,0500	500 ml
A3366,1000	1 L
A3366,10006	6 x 1 L
A3366,5000CT	5 L
A3366,5000PE	5 L

Potassium chloride - Standard volumetric solution (0.01 M)

C

*0.01 mol/L (0.01 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3373,0500	500 ml
A3373,1000	1 L
A3373,10006	6 x 1 L
A3373,5000CT	5 L
A3373,5000PE	5 L

Potassium chromate p. A.

C

*K₂CrO₄, Chromic acid potassium salt*CrK₂O₄
M = 194.20 g/mol
CAS-No.: 7789-00-6
HS-No.: 28415000
EC-No.: 232-140-5Storage: RT
LGK: 6.1 B
Disposal: 22Class / PG: 6.1/III
UN3288
WGK: 3
Danger
H315-H335-H350I-H410-H319-H340-H317
P308+P313-P302+P352-P201-P280-P305+P351+P338-P273Boiling point 1000°C
Melting point 985°C
Solubility (20°C) 637 g/L (H₂O)**Specification:**Assay (titr.) min. 99.5 %
pH (5 %; H₂O) 8.6 - 9.8
Chloride max. 0.001 %
Sulfate max. 0.01 %
Ca max. 0.005 %Fe max. 0.002 %
Na max. 0.05 %
Pb max. 0.005 %

Order-No.	Quantity
A4222,0100	100 g
A4222,0500	500 g
A4222,1000	1 kg
A4222,10006	6 x 1 kg

tri-Potassium citrate monohydrate pure Ph. Eur., BP, USP, Food grade

C

Citric acid tripotassium salt $C_6H_5K_3O_7 \cdot H_2O$

Storage: RT

WGK: 1

 $M = 324.42 \text{ g/mol}$

LGK: 10 - 13

Melting point 230°C (dec.)

CAS-No.: 6100-05-6

Solubility (25°C) 1670 g/L (H_2O)

HS-No.: 29181500

EC-No.: 212-755-5

Specification:

Assay (titr.) 99.0 - 100.5 %

Alkalinity complies

Appearance of solution complies

Behaviour against H_2SO_4 complies

Heavy metals (as Pb) max. 0.0005 %

Identity complies

Loss on drying 4.0 - 6.0 %

Volatile organic subst. ... complies

pH (5 %; H_2O) 7.5 - 9.0

Tartrate complies

Chloride max. 0.005 %

Oxalate max. 0.01 %

Sulfate max. 0.015 %

As max. 0.0001 %

Hg max. 0.0001 %

Na max. 0.3 %

Pb max. 0.0005 %

Order-No.**A2379,0500** 500 g**A2379,1000** 1 kg**A2379,10006** 6 x 1 kg**A2379,5000** 5 kg**Potassium dichromate** $K_2Cr_2O_7$, Potassium bichromate $Cr_2K_2O_7$

Storage: RT

Class / PG: 6.1(5.1)/II

 $M = 294.19 \text{ g/mol}$

LGK: 6.1 B

Boiling point > 500°C

CAS-No.: 7778-50-9

Melting point 398°C

HS-No.: 28415000

Solubility (20°C) 120 g/L (H_2O)

EC-No.: 231-906-6

Disposal: 22

WGK: 3

Danger

H410-H317-H350-H334-H314-H272-
H372-H330-H360FD-H340-H301-H312
P201-P280-P305+P351+P338-
P301+P330+P331-P308+P313-
P304+P341**Potassium dichromate p. A.**

C

Specification:

Assay (titr.) min. 99.8 %

Fe max. 0.002 %

Loss on drying max. 0.05 %

Na max. 0.02 %

Chloride max. 0.001 %

Pb max. 0.005 %

Sulfate max. 0.005 %

Ca max. 0.002 %

Order-No.**A2368,0500** 500 g**A2368,1000** 1 kg**A2368,10006** 6 x 1 kg**A2368,5000** 5 kg**Potassium dichromate pure**

C

Specification:

Assay (titr.) min. 99.5 %

Loss on drying max. 0.1 %

Chloride max. 0.05 %

Ca max. 0.005 %

Fe max. 0.005 %

Na max. 0.2 %

Order-No.**A0829,0500** 500 g**A0829,1000** 1 kg**A0829,10006** 6 x 1 kg**A0829,5000** 5 kg**A0829,9010** 10 kg**Potassium dichromate Technical grade**

C

Specification:

Assay (titr.) min. 98 %

Order-No.**A6778,5000** 5 kg**A6778,9010** 10 kg**Potassium dichromate - Standard volumetric solutions**

HS-No.: 38220000

Storage: RT

LGK: 6.1 B

Disposal: 22

Potassium dichromate - Standard volumetric solution (0.2 M) for COD-determination

C

0.2 mol/L (1.2 N Solution)

in compliance with DIN 38414 (Part 9 - 8.4)

Class / PG: 6.1/III

UN3287

WGK: 3

Danger

H360-H340-H336-H317-H314-H330-
H373-H334-H302-H335-H411-H350
P304+P341-P305+P351+P338-
P301+P330+P331-P280-P308+P313**Specification:**

Factor limits 0.998 - 1.002

Order-No.**A1587,0500** 500 ml**A1587,1000** 1 L**A1587,2500** 2.5 L**A1587,25004** 4 x 2.5 L

Potassium dichromate - Standard volumetric solution (0.1 M) for COD-determination

0.1 mol/L (0.6 N Solution)

Class / PG: 6.1/III
UN3287
WGK: 3
Danger
H360-H330-H373-H302-H336-H350-
H335-H411-H314-H334-H317-H340
P301+P330+P331-P305+P351+P338-
P308+P313-P304+P341-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A5162,0500	500 ml
A5162,1000	1 L
A5162,10006	6 x 1 L
A5162,5000	5 L

Potassium dichromate - Standard volumetric solution (0.033 M) for COD-determination

0.033 mol/L (0.2 N Solution)

WGK: 3
Danger
H360-H412-H340-H350-H332
P304+P341-P308+P313-
P301+P330+P331-P305+P351+P338-
P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3319,0500	500 ml
A3319,1000	1 L
A3319,5000	5 L

Potassium dichromate - Standard volumetric solution (0.02 M) for COD-determination

0.02 mol/L (0.12 N Solution)
in compliance with DIN 38409 (H41 and H43)

WGK: 3
Danger
H360-H350-H412-H340-H332
P304+P341-P305+P351+P338-
P308+P313-P280-P301+P330+P331



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3343,0500	500 ml
A3343,1000	1 L
A3343,5000	5 L

Potassium dichromate - Standard volumetric solution (0.005 M) for COD-determination

0.005 mol/L (0.03 N Solution)
in compliance with DIN 38409 (H44)

WGK: 3
P301+P330+P331-P308+P313-
P304+P341-P305+P351+P338-P280

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3363,0500	500 ml
A3363,1000	1 L
A3363,5000	5 L

Potassium dihydrogen phosphate

KH_2PO_4 , prim.-Potassium phosphate

H_2KPO_4P
 $M = 136.09$ g/mol
CAS-No.: 7778-77-0
HS-No.: 28352400
EC-No.: 231-913-4

Storage: RT
LGK: 10 - 13

WGK: 1

Melting point approx. 253°C
Solubility (20°C) 222 g/L (H_2O)

Potassium dihydrogen phosphate Molecular biology grade

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
pH (5 %; H_2O) 4.0 - 4.5 (20°C)
Loss on drying max. 0.2 %

Chloride max. 0.0005 %
Sulfate max. 0.003 %
Cu max. 0.0005 %
Fe max. 0.001 %
Na max. 0.02 %

Na max. 0.02 %
Pb max. 0.001 %

Order-No.	Quantity
A2946,0250	250 g
A2946,0500	500 g
A2946,1000	1 kg

Potassium dihydrogen phosphate Cell culture grade

Specification:

Pyrogen test complies
Assay (titr.) min. 99.5 %
Loss on drying max. 0.2 %
Chloride max. 0.0005 %

Sulfate max. 0.003 %
Cu max. 0.0005 %
Fe max. 0.001 %
Na max. 0.02 %

Pb max. 0.001 %

Order-No.	Quantity
A3095,0250	250 g
A3095,0500	500 g
A3095,1000	1 kg

Potassium dihydrogen phosphate *BioChemica*

B

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H₂O; 20°C) 4.0 - 4.5
Loss on drying max. 0.2 %

Chloride max. 0.0005 %
Sulfate max. 0.003 %
A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.05

Order-No.
A1043,0500 500 g
A1043,1000 1 kg
A1043,5000 5 kg

Potassium dihydrogen phosphate p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Loss on drying max. 0.2 %
Chloride max. 0.0005 %
Fluoride max. 0.001 %
Sulfate max. 0.003 %
Cu max. 0.00025 %
Fe max. 0.001 %

Na max. 0.02 %
Pb max. 0.001 %

Order-No.
A3620,0500 500 g
A3620,1000 1 kg
A3620,10006 6 x 1 kg
A3620,5000 5 kg
A3620,9010 10 kg
A3620,9025 25 kg

Potassium dihydrogen phosphate pure Ph. Eur., NF

C

Specification:

Assay (titr.) 98.0 - 100.5 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies
Insoluble matter max. 0.2 %
Loss on drying max. 1.0 %
Organic vol. impurities complies

Red. substances complies
pH (5 %; H₂O) 4.2 - 4.5
Chloride max. 0.02 %
Fluoride max. 0.001 %
Sulfate max. 0.03 %
As max. 0.0002 %
Fe max. 0.001 %
Pb max. 0.0005 %

Order-No.
A1364,0500 500 g
A1364,1000 1 kg
A1364,10006 6 x 1 kg
A1364,5000 5 kg
A1364,9010 10 kg
A1364,9025 25 kg

Potassium dihydrogen phosphate - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: nwg

Potassium dihydrogen phosphate - Solution (1 M)

C

Buffer stock solution

Composition:

KH₂PO₄ (A1043) 136.09 g/L

Order-No.
A3475,1000 1 L
A3475,5000 5 L

Potassium dihydrogen phosphate - Solution (0.1 M) Buffer grade

B

Buffer stock solution

Composition:

KH₂PO₄ (A1043) 13.61 g/L

Order-No.
A7416,1000 1 L
A7416,5000 5 L

Potassium dihydrogen phosphate - Solution (1/15 M)

C

Buffer stock solution

Composition:

KH₂PO₄ (A1043) 9.073 g/L

Order-No.
A0901,1000 1 L
A0901,10006 6 x 1 L
A0901,5000 5 L

Potassium disulfite

Potassium metabisulfite, Potassium pyrosulfite

K₂S₂O₅
M = 222.53 g/mol
CAS-No.: 16731-55-8
HS-No.: 28322000
EC-No.: 240-795-3

Storage: RT
LGK: 10-13
Disposal: 14

WGK: 1
Danger
EUH031-H318-H335
P313-P305+P351+P338



Melting point 190°C (dec.)
Solubility (20°C) 450 g/L (H₂O)

Potassium disulfite p.A.

C

Specification:

Assay (titr.) min. 97 %
In H₂O insol. matter max. 0.005 %
Chloride max. 0.005 %

As max. 0.0001 %
Cu max. 0.0001 %
Fe max. 0.0005 %
Pb max. 0.0001 %
Zn max. 0.0001 %

Order-No.
A8028,0500 500 g
A8028,1000 1 kg

Potassium disulfite pure Ph. Eur., Food grade

C

Specification:

Assay (titr.) 97.2 - 101.0 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 pH (10 %; H₂O) 3.8 - 4.8

pH (5 %; H₂O) 3.0 - 4.5
 Chloride max. 0.05 %
 Thiosulfate max. 0.06 %
 As max. 0.0001 %
 Cu max. 0.0001 %

Fe max. 0.0005 %
 Hg max. 0.00001 %
 Pb max. 0.0001 %
 Se max. 0.0001 %
 Zn max. 0.0001 %

Order-No.	Quantity
A6406,0500	500 g
A6406,1000	1 kg
A6406,10006	6 x 1 kg
A6406,5000	5 kg

Potassium ferricyanide

*Potassium hexacyanoferrate(III),
 Potassium ferricyanide*

$C_6FeK_3N_6$
 $M = 329.26$ g/mol
 CAS-No.: 13746-66-2
 HS-No.: 28372000
 EC-No.: 237-323-3

Storage: RT
 LGK: 10 - 13
 Disposal: 28

WGK: 2

Solubility (20°C) 464 g/L (H₂O)
 Thermal dec. 70°C

Potassium ferricyanide BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Insoluble matter complies
 pH (1 M; H₂O; 25°C) 6.0 - 10.0
 Chloride max. 0.05 %

Sulfate max. 0.005 %
 Pb max. 0.002 %

Order-No.	Quantity
A3883,0250	250 g
A3883,0500	500 g
A3883,1000	1 kg

Literature: (1) Hatefi, Y. (1978) *Methods Enzymol.* **53**, 11-14
 (2) Lucibello, F.C. & Müller, R. (1989) *Methods Mol. Cell. Biol.* **1**, 9-18
 (3) Robinson, G.W. *et al.* (1995) *Development* **121**, 2079-2090

Preparation and properties of NADH : Ubiquinone oxidoreductase (complex I).
 Sensitive microscale assay for the analysis of promoter activity in eukaryotic cells.
 Mammary epithelial cells undergo secretory differentiation in cycling virgins but require pregnancy for the establishment of terminal differentiation.

Potassium ferricyanide p. A.

C

Specification:

Assay (titr.) min. 99 %
 Chloride max. 0.05 %
 Sulfate max. 0.005 %
 Pb max. 0.002 %

Order-No.	Quantity
A2179,0250	250 g
A2179,0500	500 g
A2179,1000	1 kg
A2179,10006	6 x 1 kg
A2179,5000	5 kg

Potassium ferricyanide pure

C

Specification:

Assay (titr.) min. 99 %
 Insoluble matter complies
 Chloride max. 0.1 %
 Sulfate max. 0.02 %
 Pb max. 0.005 %

Order-No.	Quantity
A0563,0500	500 g
A0563,1000	1 kg
A0563,10006	6 x 1 kg
A0563,5000	5 kg
A0563,9010	10 kg

Potassium ferricyanide see Potassium ferricyanide Page 644

Potassium ferrocyanide trihydrate

*Potassium hexacyanoferrate(II)
 trihydrate, Potassium ferrocyanide*

$C_6FeK_4N_6 \cdot 3H_2O$
 $M = 422.39$ g/mol
 CAS-No.: 14459-95-1
 HS-No.: 28372000
 EC-No.: 237-722-2

Storage: RT
 LGK: 10 - 13
 Disposal: 28

WGK: 2
 H412
 P273-P220g

Solubility (20°C) 289 g/L (H₂O)
 Thermal dec. 70°C

Potassium ferrocyanide trihydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Insoluble matter complies
 pH (0.5 M; H₂O) 8.0 - 10.0

Chloride max. 0.01 %
 Sulfate max. 0.005 %
 Na max. 0.01 %

Pb max. 0.002 %

Order-No.	Quantity
A3882,0500	500 g
A3882,1000	1 kg

Potassium ferrocyanide trihydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 Chloride max. 0.01 %
 Sulfate max. 0.005 %
 Na max. 0.01 %
 Pb max. 0.002 %

Order-No.	Quantity
A1867,0100	100 g
A1867,0500	500 g
A1867,1000	1 kg
A1867,10006	6 x 1 kg
A1867,5000	5 kg

Potassium ferrocyanide trihydrate pure

C

Specification:

Assay (titr.)	min. 99 %
Insoluble matter	complies
Chloride	max. 0.01 %
Sulfate	max. 0.01 %
Na	max. 0.05 %
Pb	max. 0.005 %

Order-No.	Quantity
A2383,0500	500 g
A2383,1000	1 kg
A2383,10006	6 x 1 kg
A2383,5000	5 kg
A2383,9010	10 kg
A2383,9025	25 kg

Potassium ferrocyanide see Potassium ferrocyanide trihydrate Page 644

Potassium fluoride

Melting point	860°C
Solubility (20°C)	923 g/L (H ₂ O)

KF	
M = 58.10 g/mol	
CAS-No.: 7789-23-3	
HS-No.: 28261990	
EC-No.: 232-151-5	

Storage: RT	
LGK: 6.1 B	
Disposal: 23	

Class / PG: 6.1/III	
UN1812	
WGK: 1	
Danger	
H301-H311-H331	
P302+P352-P280	



Potassium fluoride p. A.

C

Specification:

Assay	min. 99 %
Chloride	max. 0.005 %
Sulfate	max. 0.1 %
Ca	max. 0.005 %
Cd	max. 0.005 %
Co	max. 0.005 %

Cu	max. 0.005 %
Fe	max. 0.005 %
Na	max. 0.5 %
Ni	max. 0.005 %
Pb	max. 0.005 %
Zn	max. 0.005 %

Order-No.	Quantity
A3731,0100	100 g
A3731,0250	250 g
A3731,0500	500 g
A3731,1000	1 kg
A3731,10006	6 x 1 kg

Potassium fluoride pure

C

Specification:

Assay (titr.)	min. 98.5 %
H ₂ O-insoluble matter	max. 0.1 %
Heavy metals (as Pb)	max. 0.005 %
Chloride	max. 0.01 %
Sulfate	max. 0.1 %
Fe	max. 0.005 %

Order-No.	Quantity
A0986,0250	250 g
A0986,0500	500 g
A0986,1000	1 kg
A0986,10006	6 x 1 kg
A0986,5000	5 kg

Potassium fluoride - Solution 33 % pure

C

HS-No.: 28261990	
EC-No.: 232-151-5	

Storage: RT	
LGK: 6.1 B	
Disposal: 23	

Class / PG: 6.1/III	
UN3422	
WGK: 1	
Danger	
H331-H302-H311	
P280-P302+P352	



Specification:

Assay	min. 33 %
Chloride	max. 0.005 %
Sulfate	max. 0.1 %
Ca	max. 0.005 %
Fe	max. 0.005 %
Na	max. 0.5 %

Pb	max. 0.005 %

Order-No.	Quantity
A4630,1000	1 L
A4630,10006	6 x 1 L
A4630,5000	5 L
A4630,9010	10 L
A4630,9025	25 L

Potassium L-glutamate monohydrate see L-Glutamic acid monopotassium salt monohydrate Page 381

Potassium gluconate see Gluconic acid potassium salt Page 376

Potassium hexacyanoferrate(II) trihydrate see Potassium ferrocyanide trihydrate Page 644

Potassium hexacyanoferrate(III) see Potassium ferricyanide Page 644

Potassium hydrogen carbonate

KHCO₃, Potassium bicarbonate

CHKO ₃	
M = 100.12 g/mol	
CAS-No.: 298-14-6	
HS-No.: 28364000	
EC-No.: 206-059-0	

Storage: RT	
LGK: 10 - 13	
Disposal: 14	

WGK: 1

Melting point	292°C (dec.)
Solubility (20°C)	224 g/L (H ₂ O)

Potassium hydrogen carbonate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %
pH (5 %; H ₂ O)	8.0 - 9.0 (20°C)
Loss on drying	max. 0.1 %
Carbonate	max. 1.0 %
Chloride	max. 0.001 %

Phosphate	max. 0.001 %
Sulfate	max. 0.001 %
As	max. 0.0001 %
Ca	max. 0.0005 %
Fe	max. 0.0005 %

Na	max. 0.02 %
Pb	max. 0.0001 %

Order-No.	Quantity
A2375,0500	500 g
A2375,1000	1 kg
A2375,10006	6 x 1 kg
A2375,5000	5 kg

Potassium hydrogen carbonate pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.5 - 101.0 %	Ammonium	max. 0.002 %	Na	max. 0.5 %
Appearance of solution	complies	Carbonate (as K_2CO_3)	max. 2.5 %		
Heavy metals (as Pb)	max. 0.001 %	Chloride	max. 0.015 %		
Identity	complies	Sulfate	max. 0.015 %		
Loss on drying	max. 0.3 %	Ca	max. 0.01 %		
pH (5 %; H_2O)	≤8.6	Fe	max. 0.002 %		

Order-No.	Quantity
A0564,1000	1 kg
A0564,10006	6 x 1 kg
A0564,5000	5 kg
A0564,9010	10 kg
A0564,9025	25 kg

di-Potassium hydrogen phosphate anhydrous

Dipotassium phosphate, K_2HPO_4	HK_2O_4P	Storage: RT	WGK: 1
	$M = 174.18$ g/mol	LGK: 10 - 13	
Solubility (20°C)	CAS-No.: 7758-11-4	Disposal: 14	
Thermal dec.	HS-No.: 28352400		
	EC-No.: 231-834-5		

di-Potassium hydrogen phosphate anhydrous Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable	Chloride	max. 0.003 %	Fe	max. 0.0005 %
Assay (titr.)	min. 99 %	Fluoride	max. 0.001 %	Pb	max. 0.0005 %
pH (5 %; H_2O)	8.7 - 9.4 (20°C)	Sulfate	max. 0.005 %	Zn	max. 0.0025 %
Loss on drying	max. 0.5 %	As	max. 0.0001 %		

Order-No.	Quantity
A2945,0250	250 g
A2945,0500	500 g
A2945,1000	1 kg

di-Potassium hydrogen phosphate anhydrous BioChemica

B

Specification:

Assay (titr.)	min. 99 %	Chloride	max. 0.003 %	A (1 cm/0.1 M in H_2O)	
Heavy metals (as Pb)	max. 0.001 %	Fluoride	max. 0.001 %	260 nm	max. 0.05
Insoluble matter	complies	Sulfate	max. 0.005 %	280 nm	max. 0.05
pH (5 %; H_2O ; 20°C)	8.7 - 9.4				
Loss on drying	max. 0.5 %				

Order-No.	Quantity
A1042,0500	500 g
A1042,1000	1 kg
A1042,5000	5 kg

di-Potassium hydrogen phosphate anhydrous p. A.

C

Specification:

Assay (titr.)	min. 99 %	Fe	max. 0.0005 %
pH (5 %; H_2O ; 20°C)	8.7 - 9.4	Pb	max. 0.0005 %
Loss on drying	max. 0.5 %	Zn	max. 0.0025 %
Chloride	max. 0.003 %		
Fluoride	max. 0.001 %		
Sulfate	max. 0.005 %		
As	max. 0.0001 %		

Order-No.	Quantity
A3589,0500	500 g
A3589,1000	1 kg
A3589,10006	6 x 1 kg
A3589,5000	5 kg
A3589,9010	10 kg
A3589,9025	25 kg

di-Potassium hydrogen phosphate anhydrous pure Ph. Eur., USP

C

Specification:

Assay (titr.)	98.0 - 100.5 %	pH (5 %; H_2O)	8.5 - 9.6	As	max. 0.0002 %
Appearance of solution	complies	KH_2PO_4	max. 2.5 %	Fe	max. 0.001 %
Heavy metals (as Pb)	max. 0.001 %	KH_2PO_4 , K_3PO_4	complies	Na (Ph.Eur.)	max. 0.1 %
Identity	complies	Carbonate	complies	Na (USP)	complies
Insoluble subst.	max. 0.2 %	Chloride	max. 0.02 %		
Loss on drying	max. 1.0 %	Fluoride	max. 0.001 %		
Red. substances	complies	Sulfate	max. 0.1 %		

Order-No.	Quantity
A1363,0500	500 g
A1363,1000	1 kg
A1363,10006	6 x 1 kg
A1363,5000	5 kg
A1363,9010	10 kg
A1363,9025	25 kg

di-Potassium hydrogen phosphate anhydrous Technical grade

C

Specification:

Assay	min. 98 %	Order-No.	Quantity
Loss on drying	max. 1 %	A4313,5000	5 kg
Chloride	max. 0.5 %	A4313,9010	10 kg
Sulfate	max. 0.5 %	A4313,9025	25 kg

di-Potassium hydrogen phosphate trihydrate p. A.

C

Dipotassium hydrogen phosphate, sec.-	$HK_2PO_4 \cdot 3H_2O$	Storage: RT
Potassium phosphate, Potassium phosphate dibasic	$M = 228.23$ g/mol	LGK: 10 - 13
	CAS-No.: 16788-57-1	Disposal: 14
	HS-No.: 28352400	
	EC-No.: 231-834-5	

Specification:

Assay (titr.)	min. 99 %	As	max. 0.00005 %
Heavy metals (as Pb)	max. 0.001 %	Fe	max. 0.0005 %
pH (5 %; H_2O)	9.0 - 9.4 (20°C)	Na	max. 0.1 %
Chloride	max. 0.001 %		
Sulfate	max. 0.005 %		

Order-No.	Quantity
A4001,0250	250 g
A4001,1000	1 kg
A4001,10006	6 x 1 kg
A4001,5000	5 kg

di-Potassium hydrogen phosphate - Solutions

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: 1

di-Potassium hydrogen phosphate - Solution (1 M)

B

Buffer stock solution

Composition:

K₂HPO₄ (A1042) 174.18 g/L

Order-No.
A3870,1000
A3870,5000

Quantity
1 L
5 L

di-Potassium hydrogen phosphate - Solution (1/15 M)

B

Buffer stock solution

Composition:

K₂HPO₄ (A1042) 11.61 g/L

Order-No.
A3455,1000
A3455,5000

Quantity
1 L
5 L

Potassium hydrogen phthalate p. A.

C

Phthalic acid monopotassium salt,
Potassium biphthalate

C₈H₅KO₄
M = 204.22 g/mol
CAS-No.: 877-24-7
HS-No.: 29173995
EC-No.: 212-889-4

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting range 295 - 300°C

Specification:

Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.005 %
Insoluble matter max. 0.005 %
Loss on drying max. 0.2 %
Chloride max. 0.002 %
Fe max. 0.005 %

Order-No.
A1644,0100
A1644,0250
A1644,0500
A1644,1000
A1644,10006

Quantity
100 g
250 g
500 g
1 kg
6 x 1 kg

Potassium hydrogen phthalate - Solution for COD-determination (170 mg/L)

C

DIN 38409 (H41)

HS-No.: 38220000

Storage: RT
LGK: 10-13

WGK: nwg

Composition:

Potassium hydrogen phthalate (A1644)
..... 170 mg/L

Specification:

Application test complies

Order-No.
A5011,0500
A5011,1000
A5011,2500

Quantity
500 ml
1 L
2.5 L

Potassium hydrogen tartrate pure

C

Melting point ~250°C (dec.)
Solubility (20°C) 5.7 g/L (H₂O)

C₄H₅KO₆
M = 188.18 g/mol
CAS-No.: 868-14-4
HS-No.: 29181300
EC-No.: 212-769-1

Storage: RT
LGK: 10-13
Disposal: 3

WGK: 1

Specification:

Assay (titr.) min. 98 %
Appearance white powder
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on drying max. 1.0 %

pH (1 %; H₂O) 3.0 - 3.8
Oxalate max. 0.01 %
As max. 0.0003 %
Hg max. 0.0001 %
Pb max. 0.0005 %

Order-No.
A4839,0500
A4839,1000
A4839,10006
A4839,5000

Quantity
500 g
1 kg
6 x 1 kg
5 kg

Potassium hydroxide - Pellets

KOH	HKO	Storage: RT	Class / PG: 8/II
	<i>M</i> = 56.11 g/mol	LGK: 8 B	UN1813
Boiling point 1320°C	CAS-No.: 1310-58-3	Disposal: 13	WGK: 1
Melting point 360°C	HS-No.: 28152000		hygroscopic
Solubility (20°C) 1130 g/L (H ₂ O)	EC-No.: 215-181-3		Danger
			H314-H302-H290
			P280-P301+P330+P331-
			P305+P351+P338



Potassium hydroxide - Pellets BioChemica

Specification:			Order-No.	Quantity
Assay (titr.) min. 85 %	Phosphate max. 0.0001 %	A (1 cm/1 M in H ₂ O)	A3871,0500	500 g
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.0005 %	260 nm max. 0.02	A3871,1000	1 kg
Insoluble matter complies		280 nm max. 0.01	A3871,10006	6 x 1 kg
Carbonate max. 1.0 %			A3871,5000	5 kg
Chloride max. 0.0005 %				

Literature: (1) Mertensen, T.M. & Levine, R.L. (1983) *Methods Enzymol.* **99**, 402-405
(2) Besant, P.G. & Attwood, P.V. (1998) *Anal. Biochem.* **265**, 187-190

Alkaline hydrolysis and amino acid analysis of phosphotyrosine in proteins.
Problems in posphoamino acid analysis with the alkaline hydrolysis.

Potassium hydroxide - Pellets p. A.

Specification:		Order-No.	Quantity
Assay (titr.) min. 85 %	Fe max. 0.0005 %	A1575,0500	500 g
Carbonate max. 1.0 %	Na max. 0.5 %	A1575,1000	1 kg
Chloride max. 0.0005 %	Ni max. 0.0005 %	A1575,10006	6 x 1 kg
Phosphate max. 0.0001 %	Pb max. 0.0005 %	A1575,5000	5 kg
Sulfate max. 0.0005 %		A1575,9010	10 kg
Al max. 0.001 %		A1575,9025	25 kg
Ca max. 0.001 %			

Potassium hydroxide - Pellets pure Ph. Eur., NF

Specification:		Order-No.	Quantity
Assay (titr.) 85.0 - 100.5 %	Chloride max. 0.005 %	A0566,1000	1 kg
Appearance of solution complies	Phosphate max. 0.002 %	A0566,10006	6 x 1 kg
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.005 %	A0566,5000	5 kg
Identity complies	Fe max. 0.001 %	A0566,9010	10 kg
Insoluble subst. complies	Na max. 1.0 %	A0566,9025	25 kg
Carbonate (as K ₂ CO ₃) max. 2.0 %			

Potassium hydroxide - Pellets Technical grade

Specification:		Order-No.	Quantity
Assay (titr.) approx. 85 %		A0992,1000	1 kg
		A0992,10006	6 x 1 kg
		A0992,5000	5 kg
		A0992,9010	10 kg
		A0992,9025	25 kg

Potassium hydroxide - Solutions 25 % - 50 %

KOH - Solution	CAS-No.: 1310-58-3	Storage: RT	Class / PG: 8/II
	HS-No.: 28152000	LGK: 8 B	UN1814
	EC-No.: 215-181-3	Disposal: 13	WGK: 1
			Danger
			H302-H314
			P280-P305+P351+P338-P313



Potassium hydroxide - Solution 50 % pure

Specification:		Order-No.	Quantity
Assay (titr.) approx. 50 %		A0652,2500	2.5 L
Density (d 20°C/4°C) approx. 1.52		A0652,25004	4 x 2.5 L
		A0652,5000	5 L
		A0652,9010	10 L

Potassium hydroxide - Solution 45 % pure

Specification:		Order-No.	Quantity
Assay (titr.) approx. 45 %		A3310,2500	2.5 L
Density (d 20°C/4°C) approx. 1.48		A3310,5000	5 L
		A3310,9010	10 L

Potassium hydroxide - Solution 40 % p. A.

C

Specification:

Assay (titr.)	39.0 - 41.0 %	Sulfate	max. 0.005 %	Fe	max. 0.0005 %
Density	1.4 g/cm ³	Total nitrogen (N)	max. 0.0005 %	Mg	max. 0.0005 %
Heavy metals (as Pb)	max. 0.0005 %	Al	max. 0.002 %	Ni	max. 0.0005 %
Carbonate	max. 1 %	As	max. 0.0001 %	Pb	max. 0.0005 %
Chloride	max. 0.001 %	Ca	max. 0.0005 %	Zn	max. 0.0005 %
Phosphate	max. 0.0005 %	Cu	max. 0.0005 %		

Order-No.	Quantity
A6933,1000	1 L
A6933,10006	6 x 1 L
A6933,2500	2.5 L

Potassium hydroxide - Solution 40 % pure

C

Specification:

Assay (titr.)	approx. 40 %
Density (d 20°C/4°C)	approx. 1.40

Order-No.	Quantity
A3325,2500	2.5 L
A3325,5000	5 L
A3325,9010	10 L

Potassium hydroxide - Solution 35 % pure

C

Specification:

Assay (titr.)	approx. 35 %
Density (d 20°C/4°C)	approx. 1.34

Order-No.	Quantity
A3340,2500	2.5 L
A3340,5000	5 L
A3340,9010	10 L

Potassium hydroxide - Solution 30 % pure

C

Specification:

Assay (titr.)	approx. 30 %
Density (d 20°C/4°C)	approx. 1.29

Order-No.	Quantity
A3361,2500	2.5 L
A3361,25004	4 x 2.5 L
A3361,5000	5 L
A3361,9010	10 L

Potassium hydroxide - Solution 25 % pure

C

Specification:

Assay (titr.)	approx. 25 %
Heavy metals (as Pb)	max. 0.005 %
Carbonate	max. 1 %

Order-No.	Quantity
A3278,5000	5 L
A3278,9010	10 L

Potassium hydroxide - Solutions 10 % - 20 %

KOH - Solution

CAS-No.: 1310-58-3
HS-No.: 28152000
EC-No.: 215-181-3

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/II
UN1814
WGK: 1
Danger
H314-H302
P305+P351+P338-P280-P313

**Potassium hydroxide - Solution 20 % p.A.**

C

Specification:

Assay (titr.)	19.0 - 21.0 %	Sulfate	max. 0.005 %	Mg	max. 0.0005 %
Density (d 20°C/4°C)	approx. 1.19	Al	max. 0.002 %	Ni	max. 0.0005 %
Heavy metals (as Pb)	max. 0.0005 %	As	max. 0.0001 %	Pb	max. 0.0005 %
Carbonate	max. 1 %	Ca	max. 0.0005 %	Zn	max. 0.0005 %
Chloride	max. 0.001 %	Cu	max. 0.0005 %		
Phosphate	max. 0.0005 %	Fe	max. 0.0005 %		

Order-No.	Quantity
A8044,1000	1 L
A8044,2500	2.5 L

Potassium hydroxide - Solution 20 % pure

C

Specification:

Assay (titr.)	approx. 20 %
Density (d 20°C/4°C)	approx. 1.19

Order-No.	Quantity
A3316,2500	2.5 L
A3316,25004	4 x 2.5 L
A3316,5000	5 L
A3316,9010	10 L

Potassium hydroxide - Solution 10 % pure

C

Specification:

Assay (titr.)	approx. 10 %
Density (d 20°C/4°C)	approx. 1.09

Order-No.	Quantity
A3337,2500	2.5 L
A3337,25004	4 x 2.5 L
A3337,5000	5 L
A3337,9010	10 L

Potassium hydroxide solution in alcohols see Potassium hydroxide - Standard volumetric solution (in alcohols) Page 651

Potassium hydroxide - Standard volumetric solutions (aqueous solutions)

KOH - Standard volumetric solution

EC-No.: 215-181-3

Potassium hydroxide - Standard volumetric solution (6 M)

6 mol/L (6 N Solution)

HS-No.: 28152000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/II
UN1814
WGK: 1
Danger
H302-H314
P305+P351+P338-P313-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A7518,1000	1 L
A7518,10006	6 x 1 L
A7518,5000CT	5 L
A7518,5000PE	5 L
A7518,9010CT	10 L
A7518,9010PE	10 L

Potassium hydroxide - Standard volumetric solution (3 M)

3 mol/L (3 N Solution)

HS-No.: 28152000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/II
UN1814
WGK: 1
Danger
H302-H314
P305+P351+P338-P313-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3349,1000	1 L
A3349,10006	6 x 1 L
A3349,5000CT	5 L
A3349,5000PE	5 L
A3349,9010CT	10 L
A3349,9010PE	10 L

Potassium hydroxide - Standard volumetric solution (1 M)

1 mol/L (1 N Solution)

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN1814
WGK: 1
Danger
H314
P313-P305+P351+P338-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2180,1000	1 L
A2180,10006	6 x 1 L
A2180,5000CT	5 L
A2180,5000PE	5 L

Potassium hydroxide - Standard volumetric solution (0.5 M)

0.5 mol/L (0.5 N Solution)

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN1814
WGK: 1
Danger
H314
P305+P351+P338-P313-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2646,1000	1 L
A2646,10006	6 x 1 L
A2646,5000CT	5 L
A2646,5000PE	5 L
A2646,9010CT	10 L
A2646,9010PE	10 L

Potassium hydroxide - Standard volumetric solution (0.25 M)

C

0.25 mol/L (0.25 N Solution)

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13

WGK: nwg
Danger
H314-H302
P280-P313-P305+P351+P338



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A6277,1000	1 L
A6277,5000CT	5 L
A6277,5000PE	5 L
A6277,9010CT	10 L
A6277,9010PE	10 L

Potassium hydroxide - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

Storage: RT
Disposal: 13

Warning
H319-H315
P305+P351+P338



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2642,1000	1 L
A2642,10006	6 x 1 L
A2642,5000CT	5 L
A2642,5000PE	5 L
A2642,9010CT	10 L
A2642,9010PE	10 L

Potassium hydroxide - Standard volumetric solution (in alcohols)

HS-No.: 38220000

Potassium hydroxide - Standard volumetric solution (1 M) in non-denatured ethanol (99.5 %)

C

1 mol/L (1 N Solution) in Ethanol

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3(8)/II
UN2924
WGK: 1
Danger
H225-H314
P305+P351+P338-P210-P302+P352-
P309+P311-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3551,1000	1 L
A3551,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.5 M) in non-denatured ethanol (99.5 %)

C

0.5 mol/L (0.5 N Solution) in Ethanol

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3(8)/II
UN2924
WGK: 1
Danger
H314-H225
P280-P305+P351+P338-P210-
P302+P352-P309+P311



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3230,1000	1 L
A3230,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.1 M) in non-denatured ethanol (99.5 %)

C

0.1 mol/L (0.1 N Solution) in Ethanol

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1993
WGK: 1
Danger
H225-H319-H315
P210-P233-P305+P351+P338



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3571,1000	1 L
A3571,10006	6 x 1 L
A3571,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (1 M) in denatured ethanol (99 %)

C

*1 mol/L (1 N Solution) in Ethanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3(8)/II
UN2924
WGK: 1
Danger
H314-H225
P309+P311-P280-P305+P351+P338-
P302+P352-P210**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3563,1000	1 L
A3563,10006	6 x 1 L
A3563,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.5 M) in denatured ethanol (99 %)

C

*0.5 mol/L (0.5 N Solution) in Ethanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3(8)/II
UN2924
WGK: 1
Danger
H314-H225
P309+P311-P302+P352-
P305+P351+P338-P210-P280**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3556,1000	1 L
A3556,10006	6 x 1 L
A3556,2500	2.5 L
A3556,25004	4 x 2.5 L

Potassium hydroxide - Standard volumetric solution (0.5 M) in denatured ethanol (80 %)

C

Potassium hydroxide solution in alcohols
*0.5 mol/L (0.5 N Solution) in Ethanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3(8)/II
UN2924
WGK: 1
Danger
H225-H314
P305+P351+P338-P302+P352-P210-
P309+P311-P280**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0388,1000	1 L
A0388,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.1 M) in denatured ethanol (99 %)

C

*0.1 mol/L (0.1 N Solution) in Ethanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3/II
UN1993
WGK: 1
Danger
H315-H319-H225
P210-P233-P305+P351+P338**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3593,1000	1 L
A3593,10006	6 x 1 L
A3593,2500	2.5 L
A3593,25004	4 x 2.5 L

Potassium hydroxide - Standard volumetric solution (0.05 M) in denatured ethanol (99 %)

C

*0.05 mol/L (0.05 N Solution) in Ethanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3/II
UN1993
WGK: 1
Danger
H225
P233-P305+P351+P338-P210**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3612,1000	1 L
A3612,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (1 M) in methanol

C

*1 mol/L (1 N Solution) in Methanol*Storage: RT
LGK: 3 A
Disposal: 9Class / PG: 3(6.1)(8)/II
UN3286
WGK: 1
Danger
H314-H331-H225-H301-H311-H370
P309+P311-P305+P351+P338-
P302+P352-P280-P210**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3983,0500	500 ml
A3983,1000	1 L
A3983,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.5 M) in methanol

C

*0.5 mol/L (0.5 N Solution) in Methanol*Storage: RT
LGK: 3 A
Disposal: 9Class / PG: 3(6.1,8)/II
UN3286
WGK: 1
Danger
H331-H301-H311-H225-H370-H314
P210-P302+P352-P280-P309+P311-
P305+P351+P338**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3989,0500	500 ml
A3989,1000	1 L
A3989,10006	6 x 1 L
A3989,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.2 M) in methanol

C

*0.2 mol/L (0.2 N Solution) in Methanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3(6.1)/II
UN1992
WGK: 1
Danger
H311-H315-H331-H370-H319-H301-
H225
P302+P352-P305+P351+P338-P280-
P309+P311-P210**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3347,1000	1 L
A3347,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.1 M) in methanol

C

*0.1 mol/L (0.1 N Solution) in Methanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3(6.1)/II
UN1992
WGK: 1
Danger
H370-H311-H301-H331-H315-H225-
H319
P302+P352-P210-P309+P311-
P305+P351+P338-P280**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3359,1000	1 L
A3359,10006	6 x 1 L
A3359,2500	2.5 L
A3359,25004	4 x 2.5 L

Potassium hydroxide - Standard volumetric solution (0.1 M) in 2-propanol

C

*0.1 mol/L (0.1 N Solution) in 2-Propanol*Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3/II
UN1993
WGK: 1
Danger
H319-H336-H225
P233-P210-P305+P351+P338**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A5424,1000	1 L
A5424,10006	6 x 1 L
A5424,2500	2.5 L

Potassium hydroxide - Standard volumetric solution (0.01 M) in 2-propanol

0.01 mol/L (0.01 N Solution) in 2-Propanol

Storage: RT
LGK: 3 A
Disposal: 1Class / PG: 3/II
UN1993
WGK: 1
Danger
H336-H225-H319
P210-P233-P305+P351+P338

C

Specification:

Factor limits 0.995 - 1.005

Order-No.	Quantity
A3367,1000	1 L
A3367,10006	6 x 1 L
A3367,2500	2.5 L
A3367,25004	4 x 2.5 L

Potassium iodate

Melting point 560°C

IKO₃
M = 214.00 g/mol
CAS-No.: 7758-05-6
HS-No.: 28299080
EC-No.: 231-831-9Storage: RT
LGK: 5.1 B
Disposal: 22Class / PG: 5.1/II
UN1479
WGK: 1
Danger
H272-H318
P305+P351+P338**Potassium iodate p. A.****Specification:**Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.0005 %
Loss on drying max. 0.1 %
pH (5 %; H₂O) 5.0 - 8.0Chloride, Bromide max. 0.01 %
Sulfate max. 0.005 %
Cu max. 0.0005 %
Fe max. 0.001 %

Zn max. 0.002 %

Order-No.	Quantity
A2596,0100	100 g
A2596,0250	250 g
A2596,0500	500 g

C

Potassium iodate pure FCC**Specification:**Assay (titr.) 99.0 - 101.0 %
Heavy metals (as Pb) max. 0.004 %
pH (5 %; H₂O) 5.0 - 8.0
Loss on drying max. 0.5 %
Chlorate max. 0.01 %

Iodide max. 0.002 %

Order-No.	Quantity
A3896,0100	100 g
A3896,0500	500 g
A3896,1000	1 kg
A3896,10006	6 x 1 kg

C

Potassium iodate - Standard volumetric solution (1/60 M)

C

Potassium iodate - Standard volumetric
solution (0.1 N)
1/60 M (0.1 N Solution)

HS-No.: 38220000

Storage: RT
protected from light
LGK: 10-13
Disposal: 22

WGK: 1

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1436,1000	1 L
A1436,10006	6 x 1 L
A1436,5000CT	5 L
A1436,5000PE	5 L

Potassium iodate - Standard volumetric solution (0.1 N) see Potassium iodate - Standard volumetric solution (1/60 M) Page 654

Potassium iodide

KI

IK
M = 166.01 g/mol
CAS-No.: 7681-11-0
HS-No.: 28276000
EC-No.: 231-659-4Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Boiling point 1330°C
Melting point 686°C
Solubility (20°C) 1430 g/L (H₂O)**Potassium iodide BioChemica**

B

Specification:Assay (titr.) min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H₂O) 6.0 - 9.0 (20°C)Loss on drying max. 1 %
Bromide max. 0.001 %
Chloride max. 0.001 %
Iodate max. 0.0002 %

Sulfate max. 0.001 %

Order-No.	Quantity
A3872,0100	100 g
A3872,0250	250 g
A3872,0500	500 g

Potassium iodide p. A.

C

Specification:

Assay (titr.)	min. 99.5 %	Sulfate	max. 0.001 %
pH (5 %; H ₂ O; 20°C)	6.0 - 9.0	As	max. 0.00001 %
Loss on drying	max. 1 %	Ca	max. 0.001 %
Bromide	max. 0.001 %	Fe	max. 0.0005 %
Chloride	max. 0.001 %	Na	max. 0.05 %
Iodate	max. 0.0002 %	Pb	max. 0.0005 %

Order-No. Quantity

A1040,0100	100 g
A1040,0250	250 g
A1040,0500	500 g
A1040,1000	1 kg
A1040,10006	6 x 1 kg

Potassium iodide pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.0 - 100.5 %	Iodate	complies
Alkaline reacting subst.	complies	Nitrate, Nitrite, Ammonium	
Appearance of solution	complies		complies
Heavy metals (as Pb)	max. 0.001 %	Sulfate	max. 0.015 %
Identity	complies	Thiosulfate	complies
Loss on drying	max. 1.0 %	Thiosulfate & Ba	complies
Organic vol. impurities	complies	Fe	max. 0.002 %

Order-No. Quantity

A1365,0100	100 g
A1365,0250	250 g
A1365,0500	500 g
A1365,1000	1 kg
A1365,10006	6 x 1 kg
A1365,5000	5 kg

Potassium iodide - Solutions

HS-No.: 28276000

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Potassium iodide - Solution 50 % p. A.

C

Specification:

Assay	min. 50 %	Fe	max. 0.0005 %
Chloride	max. 0.001 %	Na	max. 0.05 %
Sulfate	max. 0.001 %	Pb	max. 0.0005 %
As	max. 0.00001 %		

Order-No. Quantity

A1812,0250	250 ml
A1812,0500	500 ml
A1812,1000	1 L

Potassium iodide - Solution 50 % pure

C

Specification:

Assay	approx. 50 %
pH (H ₂ O)	5.5 - 8.5 (20°C)

Order-No. Quantity

A4217,0250	250 ml
A4217,0500	500 ml
A4217,1000	1 L
A4217,5000	5 L

Potassium iodide - Solution 30 % p. A.

C

Specification:

Assay	min. 30 %	Na	max. 0.05 %
Chloride	max. 0.001 %	Pb	max. 0.0005 %
Sulfate	max. 0.001 %		
As	max. 0.00001 %		
Fe	max. 0.0005 %		

Order-No. Quantity

A1854,0250	250 ml
A1854,0500	500 ml
A1854,1000	1 L
A1854,2500	2.5 L

Potassium iodide - Solution 20 % p. A.

C

Specification:

Assay	min. 20 %
Chloride	max. 0.001 %
Sulfate	max. 0.001 %
As	max. 0.00001 %
Fe	max. 0.0005 %
Na	max. 0.05 %
Pb	max. 0.0005 %

Order-No. Quantity

A4248,0250	250 ml
A4248,0500	500 ml
A4248,1000	1 L
A4248,10006	6 x 1 L
A4248,2500	2.5 L
A4248,25004	4 x 2.5 L

Potassium iodide - Solution 20 % pure

C

Specification:

Assay	approx. 20 %
pH (H ₂ O)	5.5 - 8.5 (20°C)

Order-No. Quantity

A2564,0500	500 ml
A2564,1000	1 L
A2564,5000	5 L

Potassium iodide - Solution 10 % p. A.

C

Specification:

Assay	min. 10 %
Chloride	max. 0.001 %
Sulfate	max. 0.001 %
As	max. 0.00001 %
Fe	max. 0.0005 %
Na	max. 0.05 %
Pb	max. 0.0005 %

Order-No. Quantity

A1882,0250	250 ml
A1882,0500	500 ml
A1882,1000	1 L
A1882,10006	6 x 1 L
A1882,2500	2.5 L
A1882,5000	5 L

Potassium iodide - Solution 10 % pure

C

Specification:

Assay approx. 10 %
 pH (H₂O) 5.5 - 8.5 (20°C)

Order-No.	Quantity
A3314,0500	500 ml
A3314,1000	1 L
A3314,10006	6 x 1 L
A3314,5000	5 L

Potassium iodide - Solution 100 g/L p. A.

C

Composition:

Potassium iodide (A1040) . . . 100 g/L

Order-No.	Quantity
A7274,0500	500 ml
A7274,1000	1 L

Potassium iodide - Standard volumetric solutions

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13
 Disposal: 28

WGK: 1

Potassium iodide - Standard volumetric solution (1 M)

C

1 mol/L (1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3318,0250	250 ml
A3318,0500	500 ml
A3318,1000	1 L
A3318,10006	6 x 1 L
A3318,5000CT	5 L
A3318,5000PE	5 L

Potassium iodide - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3342,0500	500 ml
A3342,1000	1 L
A3342,10006	6 x 1 L
A3342,5000CT	5 L
A3342,5000PE	5 L

Potassium metabisulfite see Potassium disulfite Page 643

Potassium myronate see Sinigrin monohydrate Page 719

Potassium nitrate

Melting point 334°C
 Solubility (20°C) 1445 g/L (H₂O)
 Thermal dec. 400°C

KNO₃
M = 101.11 g/mol
 CAS-No.: 7757-79-1
 HS-No.: 28342100
 EC-No.: 231-818-8

Storage: RT
 LGK: 5.1 B
 Disposal: 14

Class / PG: 5.1/III
 UN1486
 WGK: 1
 Danger
 H272
 P210

**Potassium nitrate BioChemica**

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 pH (5 %; H₂O) 5.0 - 7.5 (20°C)

Ammonium max. 0.03 %
 Chloride max. 0.001 %
 Nitrite max. 0.001 %
 Sulfate max. 0.1 %

Order-No.	Quantity
A3874,0500	500 g
A3874,1000	1 kg
A3874,5000	5 kg

Potassium nitrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O; 20°C) 5.0 - 7.5
 Ammonium max. 0.001 %
 Chloride max. 0.03 %
 Nitrite max. 0.001 %
 Sulfate max. 0.1 %

As max. 0.00005 %
 Ca max. 0.001 %
 Fe max. 0.0005 %
 Mg max. 0.002 %
 Na max. 0.02 %
 Pb max. 0.0005 %

Order-No.	Quantity
A1041,0500	500 g
A1041,1000	1 kg
A1041,10006	6 x 1 kg
A1041,5000	5 kg
A1041,9010	10 kg

Potassium nitrate pure Ph. Eur., USP, Food grade

C

Specification:

Assay (titr.) 99.0 - 100.5 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying max. 0.5 %
 Red. substances complies

pH (5 %; H₂O; 20°C) ... 4.5 - 8.5
 Ammonium max. 0.005 %
 Chloride max. 0.002 %
 Nitrite max. 0.0005 %
 Sulfate max. 0.015 %
 As max. 0.0003 %
 Ca max. 0.01 %

Fe max. 0.001 %
 Hg max. 0.0001 %
 Na max. 0.1 %
 Pb max. 0.0005 %

Order-No.	Quantity
A1366,0500	500 g
A1366,1000	1 kg
A1366,10006	6 x 1 kg
A1366,5000	5 kg
A1366,9010	10 kg
A1366,9025	25 kg

di-Potassium oxalate monohydrate

Oxalic acid dipotassium salt

C₂K₂O₄ · H₂O
 M = 184.24 g/mol
 CAS-No.: 6487-48-5
 HS-No.: 29171100
 EC-No.: 209-506-8

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1
 Warning
 H302-H312
 P302+P352



Solubility (20°C) 360 g/L (H₂O)

di-Potassium oxalate monohydrate BioChemica

B

Specification:

Assay (titr.) min. 99.0 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 pH (5 %; H₂O) 7.0 - 8.5 (20°C)

Chloride max. 0.002 %
 Sulfate max. 0.02 %

Order-No.	Quantity
A3875,0250	250 g
A3875,0500	500 g
A3875,1000	1 kg

di-Potassium oxalate monohydrate p. A.

C

Specification:

Assay (titr.) min. 99.0 %
 Heavy metals (as Pb) max. 0.001 %
 Chloride max. 0.002 %
 Sulfate max. 0.02 %
 Fe max. 0.0005 %

Na max. 0.02 %

Order-No.	Quantity
A1869,0250	250 g
A1869,0500	500 g
A1869,1000	1 kg
A1869,10006	6 x 1 kg

di-Potassium oxalate monohydrate pure

C

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Chloride max. 0.02 %
 Sulfate max. 0.1 %

Order-No.	Quantity
A0400,0500	500 g
A0400,1000	1 kg
A0400,10006	6 x 1 kg
A0400,5000	5 kg

di-Potassium oxalate - Solutions

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13
 Disposal: 28

di-Potassium oxalate - Solution 10 % pure

C

WGK: 1
 Warning
 H302-H312
 P302+P352



Composition:

di-Potassium oxalate 100 g/L

Specification:

pH (H₂O) 7.0 - 9.0 (20°C)

Order-No.	Quantity
A3375,0500	500 ml
A3375,1000	1 L
A3375,5000	5 L

di-Potassium oxalate - Standard volumetric solution (0.25 M)

C

0.25 mol/L (0.5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3362,0500	500 ml
A3362,1000	1 L
A3362,5000CT	5 L
A3362,5000PE	5 L

Potassium permanganate

Solubility (20°C) 64 g/L (H₂O)
Thermal dec. 240°C

KMnO₄
M = 158.04 g/mol
CAS-No.: 7722-64-7
HS-No.: 28416100
EC-No.: 231-760-3

Storage: RT
LGK: 5.1 B
Disposal: 22

Class / PG: 5.1/II
UN1490
WGK: 2
Danger
H272-H302-H410
P273-P210



Potassium permanganate *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.003 %
Insoluble matter complies

pH (0.1 M; H₂O) 8.0 - 10.5
Chloride max. 0.005 %
Sulfate max. 0.005 %

Order-No.	Quantity
A3876,0250	250 g
A3876,1000	1 kg

Potassium permanganate p. A.

C

Specification:

Assay (titr.) min. 99 %
Chloride max. 0.005 %
Sulfate max. 0.005 %
Cu max. 0.001 %
Fe max. 0.002 %
Pb max. 0.002 %

Order-No.	Quantity
A0648,0250	250 g
A0648,1000	1 kg
A0648,10006	6 x 1 kg
A0648,5000	5 kg
A0648,9010	10 kg

Potassium permanganate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
Appearance of solution complies
Identity complies
Insoluble subst. max. 0.2 %
Loss on drying max. 0.5 %
Chloride max. 0.02 %
Sulfate max. 0.05 %

Order-No.	Quantity
A0463,0250	250 g
A0463,1000	1 kg
A0463,10006	6 x 1 kg
A0463,5000	5 kg
A0463,9010	10 kg
A0463,9025	25 kg

Potassium permanganate - Standard volumetric solutions

HS-No.: 38220000
EC-No.: 231-760-3

Storage: RT
LGK: 10 - 13
Disposal: 22

Potassium permanganate - Solution (50 g/L) for mercury determination

C

Class / PG: 9/III
UN3082
H411
P273



Composition:

Potassium permanganate . . . 50 g/L

Order-No.	Quantity
A2006,0500	500 ml
A2006,1000	1 L
A2006,2500	2.5 L

Potassium permanganate - Standard volumetric solution (0.2 M)

C

Potassium permanganate 0.2 mol/L (1 N Solution)

Class / PG: 9/III
UN3082
H411
P273



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3579,1000	1 L
A3579,10006	6 x 1 L
A3579,2500	2.5 L
A3579,25004	4 x 2.5 L
A3579,5000CT	5 L

Potassium permanganate - Standard volumetric solution (0.1 M)

C

Potassium permanganate 0.1 mol/L (0.5 N Solution)

H412
P273

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2227,1000	1 L
A2227,10006	6 x 1 L
A2227,2500	2.5 L
A2227,25004	4 x 2.5 L
A2227,5000CT	5 L

Potassium permanganate - Standard volumetric solution (0.02 M)

C

Potassium permanganate 0.02 mol/L (0.1 N Solution)

H412
P273

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1504,1000	1 L
A1504,10006	6 x 1 L
A1504,2500	2.5 L
A1504,25004	4 x 2.5 L
A1504,5000CT	5 L
A1504,9010CT	10 L

Potassium permanganate - Standard volumetric solution (0.01 M)

C

Potassium permanganate 0.01 mol/L (0.05 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3601,1000	1 L
A3601,10006	6 x 1 L
A3601,2500	2.5 L
A3601,5000CT	5 L

Potassium permanganate - Standard volumetric solution (0.005 M)

C

Potassium permanganate 0.005 mol/L (0.025 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4203,1000	1 L
A4203,2500	2.5 L
A4203,5000CT	5 L

Potassium permanganate - Standard volumetric solution (0.002 M)

C

Potassium permanganate 0.002 mol/L (0.01 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1743,1000	1 L
A1743,10006	6 x 1 L
A1743,2500	2.5 L
A1743,25004	4 x 2.5 L
A1743,5000CT	5 L

Potassium permanganate - Standard volumetric solution (0.001 M)

C

Potassium permanganate 0.001 mol/L (0.005 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3544,1000	1 L
A3544,2500	2.5 L
A3544,5000CT	5 L

Potassium permanganate - Standard volumetric solution (0.0002 M)

C

Potassium permanganate 0.0002 mol/L (0.001 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4206,1000	1 L
A4206,2500	2.5 L
A4206,5000CT	5 L

sec.-Potassium phosphate see di-Potassium hydrogen phosphate trihydrate p. A. Page 646
prim.-Potassium phosphate see Potassium dihydrogen phosphate Page 642
Potassium phosphate dibasic see di-Potassium hydrogen phosphate trihydrate p. A. Page 646
Potassium pyrosulfite see Potassium disulfite Page 643
Potassium rhodanide see Potassium thiocyanate Page 661

<i>Seignette salt</i>	$C_4H_4KNaO_6 \cdot 4H_2O$	Storage: RT
	$M = 282.23 \text{ g/mol}$	LGK: 10 - 13
Melting range	CAS-No.: 6381-59-5	Disposal: 3
Solubility (20°C)	HS-No.: 29181300	
Thermal dec.	EC-No.: 205-698-2	

B

Specification:			Order-No.	Quantity
Assay (titr.) min. 99 %	Phosphate max. 0.001 %	A (1 cm/0.1 M in H ₂ O)	A3873,0250	250 g
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.005 %	260 nm max. 0.03	A3873,0500	500 g
Insoluble matter complies		280 nm max. 0.03	A3873,1000	1 kg
pH (5 %; H ₂ O) 6.5 - 8.5 (20°C)				
Chloride max. 0.0005 %				

C

Specification:				Order-No.	Quantity
Assay (titr.)	min. 99 %	Cu	max. 0.0005 %	A0651,0250	250 g
pH (5 %; H ₂ O; 20°C)	6.5 - 8.5	Fe	max. 0.0005 %	A0651,0500	500 g
Chloride	max. 0.0005 %	Pb	max. 0.0005 %	A0651,1000	1 kg
Phosphate	max. 0.001 %	Zn	max. 0.001 %	A0651,10006	6 x 1 kg
Sulfate	max. 0.005 %			A0651,5000	5 kg
Ca	max. 0.005 %				

C

Specification:	Order-No.	Quantity
Assay (titr.) 99.0 - 102.0 %	A0649,0500	500 g
Alkalinity complies	A0649,1000	1 kg
Heavy metals (as Pb) max. 0.001 %	A0649,10006	6 x 1 kg
Identity complies	A0649,5000	5 kg
Water (K.F.) 21.0 - 27.0 %	A0649,9010	10 kg
Ammonium complies		

C

Sorbinic acid potassium salt	$C_6H_7KO_2$	Storage: RT	WGK: 1
	$M = 150.22 \text{ g/mol}$	LGK: 10 - 13	Warning
Melting point	CAS-No.: 24634-61-5	Disposal: 3	H315-H319
Solubility (20°C)	HS-No.: 29161995		P302+P352-P262
	EC-No.: 246-376-1		



Specification:		Order-No.	Quantity
Assay (titr.)	99.0 - 101.0 %		
Loss on drying	max. 1.0 %	A2377,0250	250 g
Acidic/alkaline react. subst. complies	Aldehydes (as acetaldehyde)	A2377,0500	500 g
Appearance of solution	complies		
Heavy metals (as Pb)	max. 0.01 %	A2377,1000	1 kg
Identity	complies	A2377,10006	6 x 1 kg

K_2SO_4	K_2O_4S	Storage: RT	WGK: 1
	$M = 174.27 \text{ g/mol}$	LGK: 10 - 13	
Boiling point	CAS-No.: 7778-80-5	Disposal: 14	
Melting point	HS-No.: 31043000		
Solubility (20°C)	EC-No.: 231-915-5		

B

Specification:			Order-No.	Quantity
Assay (titr.)	min. 99.0 %	Loss on drying max. 0.5 %	A (1 cm/0.5 M in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %	Chloride max. 0.0005 %	260 nm max. 0.005	A3877,0500 500 g
Insoluble matter	complies		280 nm max. 0.005	A3877,1000 1 kg
Total N	max. 0.001 %			A3877,5000 5 kg
pH (5 % H ₂ O)	5.5 - 8.5 (20°C)			

C

Specification:			Order-No.	Quantity
Assay (titr.)	min. 99.0 %	Fe	A1870,0500	500 g
Total N	max. 0.001 %	Mg	A1870,1000	1 kg
pH (5 %; H ₂ O; 20°C)	5.5 - 8.5	Na	A1870,10006	6 x 1 kg
Loss on drying	max. 0.5 %	Pb	A1870,5000	5 kg
Chloride	max. 0.0005 %		A1870,9010	10 kg
As	max. 0.00001 %		A1870,9025	25 kg
Ca	max. 0.005 %			

Potassium sulfate pure DAC

C

Specification:

Assay (titr.) 99.0 - 101.0 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.002 %
 Identity complies
 Loss on drying max. 1 %
 Total N max. 0.0008 %

pH (5 %; H₂O) 5.5 - 8.5
 Chloride max. 0.004 %
 As max. 0.0002 %
 Ca max. 0.02 %
 Fe max. 0.001 %
 Mg max. 0.01 %

Order-No.	Quantity
A0798,0500	500 g
A0798,1000	1 kg
A0798,10006	6 x 1 kg
A0798,5000	5 kg
A0798,9010	10 kg
A0798,9025	25 kg

Potassium sulfate Technical grade

C

Specification:

Assay (titr.) min. 98 %
 Loss on drying max. 1 %
 Chloride max. 0.005 %

Order-No.	Quantity
A7154,5000	5 kg
A7154,9010	10 kg
A7154,9025	25 kg

Potassium sulfocyanide see Potassium thiocyanate Page 661

Potassium thiocyanate

Potassium rhodanide, Potassium
 sulfocyanide

CKNS
 M = 97.18 g/mol
 CAS-No.: 333-20-0
 HS-No.: 28429080
 EC-No.: 206-370-1

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: 1
 Warning
 EUH032-H332-H302-H312-H412
 P273-P302+P352



Melting point 175°C (dec.)
 Solubility (20°C) 2170 g/L (H₂O)

Potassium thiocyanate BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.0005 %
 Insoluble matter complies
 pH (5 %; H₂O) 5.3 - 8.7

Ammonium max. 0.005 %
 Chloride max. 0.005 %
 Sulfate max. 0.005 %
 Fe max. 0.0005 %

Order-No.	Quantity
A2595,0250	250 g
A2595,0500	500 g
A2595,1000	1 kg

Potassium thiocyanate p. A.

C

Specification:

Assay (titr.) min. 99 %
 EtOH-insoluble matter max. 0.01 %
 pH (5 %; H₂O) 5.0 - 8.5 (20°C)
 Ammonium max. 0.002 %
 Chloride max. 0.005 %

Sulfate max. 0.005 %
 Sulfide max. 0.005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Pb max. 0.0002 %

Order-No.	Quantity
A3967,0250	250 g
A3967,0500	500 g
A3967,1000	1 kg
A3967,10006	6 x 1 kg

Potassium thiocyanate pure

C

Specification:

Assay (titr.) min. 98 %
 Heavy metals (as Pb) max. 0.001 %
 pH (5 %; H₂O) 5.0 - 9.0 (20°C)
 Ammonium max. 0.05 %
 Chloride max. 0.01 %

Sulfate max. 0.05 %
 Sulfide max. 0.002 %
 Fe max. 0.0005 %

Order-No.	Quantity
A3322,0500	500 g
A3322,1000	1 kg
A3322,10006	6 x 1 kg
A3322,5000	5 kg

Potassium thiocyanate - Solutions

Storage: RT
 LGK: 10 - 13
 Disposal: 28

WGK: 1

Potassium thiocyanate - Solution 40 %

C

HS-No.: 28429080

EUH032

Composition:

KSCN (A3967) 400 g/L

Specification:

pH (H₂O) 5.5 - 8.5 (20°C)

Order-No.	Quantity
A3346,0250	250 ml
A3346,1000	1 L
A3346,5000	5 L

Potassium thiocyanate - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3326,1000	1 L
A3326,10006	6 x 1 L
A3326,5000CT	5 L
A3326,5000PE	5 L

Potato Dextrose Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: nwg

Composition:

Agar 15 g/L
Glucose 20.0 g/L
Potato extract (solid) 4.0 g/L

Specification:

pH before autoclaving ... approx. 5.6 (20°C)

Order-No.	Quantity
A5838,0500	500 g
A5838,5000	5 kg

◆ **Attention:** Please note that a supplement (A6789) exists for this agar. Please order separately.

Literature: (1) APHA (1976) Compendium of Methods for Microbiological Examination of foods.

Comment: This medium is used for the detection, isolation and enumeration of yeast and moulds.

Direction: Suspend 39 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 115°C for 10 minutes. If it is desired to adjust the reaction to pH 3.5, cool to 55°C and add Lactic acid Solution (A6789) to the agar in the quantity required (about 10 ml). **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Once acidified with lactic acid, the medium should not be re-heated. Store the prepared medium at 2-8°C.

Povidone see Polyvinylpyrrolidone Page 634
PPE - Inhibitor see Elastase Inhibitor I Page 319
PPL see Lipase from porcine pancreas Page 490
PPS see 3-(1-Pyridino)-1-propanesulfonate Page 677

Prealbumin, human

B

Thyroxin Binding Prealbumin, TBPA,
Transthyretin
lyophilized from 20 mM NH₄CO₃. May
contain traces of buffer salts.
from human serum/plasma

CAS-No.: 87090-18-4
HS-No.: 30021095

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A6978,0025	25 µg
A6978,0250	250 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Precipitation reagent for DNA, RNA and proteins see DNA-PrecipitAid Page 304
4-Pregnen-3,20-dione see Progesterone Page 663
4-Pregnene-11β,17α,21-triol-3,20-dione see Hydrocortisone BioChemica Page 420

Primin HPLC grade

B

2-Methoxy-6-pentyl-1,4-benzoquinone
synthetic, allergen from Primula

C₁₂H₁₆O₃
M = 208.26 g/mol
CAS-No.: 15121-94-5
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Danger
H317-H302-H334
P302+P352-P261-P272-P280-P264

Specification:

Assay min. 99 %

Order-No.	Quantity
A3412,0020	20 mg
A3412,0020DOC	20 mg
A3412,0050	50 mg
A3412,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point, elemental analysis. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Primulaverin HPLC grade

B

from Primula veris

C₂₀H₂₈O₁₃
M = 476.43 g/mol
CAS-No.: 154-61-0
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A3718,0010	10 mg
A3718,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Primverin HPLC grade

B

from *Primula veris*

$C_{20}H_{28}O_{13}$
 $M = 476.43$ g/mol
CAS-No.: 154-60-9
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.
A3737,0010
A3737,0050

Quantity
10 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Pregesterone

B

4-Pregnen-3,20-dione

$C_{21}H_{30}O_2$
 $M = 314.47$ g/mol
CAS-No.: 57-83-0
HS-No.: 29372300
EC-No.: 200-350-6

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Warning
H351
P281



Melting point 128 - 132°C

Specification:

Assay min. 98 %
 α 20°C/D; 2 %, Dioxane +190° ± 4°
Loss on drying max. 0.5 %

Order-No.
A0677,0005
A0677,0010
A0677,0025

Quantity
5 g
10 g
25 g

Progoitrin HPLC grade



B

2-Hydroxybut-3-enylglucosinolate
potassium salt
from *Brassica napus*

$C_{11}H_{18}KNO_{10}S_2$
 $M = 427.48$ g/mol
CAS-No.: 585-95-5
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97 %

Order-No.
A8993,0010
A8993,0020
A8993,0050

Quantity
10 mg
20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

rHu Prolactin bioconfident grade



B

Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 25.0$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.
A8854,0010
A8854,0050
A8854,0100
A8854,1000

Quantity
10 µg
50 µg
100 µg
1 mg

Comment: Recombinant human prolactin contains 199 amino acids and a 16 amino acid histidine-based tag for a total length of 215 amino acids and has a predicted molecular mass of 25.0 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates as two bands with an apparent molecular mass of 24 and 30 kDa in SDS-PAGE.

Proliferation Test Kit for Cells see Cell Proliferation Kit XTT Page 190

L-Proline

L-2-Pyrrolidinecarboxylic acid

$C_5H_9NO_2$
 $M = 115.13$ g/mol
CAS-No.: 147-85-3
HS-No.: 29339980
EC-No.: 205-702-2

Storage: RT
LGK: 10 - 13

WGK: nwg

Solubility (25°C) 1500 g/L (H₂O)

L-Proline Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
 α 20°C/D; 4 %, H₂O -84.3° - -86.0°
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %

Sulfate max. 0.03 %
As max. 0.0001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.
A3926,0025
A3926,0100
A3926,0250
A3926,0500
A3926,1000

Quantity
25 g
100 g
250 g
500 g
1 kg

♦ All amino acids from AppliChem are of non-animal origin!

L-Proline BioChemica

B

Specification:

Assay (titr.)	min. 99 %	Chloride	max. 0.02 %
α 20°C/D; 4 %, H ₂ O	-84.3° - -86.0°	Sulfate	max. 0.03 %
Heavy metals (as Pb)	max. 0.001 %		
Insoluble matter	complies		
Other amino acids	max. 0.5 %		
Ammonium	max. 0.02 %		

♦ All amino acids from AppliChem are of non-animal origin!

Order-No.	Quantity
A3453,0025	25 g
A3453,0100	100 g
A3453,0250	250 g
A3453,0500	500 g
A3453,1000	1 kg

L-Proline pure Ph. Eur., USP

C

Specification:

Assay (titr.)	98.5 - 101.0 %	Sulfated ash	max. 0.1 %
α 20°C/D; 4 %, H ₂ O	-84.3° - -86.0°	Other amino acids	max. 0.5 %
Appearance of solution	complies	Ammonium	max. 0.02 %
Heavy metals (as Pb)	max. 0.001 %	Chloride	max. 0.02 %
Identity	complies	Sulfate	max. 0.03 %
Loss on drying	max. 0.4 %	Fe	max. 0.003 %
Organic vol. matter	complies		

♦ All amino acids from AppliChem are of non-animal origin!

Order-No.	Quantity
A1707,0025	25 g
A1707,0100	100 g
A1707,0250	250 g
A1707,0500	500 g
A1707,1000	1 kg
A1707,10006	6 x 1 kg

Pronase E see *Protease from Streptomyces griseus* Page 671**1,2-Propanediol**

Boiling point	184 - 189°C	C ₃ H ₈ O ₂	Storage: RT	WGK: nwg
Melting point	-59°C	M = 76.10 g/mol	LGK: 10 - 13	
		CAS-No.: 57-55-6		
		HS-No.: 29053200		
		EC-No.: 200-338-0		

1,2-Propanediol pure Ph. Eur., USP

C

Specification:

Assay (HPLC)	min. 99.5 %	Refractive index	1.431 - 1.433	Sulfate	max. 0.006 %
Acidic reacting subst.	complies	Relative density	1.035 - 1.037		
Heavy metals (as Pb)	max. 0.0005 %	Sulfated ash	max. 0.01 %		
Identity (IR)	complies	Volatile org. impurities	complies		
Oxidizing subst.	complies	Water (K.F.)	max. 0.2 %		
Red. substances	complies	Chloride	max. 0.007 %		

Order-No.	Quantity
A6833,1000	1 L
A6833,10006	6 x 1 L
A6833,2500	2.5 L
A6833,25004	4 x 2.5 L
A6833,5000	5 L

1,2-Propanediol for synthesis

C

Specification:

Assay (HPLC)	min. 99 %
Heavy metals (as Pb)	max. 0.0005 %
Sulfated ash	max. 0.05 %
Loss on drying	max. 0.2 %

Order-No.	Quantity
A0872,0500	500 ml
A0872,1000	1 L
A0872,10006	6 x 1 L
A0872,2500	2.5 L
A0872,25004	4 x 2.5 L
A0872,5000	5 L

1-Propanesulfonic acid sodium salt IPC grade

C

Sodium 1-propane sulfonate	C ₃ H ₇ NaO ₃ S	Storage: RT
	M = 146.14 g/mol	LGK: 10 - 13
Melting point	255°C	Disposal: 28
	CAS-No.: 14533-63-2	
	HS-No.: 29041000	
	EC-No.: 238-564-7	

Specification:

Assay (titr.)	min. 99 %	A (1 cm/0.005 M in H ₂ O)
Solubility (10 %; H ₂ O)	clear, colorless	210 nm
		230 nm
		260 nm

Order-No.	Quantity
A1011,0005	5 g
A1011,0010	10 g
A1011,0025	25 g

2-Propanesulfonic acid sodium salt IPC grade

B

Sodium 2-propanesulfonate, Isopropylsulfonic acid sodium salt	C ₃ H ₇ NaO ₃ S	Storage: RT
	M = 146.14 g/mol	LGK: 10 - 13
Melting point	255°C	Disposal: 28
	CAS-No.: 5399-58-6	
	HS-No.: 29041000	
	EC-No.: 238-564-7	

Specification:

Assay (titr.)	min. 99 %	A (1 cm/0.005 M in H ₂ O)
Solubility (10 %; H ₂ O)	clear, colorless	220 nm
		260 nm

Order-No.	Quantity
A2178,0005	5 g
A2178,0025	25 g

1,2,3-Propanetriol see Glycerol anhydrous Page 383
n-Propanol see 1-Propanol Page 665

1-Propanol

Alcohol C₃, Propyl alcohol, n-Propanol

C₃H₈O
M = 60.10 g/mol
CAS-No.: 71-23-8
HS-No.: 29051200
EC-No.: 200-746-9

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1274
WGK: 1
Danger
H336-H225-H318
P233-P280-P305+P351+P338-P313-
P210



Boiling point 96.5 - 98°C
Density (20°C) 0.80 g/cm³
Melting point -127°C

1-Propanol HPLC grade

C

Specification:

Assay (HPLC) min. 99.5 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity max. 0.0005 meq/g	230 nm max. 0.2
Non-volatile matter max. 0.0005 %	240 nm max. 0.1
Water (K.F.) max. 0.05 %	270 nm max. 0.015
	310 nm max. 0.002

Order-No.	Quantity
A1601,1000	1 L
A1601,10006	6 x 1 L
A1601,2500	2.5 L
A1601,25004	4 x 2,5 L

1-Propanol dried, p. A.

C

Specification:

Assay (HPLC) min. 99.8 %
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %

Order-No.	Quantity
A0531,0500	500 ml
A0531,1000	1 L

◆ This product contains molecular sieve as a drying agent!

1-Propanol p. A.

C

Specification:

Assay (HPLC) min. 99.5 %	Fe max. 0.00001 %
Acidity/Alkalinity max. 0.0005 meq/g	K max. 0.00002 %
Non-volatile matter max. 0.0005 %	Mg max. 0.00001 %
Total P max. 0.00005 %	Na max. 0.00001 %
Total S max. 0.00005 %	Pb max. 0.000002 %
Total Si max. 0.000005 %	Zn max. 0.00001 %
2-Propanol max. 0.05 %	
C4-Alcohols max. 0.05 %	
Ethanol max. 0.05 %	
Water (K.F.) max. 0.05 %	
Ca max. 0.00002 %	
Cu max. 0.000002 %	

Order-No.	Quantity
A0634,0250	250 ml
A0634,0500	500 ml
A0634,1000	1 L
A0634,10006	6 x 1 L
A0634,2500	2.5 L
A0634,25004	4 x 2,5 L
A0634,5000	5 L
A0634,9010	10 L
A0634,9025BK	25 L
A0634,9025PE	25 L

1-Propanol pure Ph. Eur.

C

Specification:

Acidic/alkaline react. subst. complies	A (1 cm/water HPLC grade)
Identity complies	230 nm max. 0.300
Non-volatile matter max. 0.004 %	250 nm max. 0.100
Red. substances complies	270 nm max. 0.030
Related subst. complies	290 nm max. 0.020
Water (K.F.) max. 0.2 %	310 nm max. 0.010

Order-No.	Quantity
A6280,1000	1 L
A6280,10006	6 x 1 L
A6280,2500	2.5 L
A6280,25004	4 x 2,5 L
A6280,5000	5 L
A6280,9010	10 L
A6280,9025BK	25 L
A6280,9025PE	25 L

1-Propanol pure

C

Specification:

Assay (HPLC) min. 99 %
Methanol (GC) max. 0.1 %
Water (K.F.) max. 0.25 %

Order-No.	Quantity
A0635,1000	1 L
A0635,10006	6 x 1 L
A0635,2500	2.5 L
A0635,25004	4 x 2,5 L
A0635,5000	5 L
A0635,9010	10 L
A0635,9025BK	25 L
A0635,9025PE	25 L

2-Propanol (Isopropanol)

sec. Propanol, Isopropanol, Isopropyl alcohol

C₃H₈O
M = 60.10 g/mol
CAS-No.: 67-63-0
HS-No.: 29051200
EC-No.: 200-661-7

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1219
WGK: 1
Danger
H225-H319-H336
P305+P351+P338-P210-P233



2-Propanol Molecular biology grade

B

Boiling point 82°C (abs.)
Density (d 25°C/4°C) .. 0.786 (abs.)
Melting point -89°C (abs.)
n 20°C/D 1.377 (abs.)

Specification:

DNases/RNases/Proteases not detectable
Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Total P max. 0.00005 %
Total S max. 0.00005 %
Ethanol max. 0.01 %
Methanol max. 0.1 %
n-Propanol max. 0.05 %
Water (K.F.) max. 0.1 %
Ca max. 0.00002 %
Cu max. 0.000002 %

Fe max. 0.00001 %
Mg max. 0.00001 %
Pb max. 0.000002 %
Zn max. 0.00001 %

Order-No. Quantity

A3928,0500GL 500 ml
A3928,0500PE 500 ml
A3928,1000GL 1 L
A3928,10006GL 6 x 1 L
A3928,1000PE 1 L
A3928,10006PE 6 x 1 L
A3928,2500GL 2.5 L
A3928,25004GL 4 x 2.5 L
A3928,2500PE 2.5 L
A3928,25004PE 4 x 2.5 L

2-Propanol Residue analysis grade

C

Boiling point 82°C (abs.)
Density (d 25°C/4°C) .. 0.786 (abs.)
Melting point -89°C (abs.)
n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.1 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No. Quantity

A1590,2500 2.5 L
A1590,25004 4 x 2.5 L

2-Propanol HPLC grade (for electrochemical detection)

C

Boiling point 82°C (abs.)
Density (d 25°C/4°C) .. 0.786 (abs.)
Melting point -89°C (abs.)
n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.005 %
Water (K.F.) max. 0.1 %

Order-No. Quantity

A2421,1000 1 L
A2421,2500 2.5 L
A2421,25004 4 x 2.5 L

Comment: Purified and tested by HPLC-EC. Detector: ESA Coulochem II / Mode: oxidative / Electrode: Graphite

2-Propanol HPLC grade

C

Boiling point 82°C (abs.)
Density (d 25°C/4°C) .. 0.786 (abs.)
Melting point -89°C (abs.)
n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.1 %

A (1 cm²/water HPLC grade)
210 nm max. 0.4
220 nm max. 0.25
230 nm max. 0.1
240 nm max. 0.01
250 nm max. 0.005

Order-No. Quantity

A1592,1000 1 L
A1592,10006 6 x 1 L
A1592,2500 2.5 L
A1592,25004 4 x 2.5 L

2-Propanol BioChemica

B

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.7 %	C5-Alcohols max. 0.005 %
Acidity/Alkalinity max. 0.0005 meq/g	Ethanol max. 0.01 %
Heavy metals (as Pb) max. 0.0005 %	Methanol max. 0.1 %
Insoluble matter complies	n-Propanol max. 0.05 %
Non-volatile matter max. 0.001 %	Water (K.F.) max. 0.1 %
Total P max. 0.00005 %	
Total S max. 0.00005 %	
Total Si max. 0.000005 %	
C4-Alcohols max. 0.005 %	

Order-No.	Quantity
A3465,0500	500 ml
A3465,1000	1 L
A3465,10006	6 x 1 L
A3465,2500	2.5 L
A3465,25004	4 x 2,5 L
A3465,5000	5 L
A3465,9010	10 L

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

Precipitation of nucleic acids.

Comment: Isopropanol is used for the precipitation of nucleic acids. While ethanol is added 2.5 times the volume of the nucleic acid-containing sample, isopropanol is added in an equal volume. A precipitate is formed without cooling in an ice basket or at -20°C. The advantage of isopropanol is the reduced total volume. The major disadvantages are the removal by lyophilization, which works better with ethanol, also salts may coprecipitate with the DNA. Therefore, the isopropanol precipitation is performed subsequent to the ethanol precipitation.

2-Propanol dried, p. A.

C

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.8 %
Non-volatile matter max. 0.001 %
Water (K.F.) max. 0.01 %

Order-No.	Quantity
A0532,0500	500 ml
A0532,1000	1 L
A0532,10006	6 x 1 L
A0532,2500	2.5 L
A0532,25004	4 x 2,5 L

◆ This product contains molecular sieve as a drying agent!

2-Propanol p. A.

C

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.7 %	Pb max. 0.000002 %
Acidity/Alkalinity max. 0.0005 meq/g	Zn max. 0.00001 %
Non-volatile matter max. 0.001 %	
Total P max. 0.00005 %	
Total S max. 0.00005 %	
Total Si max. 0.000005 %	
C4-Alcohols max. 0.005 %	
C5-Alcohols max. 0.005 %	
Ethanol max. 0.01 %	
Methanol max. 0.1 %	
Propanol max. 0.05 %	
Water (K.F.) max. 0.1 %	
Ca max. 0.00002 %	
Cu max. 0.000002 %	
Fe max. 0.00001 %	
K max. 0.00002 %	
Mg max. 0.00001 %	
Na max. 0.00001 %	

Order-No.	Quantity
A0900,0100	100 ml
A0900,0500GL	500 ml
A0900,0500PE	500 ml
A0900,1000GL	1 L
A0900,10006GL	6 x 1 L
A0900,1000PE	1 L
A0900,10006PE	6 x 1 L
A0900,2500GL	2.5 L
A0900,25004GL	4 x 2,5 L
A0900,2500PE	2.5 L
A0900,25004PE	4 x 2,5 L
A0900,5000	5 L
A0900,9010	10 L
A0900,9025BK	25 L
A0900,9025PE	25 L

2-Propanol pure Ph. Eur., USP

C

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99.0 %	A (1 cm/H ₂ O)
Acidic/alkaline react. subst. complies	230 nm max. 0.300
Density (d 20°C/20°C) 0.785 - 0.789	250 nm max. 0.100
Density (d 25°C/25°C) 0.783 - 0.787	270 nm max. 0.030
Identity complies	290 nm max. 0.020
Non-volatile matter max. 0.002 %	310 nm max. 0.01
Refractive index 1.376 - 1.378	
Benzene & rel. subst. complies	
Peroxides complies	
Water (K.F.) max. 0.5 %	

Order-No.	Quantity
A3267,1000	1 L
A3267,10006	6 x 1 L
A3267,2500	2.5 L
A3267,25004	4 x 2,5 L
A3267,5000	5 L
A3267,9010	10 L
A3267,9025BK	25 L
A3267,9025PE	25 L

2-Propanol pure

C

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 99 %
 Non-volatile matter max. 0.002 %
 Methanol max. 0.1 %
 Water (K.F.) max. 0.25 %
 Fe max. 0.0001 %
 Pb max. 0.0005 %

Order-No.	Quantity
A0892,1000	1 L
A0892,10006	6 x 1 L
A0892,2500	2.5 L
A0892,25004	4 x 2,5 L
A0892,5000	5 L
A0892,9010	10 L
A0892,9025BK	25 L
A0892,9025PE	25 L

2-Propanol for synthesis

C

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) min. 98 %
 Non-volatile matter max. 0.002 %
 Methanol max. 0.25 %
 Water (K.F.) max. 0.25 %
 Fe max. 0.001 %
 Pb max. 0.005 %

Order-No.	Quantity
A2431,1000	1 L
A2431,10006	6 x 1 L
A2431,2500	2.5 L
A2431,25004	4 x 2,5 L
A2431,5000	5 L
A2431,9010	10 L
A2431,9025BK	25 L
A2431,9025PE	25 L

2-Propanol Technical grade

C

Boiling point 82°C (abs.)
 Density (d 25°C/4°C) .. 0.786 (abs.)
 Melting point -89°C (abs.)
 n 20°C/D 1.377 (abs.)

Specification:

Assay (HPLC) approx. 98 %
 Methanol max. 0.5 %
 Water (K.F.) max. 0.5 %

Order-No.	Quantity
A0995,2500	2.5 L
A0995,25004	4 x 2,5 L
A0995,5000	5 L
A0995,9010	10 L
A0995,9025BK	25 L
A0995,9025PE	25 L

2-Propanol 70 % p. A.

C

Specification:

Assay (HPLC) min. 70 %	Na max. 0.00001 %
Acidity/Alkalinity max. 0.0005 meq/g	Pb max. 0.000002 %
Non-volatile matter max. 0.001 %	Zn max. 0.00001 %
Total P max. 0.00005 %	
Total S max. 0.00005 %	
Total Si max. 0.000005 %	
C4-Alcohols max. 0.005 %	
C5-Alcohols max. 0.005 %	
Ethanol max. 0.01 %	
Methanol max. 0.1 %	
Propanol max. 0.05 %	
Ca max. 0.00002 %	
Cu max. 0.000002 %	
Fe max. 0.00001 %	
K max. 0.00002 %	
Mg max. 0.00001 %	

Order-No.	Quantity
A3517,0500GL	500 ml
A3517,0500PE	500 ml
A3517,1000GL	1 L
A3517,1000PE	1 L
A3517,10006PE	6 x 1 L
A3517,2500GL	2.5 L
A3517,25004GL	4 x 2,5 L
A3517,2500PE	2.5 L
A3517,25004PE	4 x 2,5 L
A3517,5000	5 L
A3517,9010	10 L
A3517,9025BK	25 L
A3517,9025PE	25 L

2-Propanol 70 % pure

C

Specification:

Assay (HPLC) min. 70 %
 Non-volatile matter max. 0.002 %
 Methanol max. 0.1 %
 Fe max. 0.0001 %
 Pb max. 0.0005 %

Order-No.	Quantity
A3536,1000	1 L
A3536,10006	6 x 1 L
A3536,2500	2.5 L
A3536,25004	4 x 2,5 L
A3536,5000	5 L
A3536,9010	10 L
A3536,9025BK	25 L
A3536,9025PE	25 L

2-Propanol 70 % Technical grade

C

Specification:

Assay (HPLC) approx. 70 %
Methanol max. 0.5 %

Order-No.	Quantity
A4245,2500	2.5 L
A4245,25004	4 x 2,5 L
A4245,5000	5 L
A4245,9010	10 L
A4245,9025BK	25 L
A4245,9025PE	25 L

2-Propanol D₈ (Isopropanol D₈)

C

Isopropanol D₈

Boiling point 82°C
Density (d 25°C/4°C) .. 0.786
Melting point -89.5°C

C₃D₈O
M = 68.14 g/mol
CAS-No.: 22739-76-0
HS-No.: 28459010
EC-No.: 245-189-2

Storage: RT
LGK: 3 A
Disposal: 1
Class / PG: 3/II
UN1219
WGK: 1
Danger
H336-H225-H319
P305+P351+P338-P233-P210



Specification:

Deuteration degree min. 99 %

Order-No.	Quantity
DS-22,0001	1 ml
DS-22,0005	5 ml

1,2,3-Propantriol see Glycerol 87 % Page 385

Propidium iodide BioChemica

B

3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl-phenanthridinium iodide methiodide

Emission maximum .. 617 nm
Extinction max. 535 nm

C₂₇H₃₄I₂N₄
M = 668.40 g/mol
CAS-No.: 25535-16-4
HS-No.: 29339980
EC-No.: 247-081-0

Storage: 2-8°C
protected from light
Warning
H335-H315-H319
P305+P351+P338-P261



Specification:

Assay min. 94 %

Order-No.	Quantity
A2261,0025	25 mg
A2261,0050	50 mg
A2261,0100	100 mg

Literature: (1) Waring, M. (1975) Ethidium and Propidium in *Antibiotics Vol. III*, pages 141-165; (J.W. Corcoran & F.E. Hahn eds.) Springer-Verlag.
(2) Pollack, A. & Ciancio, G. (1990) *Methods Cell Biol.* **33**, 19-24
(3) Krishan, A. (1990) *Methods Cell Biol.* **33**, 121-125
(4) Running, M.P. et al. (1995) *Methods Cell Biol.* **49**, 217-229
(5) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, page 14.7.10 (Suppl. 31) Greene Publishing & Wiley-Interscience, New York.

Comment: Propidium iodide (PI) is - like ethidium bromide (EtBr) - a DNA intercalator and was developed as an anti-Trypanosoma reagent, but never applied as such (1). Today, this fluorescence DNA dye is mainly applied in 'flow cytometry' (2, 3). At a concentration of 1 µg/ml, probably all DNA binding sites are saturated. PI will be excluded by living cells. Hence, only dead or dying cells will be stained. Propidium iodide can be excited by light with wavelengths in the visible range and bleaches slowly, having clear advantages over DAPI (4).

Stability: Depending on the reference, there are many recommendations of how to store solutions of Propidium iodide. According to ref. (4) store at +4°C (4) or at room temperature (3) or at -20°C (5) protect from light. The informations on the stability of solutions varies from 4-6 months (4) to unlimited (3). It seems that the buffer used is of great importance.

Caution: Propidium iodide is hazardous, like all chemicals binding selectively to DNA. Propidium iodide (LD₅₀ 16 mg/kg, subcutaneous, mouse) is more toxic than ethidium bromide (LD₅₀ 110 mg/kg, subcutaneous, mouse).

Propionic acid for synthesis

C

CH₃CH₂COOH

Boiling point 140° - 142° C
Melting point -22° C

C₃H₆O₂
M = 74.08 g/mol
CAS-No.: 79-09-4
HS-No.: 29155000
EC-No.: 201-176-3

Storage: RT
LGK: 8 A
Disposal: 4
Class / PG: 8(3)/II
UN3463
Danger
H314
P280-P301+P330+P331-
P305+P351+P338



Specification:

Assay min. 99 %
Density (d 20°C/4°C) 0.993 - 0.994
Identity (IR) complies
Water (K.F.) max. 0.3 %

Order-No.	Quantity
A4319,0500	500 ml
A4319,1000	1 L
A4319,10006	6 x 1 L
A4319,2500	2.5 L
A4319,25004	4 x 2,5 L

Propionic acid sodium salt pure

C

Sodium propionate

$C_3H_5NaO_2$
 $M = 96.06$ g/mol
 CAS-No.: 137-40-6
 HS-No.: 29155000
 EC-No.: 205-290-4

Storage: RT
 LGK: 10 - 13

WGK: 1
 Warning
 H312
 P302+P352



Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter max. 0.05 %
 Water (K.F.) max. 1 %

Order-No.	Quantity
A1931,0500	500 g
A1931,1000	1 kg
A1931,10006	6 x 1 kg
A1931,5000	5 kg

Propiopythione see Thiolutin BioChemica Page 813

Propyl alcohol see 1-Propanol Page 665

All-trans-4-(4'-Propyl)bicyclohexyl- α -maltoside BioChemica



B

trans-PCCaM

$C_{27}H_{47}O_{11}$
 $M = 547.67$ g/mol
 HS-No.: 29389090

Storage: 2-8°C

hygroscopic

Melting range 195 - 200°C

Specification:

Assay min. 99 %
 α 20°C/D: 1 %, MeOH 140° - 150°
¹H-NMR complies
 Appearance white powder
 pH (1 %; H₂O) 5.5 - 6.5

Order-No.	Quantity
A9004,0250	250 mg
A9004,9001	1 g
A9004,9005	5 g

Comment: The product is water-soluble (more than 1 g in 5 ml of water at 30°C).

Propylene carbonate pure

C

Carbonic acid propylene glycol ester,
 Propylene glycol carbonate, 4-Methyl-
 1,3-dioxolan-2-one

$C_4H_6O_3$
 $M = 102.09$ g/mol
 CAS-No.: 108-32-7
 HS-No.: 29209010
 EC-No.: 203-572-1

Storage: RT
 LGK: 10
 Disposal: 1

WGK: 1
 Warning
 H319
 P305+P351+P338



Density (20°C/4°C) 1.204 - 1.205

Specification:

Assay (HPLC) min. 99 %
 n 20°C/D 1.420 - 1.422

Order-No.	Quantity
A4866,0100	100 ml
A4866,1000	1 L
A4866,10006	6 x 1 L
A4866,2500	2.5 L

1,2-Propylene glycol see 1,2-Propanediol Page 664

Propylene glycol carbonate see Propylene carbonate pure Page 670

Propyleneglycol monomethyl ether see 1-Methoxy-2-propanol pure Page 536

n-Propyl gallate pure Ph. Eur.

C

Propyl-3,4,5-trihydroxybenzoate, 3,4,5-
 Trihydroxybenzoic acid propyl ester

$C_{10}H_{12}O_5$
 $M = 212.20$ g/mol
 CAS-No.: 121-79-9
 HS-No.: 29182900
 EC-No.: 204-498-2

Storage: RT
 LGK: 10-13
 Disposal: 3

WGK: 2
 Warning
 H317-H302
 P262-P302+P352-P280



Melting point 148 - 151°C

Specification:

Assay (UV) 97.0 - 103.0 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity (IR) complies

Loss on drying max. 0.5 %
 Sulfated ash max. 0.1 %
 Chloride max. 0.01 %
 Gallic acid (TLC) complies

Total Chlorine max. 0.02 %
 Zn max. 0.0025 %

Order-No.	Quantity
A5338,0100	100 g
A5338,0500	500 g
A5338,1000	1 kg

Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC

C

Propylparaben, 4-Hydroxybenzoic acid
 propylester

$C_{10}H_{12}O_3$
 $M = 180.21$ g/mol
 CAS-No.: 94-13-3
 HS-No.: 29182900
 EC-No.: 202-307-7

Storage: RT
 protected from light
 LGK: 10 - 13

WGK: 1

Specification:

Assay (titr.) 99.5 - 100.5 %
 Acidity complies
 Appearance of solution complies
 Color of solution complies
 Heavy metals (as Pb) max. 0.001 %

Identity complies
 Loss on drying max. 0.5 %
 Melting point 96 - 99°C
 Organic impurities max. 1.0 %
 Related subst. complies

Sulfated ash max. 0.05 %

Order-No.	Quantity
A6598,0250	250 g
A6598,1000	1 kg
A6598,10006	6 x 1 kg
A6598,5000	5 kg

Propylparaben see Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC Page 670

Propyl-3,4,5-trihydroxybenzoate see n-Propyl gallate pure Ph. Eur. Page 670

Prosecco see Ethanol 10 % - 39 % Page 336

Prostate specific Antigen (PSA), human

B

PSA, Cancer-associated PSA
supplied liquid in 50 mM phosphate
buffer, pH 7.5, 150 mM NaCl, 0,1 %
NaN₃, sterile filtered
from human seminal fluid

HS-No.: 38220000

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 96 %
PSA content min. 2 mg/ml

Order-No.	Quantity
A6979,0050	50 µg
A6979,0100	100 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Prostate specific Antigen - α₁-Antichymotrypsin Complex, human

B

PSA-ACT
supplied as frozen liquid in 50 mM
phosphate buffer, pH 7.5, 150 mM NaCl,
0,1 % NaN₃
from human seminal fluid and plasma

HS-No.: 38220000

Storage: -20°C
Shipment: dry ice

Specification:

Assay (SDS-PAGE) min. 98 % (no free
PSA)
Protein min. 0.5 mg/ml

Order-No.	Quantity
A6981,0010	10 µg
A6981,0050	50 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Prostatropin see rHu bFGF (155) Page 349

Protease from *Streptomyces griseus*

B

Pronase E

CAS-No.: 9036-06-0

Storage: 2-8°C

WGK: 1

Solubility (20°C) soluble (H₂O)
pH (1 %; H₂O ; 20°C) . 6.0 - 7.0

HS-No.: 35079090

LKG: 10 - 13

Danger
H335-H319-H315-H334
P304+P341-P302+P352-P260-
P342+P311-P305+P351+P338



Specification:

Activity >4000 U/mg (Casein
pH 7.4; 40°C)
Appearance (powder) light brown, fine

Order-No.	Quantity
A3459,0001	1 g
A3459,0005	5 g

Literature: (1) Gwatkin, R.B.L. (1973) "Pronase" in *Tissue culture: Methods and Applications* (Kruse & Patterson eds.) Academic Press, New York & London.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2001. *Current Protocols in Molecular Biology*. John Wiley & Sons, New York.
(3) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page A4.50. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Comment: This protease is a mixture of endo- and exo proteinases isolated from *Streptomyces griseus* (1). Proteins are digested to single amino acids. It is applied in the *in situ* hybridization with cellular RNA (ref. 2 Suppl. 7+17 Page 14.3.2-9), in the isolation of DNA and RNA, in the tissue dissociation (1) or in the purification of glycopeptides from purified glycoproteins (ref. 2 Suppl. 23 pp. 17.14.3-7). The pH optimum is between 6 and 8. The protease from *Streptomyces griseus* requires calcium ions and is active even in the presence of 1 % SDS or 1 % Triton® X-100. Some components are stable against urea and guanidinium salts, but a complete digest of the substrate is not possible anymore. There are different protocols for dissolving and treating this protease. The protease from *Streptomyces griseus* can be dissolved at a concentration of 0.25 % in PBS and filter-sterilized (1) or at 20 mg/ml in water (ref. 3 page A4.50) or at 10 mg/ml in 100 mM Tris - HCl (pH 7.5), 10 mM CaCl₂ (ref. 2 page 17.14.6; stable for 2 days at +4°C). For application, which require the destruction of DNases and RNases, a pretreatment is recommended ("self-digestion"): 20 mg/ml protease are dissolved in 10 mM Tris - HCl (pH 7.5), 10 mM NaCl and incubated for 1 h at 37°C. Store in small aliquots at -20°C. The working concentration is 1 mg/ml and the reaction temperature at 37°C.

Protease Inhibitor Cocktails

HS-No.: 38220000

Protease Inhibitor Cocktail 1 Cell

B

lyophilized

Storage: -20°C
shipment at ambient temperature

- lyophilized mixture of protease inhibitors against a broad spectrum of proteases
- reconstitute in 1 ml of water to obtain a 100X stock solution
- inhibits serine-, aspartic-, metallo-, cysteine- and trypsin-like proteases
- suited in preparation of cell extracts

Composition:

AEBSF · HCl 167 mM
EDTA · Na₂ salt 1344 mM
Leupeptin hemisulfate 210 µM
Pepstatin A 146 µM

Order-No.
A7706,0001 **Quantity**
1 ml

* The composition refers to the 100X stock solution.

Comment: The Protease Inhibitor Cocktail 1 Cell is supplied as a lyophilisate. Reconstitution in 1 ml of water results in a 100X stock solution. Do not freeze the liquified cocktail. The reconstituted inhibitor cocktail is stable for 3 months at 2-8°C.

Protease Inhibitor Cocktail 2 MultiPurpose

B

lyophilized

Storage: -20°C hygroscopic
shipment at ambient temperature

Composition:

AEBSF · HCl 50 mM
Aprotinin 15 µM
E-64 100 µM
EDTA · Na₂ salt 50 mM
Leupeptin hemisulfate 100 µM

Order-No.
A7719,0001 **Quantity**
1 ml

* The composition refers to the 100X stock solution.

Comment: The Protease Inhibitor Cocktail 2 MultiPurpose is supplied as a lyophilisate. Reconstitution in 1 ml of water results in a 100X stock solution. Prepare aliquots and freeze. Prevent repeated freezing / thawing. The Inhibitor Cocktail is stable for 3 years (lyophilized) if stored at -20°C or approx. 1 month if reconstituted and stored at -20°C.

Protease Inhibitor Cocktail 3 Bacteria

B

lyophilized

Storage: -20°C hygroscopic
shipment at ambient temperature

Composition:

AEBSF · HCl 20 mM
Bestatin 1.7 mM
E-64 200 µM
EDTA · Na₂ salt 85 mM
Pepstatin A 2 mM

Order-No.
A7735,0001 **Quantity**
1 ml

* The concentration refers to the 5 ml stock solution after reconstitution.

Comment: The Protease Inhibitor Cocktail 3 Bacteria is supplied as a lyophilisate. Some of the components are hygroscopic. Therefore, don't open the vial unless it is brought to ambient temperature. Dissolve in 1 ml of DMSO and subsequently dilute with 4 ml of ddH₂O to obtain a stock solution sufficient for the inhibition of proteases in an extract from 20 g of *E. coli* cells. At -20°C, the lyophilised product is stable for 5 years. Solutions may be stored at -20°C for 6 months.

Protease Inhibitor Cocktail 4 MammCell/Tissue Plus

B

ready-to-use stock solution

Storage: -20°C
shipment at ambient temperature

- mixture of inhibitors against a broad spectrum of proteases from mammalian origin
- supplied in 1 ml of DMSO and small amount of water
- inhibits serine, aspartic, cysteine and trypsin-like proteases, as well as aminopeptidase B, leucine aminopeptidase and esterases
- suited for preparation of up to 20 g of extracts from mammalian cells and tissue

Composition:

AEBSF · HCl 100 mM Leupeptin hemisulfate . . . 2 mM
Aprotinin 80 µM Pepstatin A 1 mM
Bestatin 5 mM
E-64 1.5 mM

Order-No.
A7757,0001 **Quantity**
1 ml

* The concentration refers to the 1 ml stock solution.

Comment: The Protease Inhibitor Cocktail 4 is suited especially for the preparation of extracts from mammalian cells and tissue. The 6 different inhibitors guarantee an efficient inhibition of most types of proteases (except for metallo proteases). The cocktail is supplied *ready-to-use* dissolved in DMSO and a small amount of water. The Inhibitor Cocktail 4 stock solution is sufficient for the inhibition of proteases in extracts from 20 g of mammalian cells or tissue. Store this stock solution at -20°C for 6 months. Shipment at ambient temperature.

Protease Inhibitor Cocktail 5 MammCell/Tissue

B

lyophilized

Storage: -20°C
shipment at ambient temperature

Composition:

AEBSF · HCl 500 µM
Aprotinin 150 nM
E-64 1 µM
Leupeptin hemisulfate 1 µM

Order-No.
A7779,0001

Quantity
1 ml

* The concentration refers to the lyophilisate reconstituted as 1 ml stock solution.

Comment: The composition of Protease Inhibitor Cocktail 5 is similar to Cocktail 4, but less complex. The application is identical, i.e. the preparation of extracts from mammalian cells. The 4 different inhibitors guarantee an efficient inhibition of most types of proteases (except for metallo proteases). The cocktail is supplied as a lyophilisate. It is hygroscopic. A 100X stock solution is prepared by dissolving in 1 ml of ddH₂O. Before opening the vial, bring to ambient temperature. The lyophilisate is stable for 1 year at -20°C, while the solution is stable for 6 months at -20°C.

Protease Inhibitor Cocktail 6 His-Tag Prot

B

ready-to-use stock solution

Storage: -20°C
shipment at ambient temperature

- mixture of inhibitors especially for the purification of His-Tag proteins from cell extracts
- supplied in 1 ml of DMSO and small amount of water
- inhibits serine, aspartic, metallo and cysteine proteases, as well as aminopeptidase B and leucine aminopeptidase
- suited for preparation of up to 10 g of extracts from cells

Composition:

AEBSF · HCl 100 mM
Bestatin 5 mM
E-64 1.5 mM
Pepstatin A 0.2 mM
Phosphoramidon 2 mM

Order-No.
A7802,0001

Quantity
1 ml

* The concentration refers to the 1 ml stock solution.

Comment: The Protease Inhibitor Cocktail 6 is designed especially for the inhibition of proteases during the purification of His-tagged proteins from cell extracts. The cocktail is supplied ready-to-use dissolved in DMSO and a small amount of water. The Inhibitor Cocktail 6 stock solution is sufficient for the inhibition of proteases in extracts from 10 g of cells. Stable at -20°C for 6 months.

α₁-Proteinase Inhibitor see α₁-Antitrypsin, human Page 111

Proteinase K, recombinant

B

[E.C. 3.4.21.14]

lyophilized

from *Pichia pastoris*

M = 28.8 kD

CAS-No.: 39450-01-6

HS-No.: 35079090

EC-No.: 254-457-8

Storage: 2-8°C

LGK: 10 - 13

WGK: 1

Danger

H335-H334-H315-H319

P302+P352-P342+P311-P260-

P305+P351+P338-P304+P341



Solubility (H₂O; 20°C) . clear, colorless

(20 mg/ml)

pH optimum 7.5 - 10.5

Specification:

DNases/RNases not detectable
Activity/mg min. 30 mAnsonU
Appearance white lyophilizate
Bioburden ≤125 cfu/g

DNA (threshold) ≤ 10 pg/mg en-
zyme

Order-No.
A7932,0025 25 mg
A7932,0100 100 mg
A7932,0500 500 mg

Comment: Recombinant Proteinase K is used e.g. during nucleic acid isolation to inactivate DNases and RNases. It can be used for digestion of cells (bacteria too) and tissue. During production of this enzyme, almost all nucleic acids are removed. Therefore, this enzyme is suited for applications in sensitive PCR reactions, where exogenous nucleic acids may interfere.
Unit definition (hemoglobin): One unit is defined as the enzyme activity which releases folin positive amino acids and peptides equivalent to 1 µmol of tyrosine in 1 minute under the test conditions.

Proteinase K

B

lyophilized
from *Tritirachium album*

M = 27000 g/mol
CAS-No.: 39450-01-6
HS-No.: 35079090
EC-No.: 254-457-8

Storage: 2-8°C
LGK: 10 - 13

WGK: 1
Danger
H334-H315-H319-H335
P304+P341-P342+P311-
P305+P351+P338-P302+P352-P260



Solubility (20°C) soluble (H₂O)

Specification:

DNases/RNases not detectable
Activity/mg min. 30 mAnsonU
Appearance white
pH (1 %; H₂O; 20°C) 6.2 - 6.8

Order-No.	Quantity
A3830,0025	25 mg
A3830,0100	100 mg
A3830,0500	500 mg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*: Greene Publishing & Wiley-Interscience, New York
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition page B16. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(3) Müller, A. et al. (1994) *J. Biol. Chem.* **269**, 23108-23111
(4) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

Crystall structure of calcium-free proteinase K with a resolution of 1.5 Å.
Small and large scale phenol extractions.

Comment: Proteinase K belongs to the family of subtilisin-like serine proteases. It has an endo- and exoproteolytic activity. Activated by calcium (1 - 5 mM), the enzyme digests proteins preferentially after hydrophobic amino acids (aliphatic, aromatic and other hydrophobic amino acids). Proteins will be completely digested, if the incubation time is long and the protease concentration high enough. Upon removal of the calcium ions, the stability of the enzyme is reduced, but the proteolytic activity remains (3). Proteinase K has two binding sites for Ca²⁺, which are located close to the active center, but are not directly involved in the catalytic mechanism. Removal of the Ca²⁺-ions reduces the catalytic activity of proteinase K by 80 %. The residual activity is sufficient to digest proteins, which usually contaminate nucleic acid preparations. Therefore, the digest with proteinase K for the purification of nucleic acids is performed in the presence of EDTA (inhibition of magnesium-dependent enzymes). Is the presence of Ca²⁺ required, Ca²⁺ is added up to a concentration of 1 mM and is removed by the addition of EGTA (pH 8.0; final conc. 2 mM) later on. The pH-optimum is at 8, but the enzyme is active over a wide pH-range (pH 4.3 - 12). An elevation of the reaction temperature from 37°C to 50 - 60°C may increase the activity several times, like the addition of 0.5 - 1 % SDS. Temperatures above 65°C, trichloroacetic acid or the serine protease-inhibitors AEBSE, PMSF or DFP inhibit the activity. Proteinase K will not be inhibited by EDTA (see ref. 2), urea (1 - 4 M), SDS, citrate, iodoacetic acid or, interestingly, by other serine protease inhibitors like TLCK and TPCK. In case that proteinase K has to be inactivated, make sure, that the temperature is not below 95°C and the time not shorter than 10 minutes. A TCA-precipitation is well suited too.

Proteinase K is used for the destruction of proteins in cell lysates (tissue, cell culture cells) and for the release of nucleic acids, since it very effectively inactivates DNases and RNases. Some examples for applications: Purification of genomic DNA from bacteria (miniprep): Bacteria from a saturated liquid culture are lysed and proteins are removed by a digest with 100 µg/ml proteinase K for 1 h at 37°C (ref. 1 Suppl. 40 page 2.4.1); Whole-Mount *in situ* hybridization and determination of RNAs in vertebrate embryos and isolated organs: Digest of the sample with e. g. 10 µg/ml proteinase K for 15 minutes at room temperature; The period of the treatment and/or the concentration of the enzyme has to be optimized (ref. 1 Suppl. 35 page 14.9.3); Preparation of DNA from cells or tissue for PCR: Cells or tissue are incubated over night at 50°C with 100 µg/ml proteinase K (ref. 1 Suppl. 17 page 15.3.1); Isolation of vaccinia virus DNA: Digest the virus in a suspension with 2 mg/ml proteinase K for 4 h at 37°C (ref. 1 Suppl. 43 page 16.17.8); Before the phenol extraction for the purification of nucleic acids is performed, a digest with proteinase K may be introduced (50 - 200 µg/ml final concentration; 37°C for 30 minutes in the presence of SDS; ref. 4). We recommend a working concentration between 10 - 100 µg/ml.

Stability: Lyophilized proteinase K is stable at +4°C for at least 12 months. In solution, the stability is approx. 6 - 12 months at +4°C to -20°C. Stock solutions (10 - 20 mg/ml) may be prepared in 10 mM CaCl₂ or 50 mM Tris · HCl, pH 8.0; 1 mM CaCl₂ or 50 % Glycerol; 20 mM Tris · HCl, pH 7.4; 1 mM CaCl₂ or 50 % Glycerol; 50 mM Tris · HCl, pH 8.0; 1 mM CaCl₂.

Proteinase K - Solution

B

from *Tritirachium album*

HS-No.: 38220000

Storage: 2-8°C

Composition:

CaCl₂ · 2H₂O 1 mM
Glycerol (v/v) 40 %
Proteinase K 20 mg/ml
Tris · HCl (pH 7.5) 10 mM

Specification:

DNases/RNases not detectable
Proteinase K min. 600
mAnsonU/ml

Order-No.	Quantity
A4392,0001	1 ml
A4392,0005	5 ml
A4392,0010	10 ml

Protein determination with Bicinchoninic acid Micro Scale see Bicinchoninic acid Protein Assay Micro Page 138

Protein determination with Bicinchoninic acid see Bicinchoninic acid Protein Assay Page 138

Protein dye in the visible range see Proteo-Dye - Protein dyes Page 674

Protein dye with green fluorescence see Proteo-Dye - Protein dyes Page 674

Protein dye with red fluorescence see Proteo-Dye - Protein dyes Page 674

Protein kinase C inhibitor see Bisindolylmaleimide *BioChemica* Page 146

Protein Ladder see Electrophoresis Size Marker/Standard Protein Page 325

Protein Marker/Standard for Gel Electrophoresis see Electrophoresis Size Marker/Standard Protein Page 325

Proteo-Dye - Protein dyes

HS-No.: 38220000

Storage: 2-8°C
protected from light

Proteo-Dye Blue-Vis

B

Protein dye in the visible range

- 1 L is sufficient for approx. 30 minigels, since 3x reusable
- reversible staining of proteins
- detection limit 3 - 5 ng/mm²

Order-No.	Quantity
A6810,1000	1 L

Comment: Protocol for staining of gels with Proteo-Dye Blue-Vis: SDS-PAGE minigels (1 mm thickness, 10 % acrylamide, Tris-glycine buffer system) are treated for 1 hour with 30 % v/v methanol after electrophoresis to remove the excess of SDS and to fix the proteins in the gel matrix. The gels are stained for 2 hours in a volume of 100 ml Proteo-Dye Blue-Vis. After this, the gels are washed with acetate buffer (0.2 M; pH 4.5), containing 20 % v/v methanol for 90 - 120 minutes until the dark red background is reduced to a weak pink background in contrast to the blue protein bands. The gels are documented with the help of a video system (transilluminator 312 nm, white light plate) or on a scanner in the transmission mode.

Proteo-Dye Green-Fluo

B

Protein dye with green fluorescence

- 1 L is sufficient for approx. 30 minigels, since 3x reusable
- reversible staining of proteins
- detection limit 3 - 5 ng/mm²
- suitable for gels and for blots

Specification:

Emission maximum 520 nm
Excitation wave length 365 nm

Order-No. Quantity
A6794,1000 1 L

Comment: Proteo-Dye Green-Fluo is a fluorescence protein dye, based on a metal-chelate complex in conjunction with a detergent in submicellar concentration in an aqueous solution. This dye solution enables to detect very small amounts of proteins and the staining is fully reversible. Use the dye solution up to three times!

Protocol for staining of gels with Proteo-Dye Green-Fluo: SDS-PAGE minigels (5x8 cm; 1 mm thickness, 10% acrylamide, Tris-glycine buffer system) are postelectrophoretically treated for 30 minutes with a methanol solution (30 %, v/v) while gently shaking (100 rpm). After this, the gels are stained for 2 hours in a volume of 100 ml Proteo-Dye Green-Fluo. Reduction of the background fluorescence is achieved by repeated washing steps (3 - 4 times, 30 min. each) with 30 % v/v methanol. The gels are documented with a video system (transilluminator 365 nm, adapting filter 530 nm).

Protocol for staining of blots with Proteo-Dye Green-Fluo: By staining with Coomassie or silver the proteins in the gel become irreversibly denaturated and are difficult to transfer to blotting membranes. Metal chelate staining methods are reversible, resulting in good preconditions for the following blot transfer. Blots were performed by a typical semi-dry method. After the blotting process, the blots were washed in distilled water for 1 hour and dried at room temperature. Blots were then stained with Proteo-Dye Green-Fluo for 2 hours, briefly washed in 30 % v/v ethanol and dried again. Only in the dried state, intensely green fluorescent protein bands become visible in UV top light (365 nm UV light) and are documented with a video system (adapting filter 530 nm). The stain may be easily and fastly removed just by rinsing in 30% v/v ethanol.

Proteo-Dye Red-Fluo

B

Protein dye with red fluorescence

- 1 L is sufficient for approx. 30 minigels, since 3x reusable
- reversible staining of proteins
- detection limit 1 - 3 ng/mm²
- more sensitive than most other products available in the market

Specification:

Emission maximum 630 nm
Excitation wave length 312 nm

Order-No. Quantity
A6803,1000 1 L

Comment: Protocol for staining of gels with Proteo-Dye Red-Fluo: SDS-PAGE minigels (5x8 cm, 1 mm thickness, 10 % acrylamide, Tris-glycine buffer system) are fixed for 30 minutes in a solution of 7.5 % v/v acetic acid, 20 % v/v ethanol. After this, the gels are stained with Proteo-Dye Red-Fluo (100 ml) for 2 - 3 hours. The background fluorescence can be removed by repeated washing with the fixation solution (7.5 % v/v acetic acid, 20 % v/v ethanol; 3 - 4 washing steps, 30 minutes each). The documentation of the gels is carried out with a video system (transilluminator 312 nm, adapting filter 590 nm).

Proteo-Dye RuBPS

B

Ruthenium(II) tris(bathophenanthroline disulfonate) tetrasodium salt

$C_{72}H_{42}N_6Na_4O_{18}RuS_6$
 $M = 1664.58$ g/mol
CAS-No.: 301206-84-8

Specification:

λ_{max} Emission 617 nm
 λ_{max} Excitation 277, 437, 460 nm
Concentration (in H₂O) 1 mM

Order-No. Quantity
A7808,0001 1 ml

Comment: RuBPS is a fluorescence dye for protein detection in e.g. SDS- and 2-D-gels. It provides the high sensitivity of silver staining without its drawbacks. The excellent contrast, good linearity and homogeneity made this dye the staining reagent of choice in proteomics. A minimal interference with MALDI-TOF analysis is observed and compatibility with MS/MS analysis is given. The photochemically stable dye is excited with UV-light of the wavelength 473/488 nm blue laser. A 532 nm laser may be used as well, albeit with reduced efficiency. It is of advantage that the excitation wavelength of RuBPS is longer than those of the aromatic amino acids. The information given in terms of formula, molecular weight and CAS number refer to the raw material! The concentrate supplied is diluted 1 : 1000 (1 ml ad 1 L) with water resulting in an 1 µM working solution.

Protease

B

suitable as an additive to media; peptic digest of animal tissue

HS-No.: 35040090

Storage: RT

Specification:

Ash max. 20 % pH (1 %; H₂O) 6.0 - 7.5 (20°C)
Nitrogen (NH₂) min. 2.8 % NaCl max. 6 %
Total N min. 12 %

Order-No. Quantity
A2216,0100 100 g
A2216,0250 250 g

PSA see Prostate specific Antigen (PSA), human Page 671

PSA-ACT see Prostate specific Antigen - α_1 -Antichymotrypsin Complex, human Page 671

Pseudohypericin HPLC grade

B

from *Hypericum perforatum*

$C_{30}H_{16}O_9$
 $M = 520.43$ g/mol
CAS-No.: 55954-61-5
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97%

Order-No.

A2068,0005

A2068,0010

Quantity

5 mg

10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Psp DNA Polymerase

B

from *Pyrococcus spec.*

HS-No.: 35079090

Storage: -20°C

- supplied with reaction buffer (10X)
- Substitute for the very similar *Pfu* DNA polymerase.
- supplied with Magnesium sulfate and Magnesium chloride solutions

Specification:

Concentration 5000 Units/ml

Order-No.

A5221,0500

A5221,2500

Quantity

500 U

2500 U

Comment: *Psp* DNA Polymerase is a thermostable enzyme isolated from *Pyrococcus species*. The enzyme is quite similar to *Pfu* DNA Polymerase. It replicates DNA at 75°C, catalyzing the polymerization of nucleotides into duplex DNA in the 5' → 3' direction. *Psp* DNA Polymerase possesses 3' → 5' exonuclease (proofreading) activity. Base misinsertions that may occur during polymerization are excised by the proofreading activity of the enzyme. *Psp* DNA Polymerase is recommended for use in PCR and primer extension reactions that require high-fidelity synthesis. *Psp* DNA polymerase-generated PCR fragments are blunt-ended. The supplied buffers (10X) are either **incomplete** 200 mM Tris · HCl (pH 8.8), 100 mM KCl, 100 mM (NH₄)₂SO₄, 1.0 % Triton® X-100, 1 mg/ml nuclease-free BSA or **complete** 200 mM Tris · HCl (pH 8.8), 100 mM KCl, 100 mM (NH₄)₂SO₄, 20 mM MgSO₄, 1.0 % Triton® X-100, 1 mg/ml nuclease-free BSA, one tube with MgCl₂ (100 mM) and one tube MgSO₄ (25 mM).

Pteroyl-L-glutamic acid see Folic acid crystalline Page 354

Purimycin see Puromycin dihydrochloride *BioChemica* Page 676

6-Purinethiol see Mercaptopurine monohydrate *BioChemica* Page 529

Puromycin aminonucleoside *BioChemica*

B

semisynthetic from Puromycin

$C_{12}H_{18}N_6O_3$
 $M = 294.31$ g/mol
CAS-No.: 58-60-6
HS-No.: 29419000
EC-No.: 200-388-3

Storage: 2-8°C

Melting point 218 - 222°C

Specification:

Assay approx. 98 %
Solubility (10 mg/ml H₂O) ... clear, colorless

Order-No.

A7941,0010

A7941,0050

Quantity

10 mg

50 mg

Puromycin dihydrochloride *BioChemica*

B

Purimycin

$C_{22}H_{29}N_7O_5 \cdot 2HCl$
 $M = 544.44$ g/mol
CAS-No.: 58-58-2
HS-No.: 29419000
EC-No.: 200-387-8

Storage: 2-8°C
LGK: 10 - 13

Warning

H302

P330-P264-P301+P312


Specification:

Assay min. 98 %
IR-Spectrum complies
Solubility (5 %; H₂O) clear, colorless

Order-No.

A2856,0005

A2856,0010

A2856,0025

A2856,0100

Quantity

5 mg

10 mg

25 mg

100 mg

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition Page 16.49 + 17.65. CSHL Press, Cold Spring Harbor, NY.

(2) De La Luna, S. & Ortin, J. (1992) *Methods Enzymol.* **216**, 376-385 *pac*-Gen as Efficient Dominant Marker and Reporter Gene in Mammalian Cells.

Comment: Puromycin is an aminonucleoside antibiotic from *Streptomyces alboniger*. It is an analogon to aminoacyl-tRNA and inhibits the protein synthesis by termination of the peptidyl transfer at the ribosomes in prokaryotes and eukaryotes. The antibiotic inhibits the growth of gram positive bacteria and different animal cells. Fungi and gram negative bacterias are resistant, since puromycin cannot pass the cell wall. The discovery of the puromycin-N-acetyltransferase (PAC) in a *Streptomyces*-stem allowed to employ the antibiotic as a selection marker, comparable to neomycin. The working concentration is for mammalian cells depending on the cell line between 1 and 50 µg/ml. Stock solutions of puromycin (10 mg/ml) can be prepared in HEPES buffer and are stored at +4°C or -20°C (improves stability) up to one year.

Purpuric acid ammonium salt see Murexide (C.I. 56085) Page 553

Putrescin dihydrochloride

B

1,4-Diaminobutane dihydrochloride

C₄H₁₂N₂ · 2HCl
M = 161.08 g/mol
CAS-No.: 333-93-7
HS-No.: 29212900
EC-No.: 206-375-9

Storage: RT
LGK: 10 - 13
Disposal: 3

hygroscopic

Solubility (5 %; H₂O) : clear, colorless
Thermal dec. : 280°C

Specification:

Assay (titr.) : min. 98 %
Loss on drying : max. 3 %

Order-No.	Quantity
A2217,0010	10 g
A2217,0025	25 g
A2217,0100	100 g

PVDF - Transfer membran see Transfer Membranes: Nitrocellulose, Nylon, PVDF Page 825

PVP see Polyvinylpyrrolidone Page 634

PVPP see Polyvinylpyrrolidone insoluble *BioChemica* Page 633

Pyocyanin coeruleum see Crystal violet (C.I. 42555) Page 247

Pyridine

Boiling point : 115°C
Density (d 25°C/4°C) : 0.983
Melting point : -41°C
n 20°C/D : 1.5092

C₅H₅N
M = 79.10 g/mol
CAS-No.: 110-86-1
HS-No.: 29333100
EC-No.: 203-809-9

Storage: RT
LGK: 3 A
Disposal: 5

Class / PG: 3/II
UN1282
WGK: 2
Danger
H302-H225-H312-H332
P233-P302+P352-P210



Pyridine dried, p. A.

C

Specification:

Assay (HPLC) : min. 99.8 %
Non-volatile matter : max. 0.0002 %
Water (K.F.) : max. 0.01 %

Order-No.	Quantity
A2419,0500	500 ml
A2419,1000	1 L

◆ This product contains molecular sieve as a drying agent!

Pyridine p. A.

C

Specification:

Assay (HPLC) : min. 99.5 %
Piperidine (GC) : max. 0.01 %
Water (K.F.) : max. 0.1 %
Chloride : max. 0.0005 %
Sulfate : max. 0.0005 %
Al : max. 0.00005 %

Ca : max. 0.00005 %
Cu : max. 0.00002 %
Fe : max. 0.00001 %
Mg : max. 0.00001 %
Ni : max. 0.00002 %
Pb : max. 0.00001 %
Zn : max. 0.00001 %

Order-No.	Quantity
A0776,0250	250 ml
A0776,0500	500 ml
A0776,1000	1 L
A0776,10006	6 x 1 L
A0776,2500	2.5 L

Pyridine for synthesis

C

Specification:

Assay (HPLC) : min. 99 %
Water (K.F.) : max. 0.1 %

Order-No.	Quantity
A4786,1000	1 L
A4786,10006	6 x 1 L
A4786,2500	2.5 L
A4786,25004	4 x 2,5 L

Pyridine D₅

C

Boiling point : 114°C
Density (d 25°C/4°C) : 1.05
Melting point : -41°C

C₅D₅N
M = 84.13 g/mol
CAS-No.: 7291-22-7
HS-No.: 28459010
EC-No.: 230-720-2

Storage: RT
LGK: 3 A
Disposal: 5

Class / PG: 3/II
UN1282
WGK: 2
Danger
H312-H332-H302-H225
P302+P352-P210-P233



Specification:

Deuteration degree : min. 99.5 %

Order-No.	Quantity
DS-16,0001	1 ml
DS-16,0005	5 ml

Pyridine 3-carboxylic acid see Nicotinic acid pure Ph. Eur., USP Page 567

3-(1-Pyridino)-1-propanesulfonate

B

1-(3-Sulfopropyl)-pyridinium betaine,
PPS, Non-Detergent Sulfobetaine 201,
NDSB-201

C₉H₁₁NO₃S
M = 201.24 g/mol
CAS-No.: 15471-17-7
HS-No.: 29333999
EC-No.: 239-491-3

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 2

Melting point : 275 - 277°C

Specification:

Assay (from N) : min. 97 %
Solubility (2 %; H₂O) : clear

Order-No.	Quantity
A4215,0050	50 g
A4215,0250	250 g

Pyridoxal hydrochloride *BioChemica*

B

2-Methyl-3-hydroxy-4-formyl-5-hydroxy-methylpyridine hydrochloride

$C_8H_9NO_3 \cdot HCl$
 $M = 203.63$ g/mol
CAS-No.: 65-22-5
HS-No.: 29362500
EC-No.: 200-602-5

Storage: RT
protected from light
LGK: 10 - 13

Solubility (25°C) 500 g/L (H₂O)

Specification:

Assay (titr.) min. 99 %
pH (10 %; H₂O) 1.5 - 2.5
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A0960,0005	5 g
A0960,0025	25 g

Pyridoxal 5'-phosphate *BioChemica*

B

Melting point (dec.) ... approx. 140°C
Solubility (20°C) 5 g/L (H₂O)

$C_8H_{10}NO_6P$
 $M = 247.16$ g/mol
CAS-No.: 54-47-7
HS-No.: 29362500
EC-No.: 200-208-3

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Specification:

Assay min. 98 %
Heavy metals (as Pb) max. 0.002 %
Identity (IR) complies
pH (0.25 %; H₂O; 20°C) approx. 3.0
Free Phosphates max. 1 %
Loss on drying max. 0.5 %

Order-No.	Quantity
A3831,0005	5 g
A3831,0025	25 g

Comment: In aqueous solutions stable for several weeks; store solutions at +4°C in the dark.

Pyridoxin hydrochloride

Solubility (25°C) 220 g/L (H₂O)

$C_8H_{11}NO_3 \cdot HCl$
 $M = 205.64$ g/mol
CAS-No.: 58-56-0
HS-No.: 29362500
EC-No.: 200-386-2

Storage: RT
protected from light
LGK: 10 - 13

WGK: 1

Pyridoxin hydrochloride *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A0957,0025	25 g
A0957,0100	100 g

Pyridoxine hydrochloride pure Ph. Eur., USP



C

Specification:

Assay (titr., calc. on dried substance) 99.0 - 101.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %
Identity complies
Loss on drying max. 0.5 %
Related subst. complies
Sulfated ash max. 0.1 %
pH (5 %; H₂O) 2.4 - 3.0
Chloride 16.9 - 17.6 %

Order-No.	Quantity
A8093,0025	25 g
A8093,0100	100 g

Pyridoxol hydrochloride see Pyridoxin hydrochloride Page 678

3-(2-Pyridylthio)-propionic acid N-succinimide ester see SPDP Page 759

Pyrogallol pure

C

1,2,3-Trihydroxybenzene

$C_6H_6O_3$
 $M = 126.11$ g/mol
CAS-No.: 87-66-1
HS-No.: 29072900
EC-No.: 201-762-9

Storage: RT
LGK: 10-13
Disposal: 3

Class / PG: 6.1/III
UN2811
WGK: 2
Danger
H332-H302-H412-H312-H341
P273-P308+P313-P201



Melting point 131 - 135°C

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.001 %
Sulfated ash max. 0.05 %
pH (5 %; H₂O) 4 - 5
Chloride max. 0.005 %

Order-No.	Quantity
A2802,0100	100 g
A2802,0250	250 g

Pyrogallol red

B

Pyrogallolsulfonephthalein, Sulfogalleine

$C_{19}H_{12}O_8S$
 $M = 400.36$ g/mol
CAS-No.: 32638-88-3
HS-No.: 29349990
EC-No.: 251-134-3

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3

Solubility (20°C) soluble (H₂O)

Specification:

λ_{max} (50 % EtOH) 502 - 510 nm
Loss on drying max. 5 %
UV spectrum complies

Order-No.	Quantity
A3932,0001	1 g
A3932,0005	5 g

Literature: (1) Aguilar, R.M. et al. (1999) *Anal. Biochem.* **267**, 344-350

Precipitation of diluted protein samples (ng/ml) for the removal of interfering substances for SDS-PAGE.

Pyrogallolsulfonephthalein see Pyrogallol red Page 678

L-Pyroglutamic acid β -naphthylamide

B

*N*¹-(2-Naphthyl)-L-pyroglutamic acid

$C_{15}H_{14}N_2O_2$
M = 254.30 g/mol
 CAS-No.: 22155-91-5
 HS-No.: 29337900
 EC-No.: 244-809-9

Storage: 2-8°C

Warning
 H302
 P305+P351+P338-P260



Specification:

Assay min. 99 %

Order-No.	Quantity
A4680,0250	250 mg
A4680,0001	1 g

Pyronin G see Pyronin Y (C.I. 45005) Page 679

Pyronin Y (C.I. 45005)

B

Pyronin G

$C_{17}H_{19}ClN_2O$
M = 302.80 g/mol
 CAS-No.: 92-32-0
 HS-No.: 32129000
 EC-No.: 202-147-8

Storage: RT
 LGK: 10 - 13

Melting point 250 - 260°C

Specification:

Assay (from C) min. 95 %
 λ_{max} (50 %, EtOH) 546 - 551 nm
 E 1 %/1 cm, λ_{max} 2650 - 3160
 Loss on drying (110°C) max. 5 %

Order-No.	Quantity
A1406,0005	5 g
A1406,0010	10 g
A1406,0025	25 g

Literature: (1) Grossbach, U. & Weinstein, I.B. (1968) *Anal. Biochem.* **22**, 311-320
 (2) Darzynkiewicz, Z. (1990) *Methods Cell Biol.* **33**, 285-298
 (3) Kapuscinski, J. & Darzynkiewicz, Z. (1987) *Cytometry* **8**, 129-137
 (4) Darzynkiewicz, Z. et al. (1987) *Cytometry* **8**, 138-145
 (5) Traganos, F. et al. (1988) *Exp. Cell Res.* **179**, 535-544

Separation of ribonucleic acids by polyacrylamide gel electrophoresis.
 Differential staining of DNA and RNA in cells and nuclei with acridine orange.
 Interactions of Pyronin Y(G) with Nucleic acids.
 Application of Pyronin Y(G) in Cytochemistry of Nucleic acids.
 Staining with Pyronin Y Detects Changes in Conformation of RNA during Mitosi and Hyperthermia of CHO Cells.

L-2-Pyrrolidinecarbonic acid see L-Proline Page 663

Pyruvic acid

2-Oxopropionic acid, α -Ketopropionic acid

$C_3H_4O_3$
M = 88.06 g/mol
 CAS-No.: 127-17-3
 HS-No.: 29183000
 EC-No.: 204-824-3

Storage: 2-8°C
 LGK: 8 B
 Disposal: 4

Class / PG: 8/III
 UN3265
 WGK: 1
 Danger
 H314
 P305+P351+P338-P301+P330+P331-
 P310-P309-P280



Boiling point 165°C

Density (d 20°C/4°C) .. 1.256

Melting point 12°C

n 20°C/D 1.4280

Pyruvic acid BioChemica

B

Specification:

Assay (titr.) min. 98.5 %
 pH (1 %; H₂O) 1.0 - 1.5
 Water (K.F.) max. 1 %

Order-No.	Quantity
A3473,0100	100 ml
A3473,0500	500 ml

Pyruvic acid for synthesis

C

Specification:

Assay (titr.) min. 98 %
 Water (K.F.) max. 1.5 %

Order-No.	Quantity
A0770,0100	100 ml
A0770,0500	500 ml

Pyruvic acid sodium salt see Sodium pyruvate Page 750

qPCR test kit for the mycoplasma detection see qPCR Mycoplasma Test Kit Page 598

Quantitation of proteins see Bicinchoninic acid Protein Assay Page 138

Quercetin HPLC grade

B

Meletin, 3,3',4',5,7-Pentahydroxyflavone
synthetic from Rutin

$C_{15}H_{10}O_7$
 $M = 302.24$ g/mol
CAS-No.: 117-39-5
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Class / PG: 6.1/III
UN2811
Danger
H301
P301+P310



Specification:

Assay min. 99 %

Order-No.	Quantity
A3415,0020	20 mg
A3415,0020DOC	20 mg
A3415,0050	50 mg
A3415,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point, elemental analysis. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Quercetin-3- β -D-galactoside see Hyperosid Page 431
Quercetin-3-glucoside see Isoquercitrin Page 466
Quercetin-4'-glucoside see Spiraeoside HPLC grade Page 760
Quercetin-3-rhamnoside see Quercitrin HPLC grade Page 680
Quercetin-3-rutinoside see Rutin HPLC grade Page 694

Quercitrin HPLC grade

B

Quercitroside, Quercetin-3-rhamnoside
from *Aesculus hippocastanum*

$C_{21}H_{20}O_{11}$
 $M = 448.38$ g/mol
CAS-No.: 522-12-3
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A2069,0010	10 mg
A2069,0010DOC	10 mg
A2069,0020	20 mg
A2069,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$ (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Quercitroside see Quercitrin HPLC grade Page 680

Quinaldine red

C

Transition interval pH 1.4 - 3.2 (colorless - rose)

$C_{21}H_{23}IN_2$
 $M = 430.32$ g/mol
CAS-No.: 117-92-0
HS-No.: 29334990
EC-No.: 204-221-5

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

λ_{max} (50 % acetic acid) 528 - 533 nm
Loss on drying max. 5 %
UV spectrum complies to standard

Order-No.	Quantity
A2322,0001	1 g
A2322,0005	5 g
A2322,0025	25 g

Quinaldine red - Solution

C

Ready-to-use indicator solution in 60 % ethanol

HS-No.: 38220000

Storage: RT
LGK: 3 A

Class / PG: 3/III
UN1993
Danger
H225
P210



Composition:

Quinaldine red (A2322) 0.1 %

Order-No.	Quantity
A2343,0100	100 ml
A2343,0500	500 ml

Quinoline for synthesis

C

C₉H₇N
M = 129.16 g/mol
CAS-No.: 91-22-5
HS-No.: 29334990
EC-No.: 202-051-6

Storage: RT
LGK: 6.1 A
Disposal: 3

Class / PG: 6.1/II
UN2656
WGK: 2
Danger
H411-H302-H341-H319-H312-H315-
H350
P273-P302+P352-P308+P313-P201-
P305+P351+P338



Specification:

Assay (HPLC) min. 95 %
Identity (IR) complies
Refractive index (20°C, 589 nm)
..... 1.6230 - 1.6270

Loss on drying max. 0.2 %

Order-No.	Quantity
A4688,0250	250 ml
A4688,1000	1 L
A4688,10006	6 x 1 L

Quinoline yellow

C

C₁₈H₉NNa₂O₈S₂
M = 477.38 g/mol
CAS-No.: 8004-92-0
HS-No.: 32041200
EC-No.: 305-897-5

Storage: RT
LGK: 10 - 13
Disposal: 3

Warning
H315-H319-H335
P280-P305+P351+P338-P262



Specification:

λ_{max} (0.001 %; 10 % Acetic acid)
..... 409 - 415 nm
Insoluble matter max. 0.5 %
UV spectrum complies

Order-No.	Quantity
A4292,0010	10 g
A4292,0025	25 g
A4292,0100	100 g

8-Quinolol see 8-Hydroxyquinoline Page 428

p-Quinone see p-Benzoquinone for synthesis Page 134

Radical BioChemica

B

Monorden
from *Humicola fuscoatra*

C₁₈H₁₇ClO₆
M = 364.78 g/mol
CAS-No.: 12772-57-5
HS-No.: 29329900

Storage: -20°C
protected from light

Class / PG: 6.1/II
UN2811
Danger
H319-H340-H301-H315-H335-H350
P308+P313-P305+P351+P338-
P301+P310-P261-P201



Melting point 190 - 194°C
Solubility (20 mg/ml DMSO)
..... clear, colorless

Specification:

Assay approx. 98 %
λ_{max} 211, 265 nm

Order-No.	Quantity
A7900,0001	1 mg
A7900,0005	5 mg

Comment: Radical is a macrolactone antibiotic. It inhibits tyrosine kinases and displays anti-angiogenic activity. Radical is soluble in DMSO, methanol and ethanol.

D(+)-Raffinose pentahydrate BioChemica

B

Meltilose, Melitriose

C₁₈H₃₂O₁₆ · 5H₂O
M = 594.53 g/mol
CAS-No.: 17629-30-0
HS-No.: 29400000
EC-No.: 208-146-9

Storage: RT

WGK: 1

Melting point 80°C

Specification:

Assay min. 98.0 %
α_{20°C/D}; 4 %, NH₃ + H₂O ... +104° ± 2°
Heavy metals (as Pb) max. 0.001 %

Sulfated ash max. 0.05 %
Water (K.F.) 14.0 - 16.0 %

Order-No.	Quantity
A6882,0025	25 g
A6882,0100	100 g

Rakoff staining solution for microscopy



C

HS-No.: 38220000

Storage: RT

WGK: 1

Composition:

Eosin Y (C.I. 45380) 0.17 g/L
Light Green SF, yellowish (C.I. 42095)
..... 4.15 g/L

Order-No.	Quantity
A8112,0015	15 ml
A8112,0250	250 ml

Random Primer DNA Labeling Mix

B

1 vial labeling mix for 25 labeling assays

HS-No.: 38220000

Storage: -20°C

Avoid repeated changes in the solution temperature!

Shipment: wet ice

- A one-step premixed solution for the labeling of DNA with radiolabeled dCTP using random nonprimer oligonucleotides.
- Labeling obtained within 10 minutes!

Order-No.	Quantity
A3746,0025	100 µl

Literature: (1) Feinberg, A.P. & Vogelstein, B. (1983) *Anal. Biochem.* **132**, 6-13
 (2) Feinberg, A.P. & Vogelstein, B. (1984) *Anal. Biochem.* **137**, 266-267
 (3) Grunstein, M. & Hogness, D.S. (1975) *Proc. Natl. Acad. Sci. USA* **72**, 3961-3965
 (4) Clark, J.M. *et al.* (1987) *J. Mol. Biol.* **198**, 123-127

Technique for radiolabeling of restriction endonuclease fragments.
 Addendum to Ref. 1

New 'blunt end' addition reaction catalyzed by DNA Polymerase I from *E. coli*.

Comment: The use of a "random primed" DNA sequence to prime DNA synthesis was originally introduced by Feinberg and Vogelstein (1, 2). The method is based on the hybridization of oligonucleotides of all possible sequences to the denatured template DNA to be labeled. The complementary DNA strand is synthesized by a Klenow fragment of DNA Polymerase I, using the random oligonucleotides as primers. By substituting a radiolabeled nucleotide for a non-radioactive equivalent in the reaction mixture, the newly synthesized complementary DNA is made radioactive.

The labeling mix system is a specially developed reaction mixture for enhanced convenience and performance. The reaction mixture contains random oligonucleotides, a Klenow fragment of DNA Polymerase I, dATP, dGTP, dTTP and a reaction buffer concentrate. The DNA labeling mix allows the labeling of the template DNA to a specific activity of 2x10⁸ dpm/µg after only 10 minutes of incubation. This rapid labeling is accomplished with the use of the Klenow fragment, which lacks 5'-3' exonuclease activity, and by the use of nonamer primers giving more efficient priming from the template at 37°C. The labeling mix method enables the labeling of small amounts of DNA (10 - 20 ng), such as restriction fragments isolated from gels. Fragments can be labeled directly in low melting temperature agarose gel slices. The labeled probes are used in various hybridization techniques, such as Southern and Northern blots, *in-situ* hybridization and screening of gene libraries. A detailed application protocol is supplied.

recombinant Human RANKL see rHu RANKL Page 682

recombinant Mouse RANKL see rM RANKL Page 683

rHu RANKL bioconfident grade



B

Sterile filtered through a 0.2 µm filter.

Lyophilized from PBS, pH 7.2.

from *Hordeum vulgare*

M = 21.9 kDa

HS-No.: 29371900

Storage: -20°C

Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
 Endotoxin (LAL test) max. 0.05 EU/µg
 Pyrogen test (MAT) complies
 Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8902,0010	10 µg
A8902,0050	50 µg
A8902,0100	100 µg
A8902,1000	1 mg

Comment: Recombinant human RANKL contains 176 amino acids and a 16 amino acid histidine-based tag for a total length of 192 amino acids and has a predicted molecular mass of 21.9 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 30 kDa in SDS-PAGE.

rHu RANKL



B

rHu TNFSF11, rHu TRANCE, rHu soluble Rank Ligand, recombinant Human RANKL, rHu sRANKL

lyophilized from 1 mg/ml solution containing 10 mM Tris, pH 7.6 and 50 mM NaCl

from *E. coli*

M = 20.01 kDa

HS-No.: 29371900

Storage: -20°C

Specification:
 Assay (RP-HPLC) min. 98 %
 Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8283,0002	2 µg
A8283,0010	10 µg
A8283,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
 Recombinant Human soluble RANKL is a single, non-glycosylated polypeptide chain containing 176 amino acids.

rM RANKL



B

recombinant Mouse RANKL,
recombinant Mouse sRANKL, rM
TRANCE, rM TNFSF11, rM Soluble
RANK Ligand
lyophilized from 10 mM sodium
phosphate, pH 7.5 and 50 mM NaCl
from *E. coli*

M = 19.9 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8239,0002	2 µg
A8239,0010	10 µg
A8239,0100	100 µg

Comment: RANK Ligand occurs in 3 forms: cell-bound RANKL, which is expressed by osteoblast lineage cells, soluble RANKL, which is expressed by activated T lymphocytes, and a truncated ectodomain form derived from the cell-bound RANK Ligand, which is enzymatically processed by TACE. All three forms stimulate their specific receptor, RANK, which is located on osteoclastic and dendritic cells. RANK Ligand is critically involved in osteoclastic function, and in the regulation of specific immunity. Recombinant Mouse RANKL is approximately 19.9 kDa and contains 176 amino acids.

rM Soluble RANK Ligand see rM RANKL Page 683
rHu soluble Rank Ligand see rHu RANKL Page 682
recombinant Human RANTES see rHu RANTES Page 683
recombinant Mouse RANTES see rM RANTES Page 683

rHu RANTES



B

recombinant Human RANTES, CCL5
lyophilized without additives
from *E. coli*

M = 7.81 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute with 20 mM HCl at a concentration of 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8275,0005	5 µg
A8275,0020	20 µg
A8275,0100	100 µg

Comment: Recombinant Human RANTES ("regulated upon activation, normal T cell expressed and secreted") produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 68 amino acids and having a molecular mass of 7.81 kDa.

rM RANTES



B

recombinant Mouse RANTES
lyophilized without additives
from *E. coli*

M = 7.88 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8251,0005	5 µg
A8251,0025	25 µg
A8251,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
Recombinant Mouse RANTES is a single, non-glycosylated polypeptide chain containing 68 amino acids.

RAPA see Rapamycin *BioChemica* Page 683
Rapamune see Rapamycin *BioChemica* Page 683

Rapamycin BioChemica

B

Sirolimus, RPM, Antibiotic AY 22989,
RAPA, Rapamune
from *Streptomyces hygroscopicus*

C₅₁H₇₉NO₁₃
M = 914.17 g/mol
CAS-No.: 53123-88-9
HS-No.: 29349990

Storage: -20°C
protected from light
hygroscopic

Melting point 178 - 182°C

Specification:

Assay min. 95 %
λ_{max} 265, 277, 287 nm

Order-No.	Quantity
A7663,0001	1 mg

Comment: Rapamycin is a triene macrolide antibiotic from *Streptomyces hygroscopicus*. It is getting more and more important, due to its application as an immunosuppressant in organ transplantation and in the treatment of certain tumors (induction of tumor-specific thrombosis). Rapamycin binds to FKBP12 (FK506-Binding Protein 12) with a cell and this complex binds to the serine/threonine kinase mTOR (mammalian Target Of Rapamycin). mTOR is a member of the family of Phosphatidylinositol-3-Kinases. By binding to this target, an important molecule in several signal transduction pathways, many cellular events are affected. This includes cell cycle arrest of e.g. T cells, inhibition of protein and DNA synthesis, as well as antibody production.

Solubility: Rapamycin is soluble in ether, chloroform, acetone, methanol, ethanol or DMSO, in water insoluble. Stock solutions are stored at -20°C (e.g. up to 50 mg/ml in ethanol).

RbCl see Rubidium chloride *BioChemica* Page 693
RBP see Retinol Binding Protein (RBP), human Page 685
Real Time-PCR Kit see qPCR Kit, DNA-free Page 597
Real Time-PCR Mastermix see qPCR Kit, DNA-free Page 597

Reciniferatoxin see Resiniferatoxin *BioChemica* Page 684
 Red blood cell - Lysis solution see DNA Isolation Kits Page 294
 Red-Gal™ see Rose-Gal *BioChemica* Page 691
 Red-Glucuro™ see Rose-Glucuro CHA salt *BioChemica* Page 692
 Red-Phos™ see Rose-Phos p-toluidine salt *BioChemica* Page 692
 Refill Buffer Set for DNA Isolation Spin Kits see maxXmore™ Page 518
 Regeneration Kit for DNA Binding Columns see maxXbond™ Page 517

Reinforced Clostridial (RCM-DRCM) Medium Base

C

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

Composition:

Agar 0.5 g/L
 Glucose 5.0 g/L
 L-Cysteine · HCl 0.5 g/L
 Peptones 23.0 g/L
 Sodium acetate 3.0 g/L

Sodium chloride 5.0 g/L
 Starch 1.0 g/L

Specification:

pH before autoclaving
 approx. 6.8 (20°C)

Order-No.	Quantity
A5852,0500	500 g
A5852,5000	5 kg

◆ **Attention:** Please note that a supplement (A6791) exists for this agar. Please order separately.

Literature: (1) Hirsh & Grinstead (1954) *J. Dairy Res.* **21**, 101.
 (2) Gibbs & Freame (1965) *J. Appl. Bact.* **28**, 95.

Comment: This semi-solid medium is used for the cultivation and enumeration of anaerobes, especially *Clostridium* species.

Directions for RCM medium: Suspend 38 g in one litre of distilled water and boil to dissolve the medium completely. Distribute into final containers and sterilize by autoclaving at 121°C for 15 minutes.

Directions for DRCM medium: Suspend 19 g in 500 ml of distilled water and boil to dissolve the medium completely. Distribute into final containers and sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C. Dissolve the content of one vial of "DRCM Differential Supplement" (A6791) with 2.5 ml of distilled water and add one drop (50 µl) to each 10 ml of the medium aseptically, through a sterile filter. To double-strength medium, use double quantity (2 drops/10 ml). Store the prepared RCM medium at 2-8°C. Use the DRCM medium freshly.

Renardin see Senkirkin HPLC grade Page 709

Renin, human

B

Angiotensin forming enzyme
 [EC 3.4.23.15]
 supplied liquid in 50 mM sodium
 acetate, pH 6.0, 5 mM EDTA, 1 mM
 Benzamidine
 from human kidneys

M = 40,000 g/mol
 HS-No.: 38220000

Storage: 2-8°C

Specification:

Assay (Electrophoresis) min. 90 %
 Protein (Lowry) min. 0.1 mg/ml

Renin activity min. 1 U/ml (Plasma Renin Activity assay)

Order-No.	Quantity
A6982,00001	0.1 U

Comment: Reference methodology: Sealey, JE and Laragh JH. RIA of plasma Renin activity, *Seminars in Nuclear Medicine* 1975; Vol 5, pages 189-202 and Haber E et al, *Applications of RIA for angiotensin 1 to the physiological measurements of plasma Renin activity in normal human subjects*, *J Clin Endocrinol Metab* 1969; Vol 29, pages 1349-1355

Purification references: E. Haas *et al.*, *Archives of Biochemistry and Biophysics*, 110, 534-543 (1965) E.E. Slater *et al.*, *Journal of Biological Chemistry*, 25,6(15) 8164-8171 (1981)

Summary of Purification Process: Aqueous buffered extraction and clarified by centrifugation, Acidification and clarified by centrifugation; Precipitation by ammonium sulfate and dialysis; Absorption onto affinity agarose matrix and high salt eluted; Concentration via stirred cell and Gel Filtration column.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Resazurin sodium salt



C

C₁₂H₆NNaO₄
 M = 251.17 g/mol
 CAS-No.: 62758-13-8
 HS-No.: 29349990
 EC-No.: 263-718-5

Storage: RT

WGK: 3

Specification:

Assay min. 85 %
 λ_{max} (0.0005 %, H₂O) 597 - 603 nm
 Loss on drying max. 7 %

Order-No.	Quantity
A2830,0005	5 g
A2830,0010	10 g
A2830,0025	25 g

Resiniferatoxin *BioChemica*



B

TRX, Resiniferatoxin
 from *Euphorbia resinifera*

C₃₇H₄₀O₉
 M = 628.7 g/mol
 CAS-No.: 57444-62-9
 HS-No.: 29329900

Storage: -20°C

Class / PG: 6.1/III
 UN2811
 Danger
 H301-H314
 P310-P305+P351+P338-P280



Melting point 175 - 185°C

Specification:

Assay (TLC) approx. 97 %
 λ_{max} No UV absorption
 Appearance white crystalline

powder
 Solubility (10 mg/ml Dichloromethane;
 MeOH) clear, colorless

Order-No.	Quantity
A8644,0001	1 mg
A8644,0005	5 mg

Comment: Resiniferatoxin is insoluble in water, but soluble in Dichloromethane, Methanol, and Ethanol.

all-trans-Retinoic acid see Retinoic acid pure Ph. Eur. Page 685

Retinoic acid pure Ph. Eur.

B

all-trans-Retinoic acid, Vitamin A acid, ATRA, Tretinoin

$C_{20}H_{28}O_2$
 $M = 300.44$ g/mol
 CAS-No.: 302-79-4
 HS-No.: 29362100
 EC-No.: 206-129-0

Storage: 2-8°C
 protected from light

Warning
 H302-H411
 P273



Specification:

Assay (titr.) 98.0 - 102.0 %
 Heavy metals (as Pb) max. 0.002 %
 Identity complies
 Loss on drying max. 0.5 %

Related subst. complies
 Sulfated ash max. 0.1 %

Order-No.	Quantity
A6947,0100	100 mg
A6947,0250	250 mg
A6947,0001	1 g

Retinol Binding Protein (RBP), human

B

RBP
 lyophilized from 20 mM NH_4CO_3
 from human urine

HS-No.: 38220000

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A6983,0100	100 µg
A6983,0001	1 mg

Comment:Reconstitution: Use of a phosphate buffer above pH 7.0 containing 150 mM NaCl is recommended.

Certification: The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Retinyl acetate see Vitamin A acetate Page 856

Retrorsin HPLC grade

B

β-Longilobin, 12,18-Dihydroxysenecionan-11,16-dione
 from *Senecio retrorsus*

$C_{18}H_{26}NO_8$
 $M = 351.40$ g/mol
 CAS-No.: 480-54-6
 HS-No.: 29399900

Storage: 2-8°C

Class / PG: 6.1/II
 UN1544
 WGK: 3
 Danger
 H300-H373
 P301+P310-P260



Specification:

Assay min. 98 %

Order-No.	Quantity
A4922,0020	20 mg
A4922,0050	50 mg

Comment:Documents included: HPLC-DAD with UV spectrum.

Retrorsin-N-oxide HPLC grade



B

12,18-Dihydroxysenecionan-11,16-dione-4-oxide
 from *Senecio retrorsus*

$C_{18}H_{26}NO_7$
 $M = 367.40$ g/mol
 CAS-No.: 15503-86-3
 HS-No.: 29399900

Storage: 2-8°C

Class / PG: 6.1/II
 UN1544
 Danger
 H300-H373
 P260-P301+P310



Specification:

Assay min. 96 %

Order-No.	Quantity
A8668,0020	20 mg

Comment:Documents included: HPLC-DAD with UV spectrum

M-MuLV Reverse Transcriptase, RNase H minus

B

recombinant from E. coli from Moloney
 Murine Leukemia Virus

$M = 69$ kDa
 HS-No.: 38220000

Storage: -20°C

- supplied with reaction buffer (5X)
- Unit definition: see comment.

Specification:

Concentration 50000 - 200000 U/ml

Order-No.	Quantity
A5211,10000	10 KU
A5211,50000	50 KU

Comment:M-MuLV Reverse transcriptase, RNase H minus is purified from an *E. coli* strain harbouring a plasmid that directs the synthesis of a modified form of Moloney Murine Leukemia virus (M-MuLV) reverse transcriptase. M-MuLV reverse transcriptase is an RNA or DNA directed DNA polymerase. The enzyme can synthesize a complementary DNA strand initiating from a primer using either RNA (cDNA synthesis) or single stranded DNA as a template. This enzyme had been genetically altered to remove associated RNase H activity. Removal of the RNase H activity resulted in an increase of full-length cDNA products. The storage buffer contains 50 mM Tris · HCl (pH 8.3), 100 mM NaCl, 1 mM EDTA, 0.1 mM DTT, 0.1 % Triton X-100, 50 % glycerol. The recommended reaction buffer for RT-PCR (1X) is 50 mM Tris · HCl (pH 8.3 at 25°C), 2 - 8 mM $MgCl_2$, 10 mM DTT, 100 mM KCl (optional: 2 - 4 mM $MnCl_2$). The enzyme will be supplied with a 5X RT buffer "complete" (250 mM Tris · HCl, (pH 8.3); 500 mM KCl, 15 mM $MgCl_2$) and the 5X RT buffer "incomplete" (250 mM Tris · HCl (pH 8.3); 500 mM KCl and an extra tube $MgCl_2$ 100 mM).

Unit definition: One unit of activity is defined as the amount of enzyme required to incorporate 1 nmol of TTP into acid-insoluble DNA fraction in 10 minutes at 37°C using polyA-oligo(dT) as template and primer.

Reverse transcription buffer (10X)

B

HS-No.: 38220000

Storage: RT

Composition:

Potassium chloride 900 mM
Tris - HCl (pH 8.9) 100 mM

Order-No.
A5062,0001

Quantity
1 ml

N-(α -Rhamnopyranosylphosphono)-L-leucyl-L-tryptophan disodium salt see Phosphoramidon disodium salt *BioChemica* Page 624

L(+)-Rhamnose monohydrate *BioChemica*

B

6-Deoxy-L-mannose

 $C_6H_{12}O_5 \cdot H_2O$

Storage: RT

WGK: nwg

Melting point 85 - 95°C

M = 182.17 g/mol

LGK: 10 - 13

CAS-No.: 10030-85-0

HS-No.: 29400000

EC-No.: 222-793-4

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.001 %
Solubility (10 %; H_2O) clear, colorless
Sulfated ash max. 0.05 %

Water (K.F.) 9.5 $\pm$ 1 %
Chloride max. 0.005 %

Order-No.
A4336,0010
A4336,0050
A4336,0100

Quantity
10 g
50 g
100 g

Rhamnoxanthine see Frangulin A HPLC grade Page 363

Rhein

Cassinic acid, 1,8-Dihydroxyanthraquinone-3-carboxylic acid, *Monorhein*
 $C_{15}H_8O_6$

Storage: 2-8°C

Warning

M = 284.23 g/mol

LGK: 10 - 13

CAS-No.: 478-43-3

H315-H335-H319

HS-No.: 29189990

P261-P305+P351+P338



Rhein HPLC grade

B

from *Rheum palmatum*

Specification:

Assay min. 99 %

Order-No.
A2070,0020
A2070,0050
A2070,0100

Quantity
20 mg
50 mg
100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Rhein pure

B

Specification:

Assay min. 97 %

Order-No.
A3978,0250

Quantity
250 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Rheum-Emodin see Emodin HPLC grade Page 326

Rhinanthin see Aucubin HPLC grade Page 122

Rhodamine B (C.I. 45170)

B

Safranalin, Rosazein, Tetraethylrhodamin, *Brilliantrose*
 $C_{28}H_{31}ClN_2O_3$

Storage: RT

WGK: 2

M = 479.02 g/mol

LGK: 10 - 13

CAS-No.: 81-88-9

H318-H412

Solubility (20°C) 34 g/L (H_2O)

HS-No.: 32041300

P305+P351+P338-P260-P273

EC-No.: 201-383-9



Specification:

Assay (photometr.) min. 90 %
 λ_{max} (50 % EtOH) 550 - 552 nm
E 1 %/1 cm, λ_{max} 2115 - 2350

Loss on drying max. 5 %
UV/VIS spectrum complies
pH (0.5 %; H_2O ; 20°C) approx. 2.0

Order-No.
A3930,0025
A3930,0100

Quantity
25 g
100 g

Literature: (1) Jung, D.-W. et al. (1998) *Anal. Biochem.* **263**, 118-120

Detection of Proteins in Polyacrylamide Gels Using Eriochrome Black T and Rhodamine B.

Comment: The mixed-dye staining method of proteins in polyacrylamide gels with Eriochrome black T in combination with Rhodamine B can detect as little as 10 ng of BSA within one hour (1) and is more sensitive than Coomassie®-staining. The optimum dye concentration of Eriochrome Black T was determined to be 0.01 %. Protein bands were scanned at 560 nm by densitometer. Rhodamine B was employed at the same concentration (0.01 %). Staining solution was prepared by mixing stock solutions of Eriochrome Black T (0.02 % (w/v)) and Rhodamine B (0.02 % (w/v)) in 40 % methanol/7 % acetic acid in a ratio of 1 : 1 (v/v) just prior to use. Besides sensitivity, another advantage of the mixed-dye staining method over Coomassie® is the stability of the staining pattern after drying (60°C, 30 min; ref. 1).

Rhodamine 6G (C.I. 45160)

C

Basic Rhodamine Yellow, Basic Red 1

$C_{28}H_{31}ClN_2O_3$
 $M = 479.02$ g/mol
 CAS-No.: 989-38-8
 HS-No.: 32041300
 EC-No.: 213-584-9

Storage: RT
 LGK: 10 - 13

WGK: 2
 Warning
 H302
 P273-P305+P351+P338-P260



Specification:

Assay (TLC) ca. 95 %
 λ_{max} (50 % EtOH) 527 - 533 nm
 Loss on drying max. 2 %

Order-No.	Quantity
A5474,0025	25 g
A5474,0100	100 g

Comment: Rhodamine 6G is a fluorescent probe, which accumulates specifically in mitochondria of whole cells and is used extensively to visualize mitochondrial morphology.

Rhodesse see D(+)-Fucose *BioChemica* Page 365
 Ribitol see Adonitol *BioChemica* Page 69

Riboflavin

Vitamin B₂, Vitamin G, Lactoflavin

$C_{17}H_{20}N_4O_6$
 $M = 376.40$ g/mol
 CAS-No.: 83-88-5
 HS-No.: 29362300
 EC-No.: 201-507-1

Storage: RT
 protected from light
 LGK: 10 - 13
 Disposal: 3

Melting point ~280°C (dec.)
 Solubility (20°C) 0.065 g/L (H₂O)

Riboflavin *BioChemica*

B

Specification:

Assay (photometr.) min. 98 %
 α 20°C/D; 0.5 %, 0.05 N NaOH
 -131° ± 4°
 Heavy metals max. 0.001 %

Order-No.	Quantity
A0968,0010	10 g
A0968,0025	25 g
A0968,0100	100 g

Literature: (1) Walsh, C. (1980) *Acc. Chem. Res.* **13**, 148-155

Flavin Coenzymes: At the crossroads of biological redox chemistry.

Riboflavin pure Ph. Eur., USP

C

Specification:

Assay (photometr.) 98.0 - 102.0 % (calc. on dry subst.)
 α 20°C/D; 0.5 %, 0.05 N NaOH
 -115° - -135°
 $A_{373\text{ nm}} / A_{267\text{ nm}}$ 0.31 - 0.33
 $A_{444\text{ nm}} / A_{267\text{ nm}}$ 0.36 - 0.39

Identity complies
 Loss on drying max. 1.5 %
 Sulfated ash max. 0.1 %
 Impurity A (HPLC) max. 0.025 %
 Impurity B (HPLC) max. 0.20 %
 Impurity C (HPLC) max. 0.20 %

Impurity D (HPLC) max. 0.20 %
 Largest unspecified impurity max. 0.10 %
 Related substances impurities (total) max 0.5 %

Order-No.	Quantity
A6279,0025	25 g
A6279,0100	100 g
A6279,0250	250 g

Riboflavin-5'-adenosine diphosphate disodium salt dihydrate see Flavin adenine dinucleotide disodium salt dihydrate *BioChemica* Page 351
 Riboflavin 5'-phosphate monosodium salt dihydrate see Flavin mononucleotide monosodium salt dihydrate *BioChemica* Page 352
 Ribonuclease A see RNase A Page 689

Ribonuclease inhibitor from human placenta

B

buffered solution

HS-No.: 35079090

Storage: -20°C
 LGK: 10 - 13
 Disposal: 4

P262

Composition:

DTT 8 mM
 Eluent 0.5 mM
 Glycerol 50 %
 HEPES-NaOH pH 7.5 25 mM
 NaCl 50 mM

Specification:

Activity 20 - 50 U/μl

Order-No.	Quantity
A3934,1000	1000 U
A3934,10000	10000 U

Comment: Please note that this inhibitor will be heat-inactivated at temperatures above 55°C.

Ribonuclease Inhibitor, recombinant

B

buffered solution

HS-No.: 35079090

Storage: -20°C
 LGK: 10 - 13

Composition:

DTT 8 mM
 Eluent 0.5 mM
 Glycerol 50 %
 HEPES-NaOH pH 7.5 20 mM
 NaCl 50 mM

Specification:

DNases/RNases/Proteases not detectable
 Activity 40 U/μl

Order-No.	Quantity
A7538,2500	2500 U
A7538,10000	10000 U

Comment: This recombinant human Ribonuclease Inhibitor replaces the native human RNase-Inhibitor from placenta. The protein is purified / expressed recombinant in *E. coli* and becomes heat-inactivated at temperatures above 55°C. The RNase Inhibitor is active against eukaryotic RNases of the A, B and C type in a pH range from 5 to 9. It can be applied in all molecular biology procedures (e. g. cDNA synthesis, *in vitro* transcription, isolation of eukaryotic mRNA).

Ribonuclease T1 see RNase T Page 690

Ribonucleic acid from yeast

B

tRNA, RNA from yeast CAS-No.: 63231-63-0 Storage: -20°C
HS-No.: 29349990
EC-No.: 277-256-7

Specification:

Activity approx. 18 A₂₆₀ U/
mg
Loss on drying max. 10 %
Solubility (1 %; H₂O) clear, slightly yellow

Order-No.
A3931,0100 100 mg
A3931,0500 500 mg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (2001) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York
(2) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Comment: Nanogram amounts of DNA can be efficiently precipitated with the help of 'carrier'-nucleic acids. Therefore, add 10 µg/ml of yeast-tRNA (or *E. coli* or from bovine liver) to the DNA sample. The DNA will coprecipitate with the tRNA. The 'carrier'-tRNA doesn't interfere with most enzymatic reactions, but will be extensively phosphorylated by polynucleotide kinase. Therefore, don't use tRNA, when the DNA has to be treated with this enzyme after the precipitation (e. g. radio-labeling; ref. 1 Suppl. 42 page 2.1.7).
Stock solutions with a concentration of 10 - 20 mg/ml are prepared in DEPC-treated water and then repeatedly extracted with buffered phenol. Dilute the purified tRNA to a concentration of 4 or 10 mg/ml and store at -20°C (ref. 1 Suppl. 13 page 4.6.11 and Suppl. 53 page 22.3.21; ref. 2 pp. 5.20 + 7.69). AppliChem offers a synthetic alternative, free of DNA-/RNA-contaminations and free from proteins: Linear polymerized acrylamide (please see A6587 DNA-PrecipitAid)

D(-)-Ribose BioChemica

B

Melting point 86 - 88°C C₅H₁₀O₅ Storage: RT
M = 150.13 g/mol LGK: 10 - 13
CAS-No.: 50-69-1
HS-No.: 29400000
EC-No.: 200-059-4

Specification:

Assay min. 99 % TLC complies
α20°C/D; 2 %, H₂O -20.5° - -19.0° Loss on drying max. 0.5 %
Heavy metals (as Pb) max. 0.001 %
Solubility (5 %; H₂O) clear, colorless

Order-No.
A2219,0010 10 g
A2219,0050 50 g
A2219,0100 100 g

L(+)-Ribose BioChemica

B

Melting point 85°C C₅H₁₀O₅ Storage: RT
M = 150.13 g/mol
CAS-No.: 24259-59-4
HS-No.: 29400000
EC-No.: 246-110-4

Specification:

Assay min. 99 % Loss on drying max. 0.5 %
α20°C/D; 2 %, H₂O +20° ± 1° Sulfated ash max. 0.1 %
Heavy metals (as Pb) max. 0.0005 %

Order-No.
A6890,0250 250 mg
A6890,0001 1 g

Rifampicin

B

Rifampin, Rifamycin SV C₄₃H₅₈N₄O₁₂ Storage: RT WGK: 1
M = 822.96 g/mol protected from light Warning
CAS-No.: 13292-46-1 LGK: 10 - 13 H302-H335-H315-H319
HS-No.: 29419000 P305+P351+P338-P261
EC-No.: 236-312-0



Specification:

Assay min. 98 %
Heavy metals (as Pb) max. 0.002 %
Loss on drying max. 2 %

Order-No.
A2220,0500 500 mg
A2220,0001 1 g
A2220,0005 5 g

Literature: (1) Schulz, W. & Zillig, W. (1981) *Nucleic Acids Res.* **9**, 6889-6906

(2) Jin, D.J. & Turnbough, Jr., C.L. (1994) *J. Mol. Biol.* **236**, 72-80

Rifampicin inhibition of RNA synthesis by destabilisation of DNA-RNA polymerase-oligonucleotide-complexes.

An *E. coli* RNA polymerase defective in transcription due to its overproduction of abortive initiation products.

Rifampin see Rifampicin Page 688

Rifamycin SV see Rifampicin Page 688

RNA from yeast see Ribonucleic acid from yeast Page 688

RNA - Isolation

Total RNA Mini SI Isolation Spin-Kit B

for 25 or 100 isolations

HS-No.: 38220000

Storage: RT
except for Phenol AC: +4°C

- ◆ Kit for the total RNA isolation from different types of samples
- Application of the RNA in RT-PCR, cDNA synthesis and Northern blotting
- Binding capacity of the columns 100 µg RNA
- Maximum sample volume: Blood (1 ml); cell culture cells (5x10⁶ cells); bacteria (5x10⁹ cells); tissue (20 mg)

Order-No.	Quantity
A5189,0025	25 Isol.
A5189,0100	100 Isol.

Comment: This kit is based on the property of RNA to adsorb to silica surface in the presence of high concentration of chaotropic salts. Cells or tissue are lysed using special lysis solution containing chaotropic salts and phenol (Phenol AC). In the next step chloroform is added to the lysate and the sample is spinned down. The upper phase contains RNA is loaded onto spin columns after adding isopropanol to promote adsorption on the surface of silica filter. After washing pure RNA is eluted in RNase-free water.

Total RNA Midi SI Isolation Spin-Kit B

for 20 isolations

HS-No.: 38220000

Storage: RT
except for Phenol AC: +4°C

- ◆ Kit for the total RNA isolation from different types of samples
- Application of the RNA in RT-PCR, cDNA synthesis and Northern blotting
- Binding capacity of the columns 500 µg RNA
- Maximum sample volume: Blood (10 ml); cell culture cells (5x10⁶ cells); bacteria (5x10⁹ cells); tissue (150 mg)

Order-No.	Quantity
A7813,0020	20 Isol.

Total RNA Maxi SI Isolation Spin-Kit B

for 10 isolations

HS-No.: 38220000

Storage: RT
except for Phenol AC: +4°C

- ◆ Kit for the total RNA isolation from different types of samples
- Application of the RNA in RT-PCR, cDNA synthesis and Northern blotting
- Binding capacity of the columns 1000 µg RNA
- Maximum sample volume: Blood (50 ml); cell culture cells (5x10⁷ cells); bacteria (20 ml overnight culture); tissue (500 mg)

Order-No.	Quantity
A7890,0010	10 Isol.

RNase A

Ribonuclease A
salt-free, freeze dried
from bovine pancreas

M = ~13700 g/mol
CAS-No.: 9001-99-4
HS-No.: 35079090
EC-No.: 232-646-6

Storage: -20°C
LGK: 10 - 13

WGK: nwg

RNase A (DNase-free) B

Specification:	Order-No.	Quantity
DNases not detectable	A3832,0050	50 mg
Proteases not detectable	A3832,0250	250 mg
Activity min. 90 U/mg (Kunitz)	A3832,0500	500 mg

RNase A

Specification:

Assay approx. 70 %
Activity min. 70 U/mg (Kunitz)

Order-No.	Quantity
A2760,0100	100 mg
A2760,0500	500 mg
A2760,1000	1 g

B

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 3.13.1 Suppl. 8; Greene Publishing & Wiley-Interscience, New York
(2) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(3) Melton, D.A. et al. (1984) *Nucleic Acids Res.* **12**, 7035-7056
(4) Winter, E. et al. (1985) *Proc. Natl. Acad. Sci. USA* **82**, 7575-7579

Comment: Ribonuclease A (RNase A) is an endoribonuclease, that specifically cleaves single-stranded RNA 3' to pyrimidine residues (cytosine, uracil). Thereby, it generates pyrimidine-3'-phosphate or oligonucleotides with terminal pyrimidine-3'-phosphates. The pH-optimum is in the range of 7.0 - 7.5. RNase A is used for the purification of RNA-free DNA, for the removal of non-hybridized regions of RNA : DNA-hybrides or as a molecular weight marker. The enzyme is inhibited by diethyl pyrocarbonate (DEPC), guanidinium salts (4 M GuaSCN), β -mercaptoethanol, heavy metals, vanadyl-ribonucleoside-complexes, RNase-inhibitor from human placenta and competitively by DNA, respectively. Regarding the latter, the effect of denatured DNA is higher than by native nucleic acids. Nevertheless, RNase A is very active under very different conditions and difficult to inactivate. At low salt-concentrations (up to 100 mM NaCl), RNase A cleaves single- and double-stranded RNA and RNA in RNA : DNA- hybrides. Under high salt concentrations (>300 mM NaCl) single-stranded RNA is cleaved only. To remove the enzyme from samples, it has to be digested by proteinase K (frequently, SDS at a final concentration of 0.6 % is added) and several phenol extractions are required. (Applications: Enzymatic manipulation of DNA and RNA: ref. 1 Suppl. 8 p. 3.13.1; minipreps of plasmid-DNA: ref. 1 Suppl. 24 p. 1.6.6; *inSitu*-hybridisation of cellular RNA: ref. 1 Suppl. 7 p. 14.3.8; removal of RNA from plasmid preparations: ref. 2 p. 1.51)
Stock solutions are prepared at concentrations from 1 - 10 mg/ml in 10 mM Tris - HCl, pH 7.5; 15 mM NaCl or in 10 mM Tris - HCl, pH 7.5; 1 mM EDTA, pH 8.0 (TE buffer). The recommended working concentration is 10 μ g/ml (removal of RNA from plasmid preparations; 1 hr, RT) or 100 ng/ml (preparation of "blunt ends" of double-stranded cDNA).
Unit definition: One unit of activity is defined as that amount of enzyme which causes the hydrolysis of RNA to yield a velocity constant, $k = 1$, at 25°C and pH 5.0 (Kunitz-Unit).
Stability: RNase A aggregates during lyophilizing and storage. It has a high affinity to glass surfaces, which has to be taken into consideration. At neutral pH (e. g. in PBS pH 7.4) and high concentrations (> 10 mg/ml) the enzyme will precipitate. At +4°C (lyophilized) it is stable for several years (dry storage), in solution (-20°C) several years or (+4°C) several weeks.

RNase decontamination solution see RNase-ExitusPlus™ Page 691

RNase T

Ribonuclease T1
Solution in 2.8 M Ammonium sulfate

$M = -11085$ g/mol
CAS-No.: 9026-12-4
HS-No.: 35079090
EC-No.: 232-809-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 4

P262

Specification:

Activity/mg Protein min. 50000 U
Activity/ml ca. 23,500 U

Order-No.	Quantity
A3933,100000	100 KU
A3933,500000	500 KU

B

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York
(2) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. pp. 7.66-68. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.
(3) Melton, D.A. et al. (1984) *Nucleic Acids Res.* **12**, 7035-7056
(4) Winter, E. et al. (1985) *Proc. Natl. Acad. Sci. USA* **82**, 7575-7579

Comment: Ribonuclease T1 (RNase T) is an endoribonuclease, which specifically cleaves RNA between the 3'-phosphate of guanine or inosine (guanosine-3'-phosphate, inosine-3'-phosphate) to the 5'-OH of neighbouring nucleotide. RNase T is applied in cloning and sequencing, removal of non-hybridized regions of RNA in RNA : RNA or DNA : RNA-hybrides (*inSitu*-hybridization of cellular RNA: ref. 1 Suppl. 13 p. 14.3.10), structural analysis, analysis of RNAs in RNase-protection assays in combination with RNase A, preparation of 2',3'-cyclic nucleoside phosphates, for the oligosynthesis and for the removal of RNA from DNA-preparations. The enzyme is inhibited by ions like Ag^+ , Zn^{2+} , Cu^{2+} and Hg^{2+} in concentrations of 10^{-3} M. Histidine and EDTA stimulate RNase T1, probably by complexing interfering ions.
RNase T1 is a quite stable enzyme with a pH-optimum at 7.5. Brief heating to 100°C (10 minutes, pH 6) is tolerated. Please keep this in mind, when you try to inactivate the enzyme in your sample. The stability is reduced in the alkaline pH-range (>pH 9), while RNase T1 is relatively stable at acidic pH-values. The recommended working concentration is 2 μ g/ml or 10 U/ml (in hybridization experiments e. g. ref. 2 p. 17.29).
Unit definition: One unit causes an increase in absorption of 1.0 at 260 nm at 37°C and pH 7.5.
Stability: The stability in suspension in 2.8 M ammonium sulfate at +4°C is 12-18 months (neutral pH-range) and in other solutions several weeks (neutral pH-range).



Nice prices !

RNase-ExitusPlus™

B

Decontamination removal solution for
RNase, RNase decontamination solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

◆ **replaces RNase-OFF™ and RNase-Exitus**

- removes RNase contaminations from surfaces
- for cleaning of laboratory surfaces
- for cleaning of electrophoresis equipment, pipettes, reaction tubes etc.
- supplied in spray bottles or refill bottles (RF)

◆ **special, new features**

- non-enzymatic degradation of RNase by catalytic and cooperative effects of the components
- All components of RNase-ExitusPlus™ are readily bio-degradable and not harmful or toxic for humans.
- Doesn't contain aggressive mineralic acids or alkaline substances
- No toxic fumes. Contains low concentration of alcohol.

Order-No.	Quantity
A7153,0100	100 ml
A7153,0250	250 ml
A7153,0500	500 ml
A7153,1000	1 L
A7153,10006	6 x 1 L
A7153,1000RF	1 L
A7153,10006RF	6 x 1 L
A7153,2500RF	2.5 L

* **Attention: New Formulation!**

Comment: RNase-ExitusPlus™ is a non-alkaline, non-corrosive and non-carcinogenic cleaning solution that is highly active against RNase contamination. RNase-ExitusPlus™ has been demonstrated to inactivate more than 20 µg of RNase A dried onto the bottom of a microcentrifuge tube. RNase-ExitusPlus™ is stable for approx. 15 months.

RNase-ExitusPlus™ is ready-to-use for eliminating RNase from any surface including the interior of microcentrifuge tubes. By following the simple decontamination instructions below, RNase is completely inactivated and removed. RNase-ExitusPlus™ should be stored at room temperature; at lower temperatures a precipitate may form which is easily brought into solution at 37°C.

Instructions: To decontaminate pipettors: Following manufacturers instructions; remove the shaft from the pipettor and remove seals and gaskets from the shaft. Soak the shaft for one minute in RNase-ExitusPlus™, rinse the shaft thoroughly with water, let dry and reassemble.

To decontaminate laboratory surfaces: Apply RNase-ExitusPlus™ directly to the lab surface. Wipe thoroughly with a paper towel, rinse with water and dry with a clean paper towel.

To decontaminate laboratory apparatus: Generously apply RNase-ExitusPlus™ to a paper towel and wipe all exposed surfaces of the apparatus thoroughly. Rinse with water and dry with a clean paper towel. To clean small parts, briefly soak them in RNase-ExitusPlus™, rinse with water and dry.

To decontaminate plastic and glass vessels: Add ample RNase-ExitusPlus™ to enable coating the entire surface of the vessel by swirling or vortexing. Discard the solution and

rinse vessels thoroughly two times with distilled water.

RNase-ExitusPlus™ is a registered trademark of AppliChem GmbH.

Robigenin see Kaempferol Page 468

Rosaniline see Fuchsin basic (C.I. 42510) Microscopy grade Page 364

Rosazein see Rhodamine B (C.I. 45170) Page 686

Rose Bengal (C.I. 45440)

B

Acid Red 94, 4,5,6,7-Tetrachloro-
2',4',5',7'- tetraiodofluorescein, Bengale
rose

C₂₀H₂Cl₄I₄Na₂O₅
M = 1017.65 g/mol
CAS-No.: 632-69-9
HS-No.: 29182900
EC-No.: 211-182-8

Storage: RT

Specification:

Assay min. 85 %
λ_{max} 544 - 550 nm
Identity complies

Order-No.	Quantity
A4439,0010	10 g
A4439,0050	50 g

Rose Bengal - Solution

C

ready-to-use aqueous adsorption indicator
solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Rose Bengal (A4439) 1 %

Order-No.	Quantity
A0624,0100	100 ml
A0624,0500	500 ml

Rose-Gal BioChemica

B

Y-Gal, 6-Chloro-3-indolyl-β-D-
galactopyranoside, Red-Gal™

C₁₄H₁₆ClNO₆
M = 329.74 g/mol
CAS-No.: 138182-21-5
HS-No.: 29339980

Storage: -20°C
protected from light

Melting point 190°C

Specification:

Assay (TLC) min. 98.5 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A1109,0025	25 mg
A1109,0100	100 mg

Rose-Glucuro CHA salt *BioChemica*

B

6-Chloro-3-indolyl-β-D-glucuronide
cyclohexylammonium salt, Red-
Glucuro™, γ-Glucuro

C₁₄H₁₄ClNO₇ · C₆H₁₃N
M = 442.89 g/mol
CAS-No.: 138182-20-4
HS-No.: 29349990

Storage: -20°C
protected from light

Specification:

Assay min. 98.5 %
α20°C/D; 1 %, DMF/H₂O 1:1 -71° ± 2°

Order-No.

A1110,0010

A1110,0025

Quantity

10 mg

25 mg

Rose-Phos p-toluidine salt *BioChemica*

B

Red-Phos™, γ-Phos, 6-Chloro-3-indolyl-
phosphate p-toluidine salt

C₈H₇ClNO₄P · C₇H₉N
M = 354.73 g/mol
CAS-No.: 159954-33-3
HS-No.: 29339980

Storage: -20°C
protected from light

Specification:

Assay min. 98.5 %

Order-No.

A1111,0100

A1111,0025

Quantity

100 mg

250 mg

Rosmarinic acid HPLC grade

B

from *Rosmarinus officinalis*

C₁₈H₁₆O₈
M = 360.32 g/mol
CAS-No.: 20283-92-5
HS-No.: 29183000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.

A5313,0020

A5313,0050

Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Rosolic acid (C.I. 43800)

C

Transition interval pH 6.2 - 8.2 (yel-
low - pink)

C₁₄H₁₄N₃NaO₃S
M = 290.32 g/mol
CAS-No.: 603-45-2
HS-No.: 29145000
EC-No.: 210-041-8

Storage: RT

Warning
H315-H319-H335
P309+P311-P260-P262

**Specification:**

λ_{max} 480 - 486 nm (EtOH,
HCl acidified)
Loss on drying (110°C; 1 h) . max. 10 %

Order-No.

A8080,0010

A8080,0025

Quantity

10 g

25 g

RPM see Rapamycin *BioChemica* Page 683

Click - RPMI - Medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Click - RPMI - Medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.

A2044,1000

A2044,5000N

A2044,9010

A2044,9050

Quantity

1 L

5 L

10 L

50 L

Click - RPMI - Medium

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.

A2504,1000

A2504,5000

A2504,9010

A2504,9050

Quantity

1 L

5 L

10 L

50 L

RPMI 1640 - Medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

RPMI 1640 - Medium			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1959,1000	1 L	
	A1959,5000	5 L	
	A1959,9010	10 L	
	A1959,9050	50 L	

RPMI 1640 - Medium			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1339,1000	1 L	
	A1339,5000	5 L	
	A1339,9010	10 L	
	A1339,9050	50 L	

RPMI 1640 - Medium			B
without L-Glutamine	Order-No.	Quantity	
without Phenol red	A2040,1000	1 L	
without Sodium hydrogen carbonate	A2040,5000	5 L	
	A2040,9010	10 L	
	A2040,9050	50 L	

RPMI 1640 - Medium			B
with L-Glutamine	Order-No.	Quantity	
without Phenol red	A3135,1000	1 L	
without Sodium hydrogen carbonate	A3135,5000	5 L	
	A3135,9010	10 L	
	A3135,9050	50 L	

RPMI 1640 - Medium			B
without L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1960,1000	1 L	
without Sodium hydrogen carbonate	A1960,5000	5 L	
	A1960,9010	10 L	
	A1960,9050	50 L	

RPMI 1640 - Medium			B
with L-Glutamine	Order-No.	Quantity	
with 25 mM HEPES	A1538,1000	1 L	
without Sodium hydrogen carbonate	A1538,5000	5 L	
	A1538,9010	10 L	
	A1538,9050	50 L	

RT-PCR First Strand cDNA Synthesis Kit for Reverse Transcription see First Strand cDNA Synthesis-Kit for RT-PCR Page 351

Rubidium chloride *BioChemica*

<i>RbCl</i>	CIRb	Storage: RT	WGK: 1
	<i>M</i> = 120.92 g/mol	LGK: 10 - 13	
Boiling point	CAS-No.: 7791-11-9	Disposal: 14	
Melting point	HS-No.: 28273985		
	EC-No.: 232-240-9		
Specification:			
Assay	Fe	Pb	
Solubility (5 %; H ₂ O)	K	Zn	
Sulfate	Na		
Cu	Ni		
		Order-No.	Quantity
		A4240,0010	10 g
		A4240,0050	50 g

Rubin S see Fuchsin acidic disodium salt (C.I. 42685) Page 364
Rum see Ethanol 10 % - 39 % Page 336

Ruthenium red

B

Solubility (25°C) soluble (H₂O)

Cl₆H₄₂N₁₄O₂Ru₃ · 4H₂O
M = 858.42 g/mol
CAS-No.: 11103-72-3
HS-No.: 28439090
EC-No.: 308-985-1

Storage: RT
LGK: 10 - 13
Disposal: 27

WGK: 3*
Warning
H302
P260



Specification:

Assay (titr.) approx. 95 %
pH (20°C) 7.0 (H₂O)

Order-No.	Quantity
A3488,0001	1 g
A3488,0005	5 g

Literature: (1) Hoffmann, E.M. & Bauknecht, N. (1999) *Anal. Biochem.* **267**, 245-251
(2) Hou, W.-C. *et al.* (1999) *Bot. Bull. Acad. Sin.* **40**, 115-119
(3) Charuk, J.H.M. *et al.* (1990) *Anal. Biochem.* **188**, 123-131

Quantification of soluble and cell-bound acidic polysaccharides of red algae.
Qualitative distinction of carboxyl group distinction in pectins with ruthenium red.
Interaction of Ruthenium Red with Ca²⁺-Binding Proteins.

Comment: Ruthenium red binds selectively to the intramolecular spaces of carboxyl groups of pectin and shows little binding to aginic acid carboxyl groups. The dye binds between the carboxyl oxygen of one galacturonide moiety and a hydriyl oxygen of an neighboring galacturonide in the pectate chain. Ruthenium red possesses an absorption maximum at 534 nm. It is watersoluble.

Ruthenium(II) tris(bathophenanthroline disulfonate) tetrasodium salt see Proteo-Dye - Protein dyes Page 674

Rutin HPLC grade

B

Quercetin-3-rutinoside, Sophorin,
Rutosid

C₂₇H₃₀O₁₆
M = 610.52 g/mol
CAS-No.: 153-18-4
HS-No.: 29381000

Storage: 2-8°C

Warning
H302
P264-P330-P301+P312



Specification:

Assay min. 99 %

Order-No.	Quantity
A6764,0050	50 mg
A6764,0100	100 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Rutosid see Rutin HPLC grade Page 694

Sabouraud Chloramphenicol Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Chloramphenicol 0.5 g/L
Sabouraud Dextrose 2 % Agar
..... 44.5 g/L

Specification:

pH before autoclaving . . approx. 6.4 (20°C)

Order-No.	Quantity
A5885,0500	500 g
A5885,5000	5 kg

Literature: (1) Sabouraud (1892) *Ann. Dermatol. Syphil.* **3**, 1061.

Comment: This selective medium is used for the isolation of all species of fungi and dermatophytes from contaminated specimens.

Directions: Suspend 45 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Sabouraud Dextrose (4 %) Agar

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Glucose 40.0 g/L
Peptones 10.0 g/L

Specification:

pH before autoclaving . . approx. 5.6 (20°C)

Order-No.	Quantity
A5854,0500	500 g
A5854,5000	5 kg

Literature: (1) Sabouraud (1892) *Ann. Dermatol. Syphil.* **3**, 1061.

Comment: This acidic pH medium is used for the cultivation and isolation of pathogenic and non pathogenic yeasts and fungi, particularly dermatophytes.

Directions: Suspend 65 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Saccharin sodium salt pure Ph. Eur., USP

B

450fold

C₇H₄NNaO₃S
M = 205.17 g/mol
CAS-No.: 128-44-9
HS-No.: 29251100
EC-No.: 204-886-1

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr., calc. anhydrous subst.)
..... 99.0 - 101.0 %
Acidic/alkaline react. subst. complies
Appearance of solution . . . complies
Behaviour against H₂SO₄ . . . complies

Heavy metals (as Pb) . . max. 0.001 %
Identity complies
Organic vol. impurities . . complies
Readily carbon. subst. . . complies
2- & 4-Toluenesulfonamide

..... complies
Benzoates & salicylates
..... complies
Water (K.F.) . . . max. 15 %

Order-No.	Quantity
A4036,0250	250 g
A4036,1000	1 kg

SafetyFirst Caps

HS-No.: 39269097

Storage: RT

SafetyFirst Cap 1 (GL45)



C

- ◆ Sealing system for extracting from bottles with screw thread (GL45).
- ◆ No venting of harmful solvent vapors keeps the desired solvent concentration constant.
- ◆ All SafetyFirst Caps are fitted with a ventilation valve that opens upon usage of the HPLC pump.
- ◆ Constant retention times.
- ◆ Omnidirectional rotation

Equipment:

- 1 x connectors 3.2 mm OD
- Air valve with integrated filter
- PP-Fitting for OD capillary 3.2 mm
- PTFE ferrule

Order-No.	Quantity
A8364,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.

SafetyFirst Cap 1 (GL45) with shut-off



C

- ◆ Sealing system for extracting from bottles with screw thread (GL45).
- ◆ No venting of harmful solvent vapors keeps the desired solvent concentration constant.
- ◆ All SafetyFirst Caps are fitted with a ventilation valve that opens upon usage of the HPLC pump.
- ◆ Constant retention times.
- ◆ Omnidirectional rotation
- ◆ SafetyFirst Caps with shut-off prevent air pockets in the tube when the supply bottle is being changed.

Equipment:

- 1 x Connectors 3.2 mm OD with shut-off
- Air valve with integrated filter
- 1 x PP-Fitting for OD capillary 3.2 mm
- 1 x PTFE ferrule

Order-No.	Quantity
A8973,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.

SafetyFirst Cap 2 (GL45)



C

- ◆ Sealing system for extracting from bottles with screw thread (GL45).
- ◆ No venting of harmful solvent vapors keeps the desired solvent concentration constant.
- ◆ All SafetyFirst Caps are fitted with a ventilation valve that opens upon usage of the HPLC pump.
- ◆ Constant retention times.
- ◆ Omnidirectional rotation

Equipment:

- 2 x connectors 3.2 mm OD
- Air valve with integrated filter
- 2 x PP-Fitting for OD capillary 3.2 mm
- 2 x PTFE ferrule

Order-No.	Quantity
A8370,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.

SafetyFirst Cap 3 (GL45)

C

- ◆ Sealing system for extracting from bottles with screw thread (GL45).
- ◆ No venting of harmful solvent vapors keeps the desired solvent concentration constant.
- ◆ All SafetyFirst Caps are fitted with a ventilation valve that opens upon usage of the HPLC pump.
- ◆ Constant retention times.

◆ Omnidirectional rotation

Equipment:

- 3 x connectors 3.2 mm OD
- Air valve with integrated filter
- 3 x PP-Fitting for OD capillary 3.2 mm
- 3 x PTFE ferrule

Order-No.	Quantity
A8964,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.

SafetyFirst Cap 3 (GL45) each with shut-off

C

- ◆ Sealing system for extracting from bottles with screw thread (GL45).
- ◆ No venting of harmful solvent vapors keeps the desired solvent concentration constant.
- ◆ All SafetyFirst Caps are fitted with a ventilation valve that opens upon usage of the HPLC pump.
- ◆ Constant retention times.
- ◆ Omnidirectional rotation
- ◆ During repairs on HPLC pumps, the shut-off on the SafetyCaps can be
- SafetyCaps with shut-off also prevent air pockets in the tube when the supply bottle is being changed.

Equipment:

- 3 x Connectors 3.2 mm OD each with shut-off
- 3 x Dichtkegel PTFE
- Air valve with integrated filter
- 3 x PP-Fitting for OD capillary 3.2 mm

Order-No.	Quantity
A8981,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.

SafetyFirst Cap 4 (GL45)

C

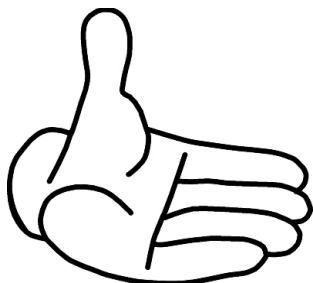
- ◆ Sealing system for extracting from bottles with screw thread (GL45).
- ◆ No venting of harmful solvent vapors keeps the desired solvent concentration constant.
- ◆ All SafetyFirst Caps are fitted with a ventilation valve that opens upon usage of the HPLC pump.
- ◆ Constant retention times.
- ◆ Omnidirectional rotation

Equipment:

- 4 x connectors 3.2 mm OD
- Air valve with integrated filter
- 4 x PP-Fitting for OD capillary 3.2 mm
- 4 x PTFE ferrule

Order-No.	Quantity
A8970,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.



**Production of
cell culture powdered media
following the customers recipe.**

SafetyFirst Caps for waste container

HS-No.: 39269097

Storage: RT

SafetyFirst Cap for waste container (GL45)

C

- ◆ Sealing system for filling from bottles and canisters with screw threads.
- ◆ Omnidirectional rotation
- ◆ No venting of harmful solvent vapors.
- ◆ The exhaust air filter A8525 or filter supply pack (3 pieces) A8894 are sold separately.

Equipment:

- 1 x connector 6.4 mm OD
- 2 x connectors 2.3/3.2 mm OD
- PP-Fittings for OD capillary 2.3/3.2 mm
- PTFE ferrule
- Tube clip for tubes 6.4 mm

Order-No.	Quantity
A8556,0001N	1 pcs

Comment: A valve change is recommended every six months to ensure trouble-free operation, because the filter membrane collects contamination from the ambient air.

SafetyFirst Cap for waste container (S55)

C

- ◆ Sealing system for filling from bottles and canisters with screw threads.
- ◆ Omnidirectional rotation
- ◆ No venting of harmful solvent vapors.
- ◆ The exhaust air filter A8525 or filter supply pack (3 pieces) A8894 are sold separately.

Equipment:

- 1 x connector 6.4 mm OD
- 2 x connectors 2.3/3.2 mm OD
- PP-Fittings for OD capillary 2.3/3.2 mm
- PTFE ferrule
- Tube clip for tubes 6.4 mm

Order-No.	Quantity
A9006,0001N	1 pcs

SafetyFirst Cap for waste container (S55) including valve safety funnel

C

- ◆ Sealing system for filling from bottles and canisters with screw threads.
- ◆ Omnidirectional rotation
- ◆ No venting of harmful solvent vapors.
- ◆ The exhaust air filter A8525 or filter supply pack (3 pieces) A8894 are sold separately.

Equipment:

- 2 x connectors 2.3/3.2 mm OD
- 1 x Valve safety funnel
- 2 x PTFE ferrule
- 2 x PP-Fittings for OD capillary 2.3/3.2 mm

Order-No.	Quantity
A9010,0001N	1 pcs

Comment: Safety funnels with valves for changing are also available (A8995).

SafetyFirst Cap for waste container (S60/61)

C

- ◆ Sealing system for filling from bottles and canisters with screw threads.
- ◆ Omnidirectional rotation
- ◆ No venting of harmful solvent vapors.
- ◆ The exhaust air filter A8525 or filter supply pack (3 pieces) A8894 are sold separately.

Equipment:

- 1 x connector 6.4 mm OD
- 2 x connectors 2.3/3.2 mm OD
- PP-Fittings for OD capillary 2.3/3.2 mm
- PTFE ferrule
- Tube clip for tubes 6.4 mm

Order-No.	Quantity
A9014,0001N	1 pcs

SafetyFirst Cap for waste container (S60/61) including valve safety funnel

C

- ◆ Sealing system for filling from bottles and canisters with screw threads.
- ◆ Omnidirectional rotation
- ◆ No venting of harmful solvent vapors.
- ◆ The exhaust air filter A8525 or filter supply pack (3 pieces) A8894 are sold separately.

Equipment:

- 2 x connectors 2.3/3.2 mm OD
- 1 x Valve safety funnel
- 2 x PTFE ferrule
- 2 x PP-Fittings for OD capillary 2.3/3.2 mm

Order-No.	Quantity
A9018,0001N	1 pcs

Comment: Safety funnels with valves for changing are also available (A8995).

SafetyFirst Accessories

Storage: RT

SafetyFirst Adapter PE (S60/61 to 2")

HS-No.: 39269097

C

- ◆ Adapter for SafetyFirst Caps (S60/61) and container with thread 2"

Order-No.	Quantity
A9038,0001N	1 pcs

SafetyFirst Adapter PP (GL45/GL40)

HS-No.: 39269097

C

- ◆ Adapter for SafetyFirst Caps (GL45) and bottles with thread GL40

Order-No.	Quantity
A9030,0001N	1 pcs

SafetyFirst Adapter PP (GL45/S55)

HS-No.: 39269097

C

- ◆ Adapter for SafetyFirst Caps (GL45) and container with thread S55

Order-No.	Quantity
A8946,0001N	1 pcs

SafetyFirst Adapter PTFE (GL45/GL40)

HS-No.: 39269097

C

- ◆ Adapter for SafetyFirst Caps (GL45) and bottles with thread GL40

Order-No.	Quantity
A9034,0001N	1 pcs

SafetyFirst Charcoal Filter M medium (48 g)

*based on special activated charcoal
granulate*

HS-No.: 84219900

C

Equipment:

- 48 g quantity
- Specific surface of 57,600 m²
- For containers 5 L to 20 L

Order-No.	Quantity
A8525,0001N	1 pcs

Comment: The life time of the integrated charcoal filter varies according to the chemicals used for maximum efficiency, we recommend that the filter is changed every 6 months.

SafetyFirst Charcoal Filter M (48 g) Special Value Pack

C

Available only as a set

HS-No.: 84219900

Purchased parts package:

- Exhaust air filters M blue (A8525) 3 pcs.

Order-No.	Quantity
A8894,0001N	1 Set

SafetyFirst Air valve

C

HS-No.: 39269097

- ◆ Exchangeable air valve for SafetyFirst Caps with integrated air filter

Order-No.	Quantity
A8967,0001N	1 pcs
A8967,0010N	10 pcs

SafetyFirst Screw for closing non used connectors

C

HS-No.: 39269097

- ◆ 10 Screws for closing non used standard capillary connectors 3.2 mm ID, PTFE

Order-No.	Quantity
A8990,0001	x 10 pcs

SafetyFirst PTFE ferrules 1.6 mm ID

C

HS-No.: 39269097

- ◆ 10 Replacement PTFE ferrules 1.6 mm ID

Order-No.	Quantity
A8998,0001N	1 x 10 pcs

SafetyFirst PTFE ferrules 2.3 mm ID

C

HS-No.: 39269097

- ◆ 10 Replacement PTFE ferrules 2.3 mm ID

Order-No.	Quantity
A9042,0001N	1 x 10 pcs

SafetyFirst PTFE ferrules 3.2 mm ID

C

HS-No.: 39269097

- ◆ 10 Replacement PTFE ferrules 3.2 mm ID

Order-No.	Quantity
A9046,0001N	1 x 10 pcs

SafetyFirst Fittings (PP) Standard

C

HS-No.: 39269097

- ◆ 10 Replacement fittings for ferrules 1.6/2.3/3.2 mm

Order-No.	Quantity
A8965,0001N	1 x 10 pcs

SafetyFirst PTFE fitting with integrated ferrule

C

HS-No.: 39269097

- ◆ For tubes 3,2 mm OD

- ◆ 10 Replacement fittings for SafetyFirst Caps with shut-off for tube connection on the inside of the cap

Order-No.	Quantity
A8985,0001N	1 x 10 pcs

SafetyFirst Funnel (S55) with stainless steel sieve

HS-No.: 39269097

C

- ◆ Safety funnel for all types of chemicals
- ◆ Safety funnel for canister with thread S55
- ◆ PE-HD Safety funnel non electroconductive, with stainless steel sieve

Order-No. Quantity
A9022,0001N 1 pcs

SafetyFirst Funnel (S60/61) with stainless steel sieve

HS-No.: 39269097

C

- ◆ Safety funnel for all types of chemicals
- ◆ Safety funnel for canister with thread S60/61
- ◆ PE-HD Safety funnel non electroconductive, with stainless steel sieve

Order-No. Quantity
A9026,0001N 1 pcs

SafetyFirst Funnel with valve

HS-No.: 39269097

C

- ◆ Replacement Safety funnel with valve
- ◆ Fits only in the originally delivered SafetyFirst Cap for waste container incl. valve safety funnel (A9010 oder A9018)

Order-No. Quantity
A8995,0001N 1 pcs

Safranalin see Rhodamine B (C.I. 45170) Page 686

Safranin O (C.I. 50240) for Microscopy

C

Safranin T $C_{20}H_{19}ClN_4$ Storage: RT WGK: 2
 $M = 350.88 \text{ g/mol}$ LGK: 10 - 13
CAS-No.: 477-73-6
HS-No.: 32041300
EC-No.: 207-518-8

Specification:

Assay min. 80 %
 λ_{max} (50 % EtOH) 530 - 534 nm
E 1 %/1 cm, λ_{max} 1180 - 1480
Loss on drying max. 15 %

Order-No. Quantity
A0427,0010 10 g
A0427,0025 25 g
A0427,0100 100 g

Comment: Safranin O is a nuclear stain, producing red nuclei. It is used primarily as a counterstain.

Safranin T see Safranin O (C.I. 50240) for Microscopy Page 700
Salicine yellow see Alizarin yellow GG (C.I. 14025) Page 80

D(-)-Salicin Microbiology grade

B

$C_{13}H_{18}O_7$ Storage: RT WGK: 1
 $M = 286.27 \text{ g/mol}$ LGK: 10 - 13 Warning
CAS-No.: 138-52-3 H317
HS-No.: 29389090 P280
EC-No.: 205-331-6

**Specification:**

Assay min. 99 %
 α 20°C/D; 3 %, H_2O -60.5° - -64.5°
Solubility (3 %; H_2O) clear, colorless

Water (K.F.) max. 0.5 %

Order-No. Quantity
A3269,0025 25 g
A3269,0100 100 g

Salicylic acid

2-Hydroxybenzoic acid

Boiling point 211°C (27 hPa)
Melting point 158 - 161°C
Solubility (20°C) 1.8 g/L (H₂O)

C₇H₆O₃
M = 138.12 g/mol
CAS-No.: 69-72-7
HS-No.: 29182100
EC-No.: 200-712-3

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1
Danger
H302-H318
P313-P305+P351+P338



Salicylic acid BioChemica

Specification:

Assay min. 99.5 %
Heavy metals (as Pb) max. 0.001 %
Sulfated ash max. 0.05 %
Loss on drying max. 0.25 %
Chloride max. 0.005 %
Sulfate max. 0.02 %

Order-No.
A4107,0250 250 g
A4107,0500 500 g
A4107,1000 1 kg

Salicylic acid p. A.

Specification:

Assay min. 99.5 %
Loss on drying max. 0.5 %
Sulfated ash max. 0.05 %
Chloride max. 0.005 %
Sulfate max. 0.005 %
As max. 0.0001 %
Cu max. 0.0001 %
Fe max. 0.0005 %
Ni max. 0.0001 %
Pb max. 0.0005 %
Zn max. 0.0001 %

Order-No.
A0922,0250 250 g
A0922,0500 500 g
A0922,1000 1 kg
A0922,10006 6 x 1 kg

Salicylic acid pure Ph. Eur., USP

Specification:

Assay (titr.) 99.5 - 100.5 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %
Identity complies
Loss on drying max. 0.5 %
Related subst. (HPLC) complies
Sulfated ash max. 0.1 %
Chloride max. 0.01 %
Sulfate max. 0.02 %

Order-No.
A2221,0500 500 g
A2221,1000 1 kg
A2221,10006 6 x 1 kg
A2221,5000 5 kg
A2221,9010 10 kg
A2221,9025 25 kg

Salicylic acid sodium salt see Sodium salicylate p. A. Page 751

Salmon sperm DNA sodium salt

Deoxyribonucleic acid from salmon
sperm
lyophilized

CAS-No.: 9007-49-2
HS-No.: 29349990
EC-No.: 309-566-6

Storage: 2-8°C

Salmon sperm DNA sodium salt (sonified)

Specification:

DNases/RNases/Proteases not detectable
Fragment size 10 - 330 bp

Order-No.
A2159,0001 1 g
A2159,0005 5 g
A2159,0010 10 g

Salmon sperm DNA sodium salt

Specification:

DNases/RNases/Proteases not detectable

Order-No.
A2160,0001 1 g
A2160,0005 5 g
A2160,0010 10 g

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; page 9.48. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: To prevent unspecific binding of the probe to the membrane in Southern- and Northern-Hybridisations salmon sperm DNA is added to the pre-hybridisation solution (Blotto, Denhardt's etc.). Salmon sperm DNA is sonified (fragments of 500 - 1000 base pairs) and extracted with phenol : chloroform. The lyophilised DNA is dissolved in sterile bidistilled water (stock solution e. g. 10 mg/ml) and stored at -20°C (1). This DNA is used with a final concentration of 100 µg/ml.

Salmonella-Shigella (SS) Agar, Modified

SS-Agar, Modified

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Bile salts 8.5 g/L
Brilliant green 0.0003 g/L
Ferric citrate 1.0 g/L
L-Phenylalanine 1.0 g/L
Lactose 10.0 g/L
Neutral red 0.025 g/L
Peptones 12.0 g/L
Sodium citrate 10.0 g/L
Sodium thiosulfate 8.5 g/L

Specification:

pH before autoclaving
..... approx. 7.0 (20°C)

Order-No.
A5856,0500 500 g
A5856,5000 5 kg

Literature: (1) Leifson (1935) *J. Path. Bact.* 40, 476

Comment: This is a selective and differential medium for the isolation of enteric microorganisms, especially *Salmonella* and some *Shigella* species. The medium supplemented with phenylalanine is suitable to distinguish *Salmonella* spp. from *Proteus* spp..

Direction: Suspend 66 g in 1 L of distilled water and heat with frequent agitation until the medium boils. Mix well and pour plates immediately. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Store the prepared medium protected from light at 2-8°C.

SAM see S-(5'-Adenosyl)-L-methionine iodide *BioChemica* Page 68
Sample buffer for immunoassays (detergent-free) see Immunoassay Buffer Page 446
Sample buffer for immunoassays (with detergent) see Immunoassay Buffer Page 446

Saponarin HPLC grade

B

from *Saponaria officinalis*

$C_{27}H_{30}O_{15}$
 $M = 594.53$ g/mol
CAS-No.: 20310-89-8
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.	Quantity
A5314,0010	10 mg
A5314,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Saponin from *Quillaja* Bark

CAS-No.: 8047-15-2
HS-No.: 29389090
EC-No.: 232-462-6

Storage: RT
LGK: 10 - 13

WGK: 1
Warning
H335-H319
P305+P351+P338-P261



Saponin from *Quillaja* Bark pure DAB

B

Specification:

Extinction max. 0.4	Surface-tension [20°C, 0.1% solution]
Foam-rate 6 - 17	 35 - 55 dyn/cm
Muddiness max. 30 TE/F	pH (5 %; H ₂ O) 4.7
Specific density 1.01 - 1.02 g/L	Sapogenin content 10 - 14 %

Order-No.	Quantity
A4518,0010	10 g
A4518,0050	50 g
A4518,0100	100 g

Literature: (1) Francis, G. *et al.* (2002) *British J. Nutrition* **88**, 587-605
(2) Santoni, G. *et al.* (2002) *Infect. Immun.* **70**, 3804-3815
(3) Krutzik, P.O. *et al.* (2004) *Clin. Immunol.* **110**, 206-221
(4) Melan, M.A. (1999) *Methods Mol. Biol.* **115**, 45-55

The biological action of saponins in animal systems: a review.
Candida albicans expresses a Focal Adhesion Kinase-Like Protein That Undergoes Increased Tyrosine Phosphorylation.
Analysis of protein phosphorylation and cellular signaling events by flow cytometry: techniques and clinical applications.
Overview of cell fixatives and cell membrane permeants.

Comment: Saponin is a mixture of terpenoid molecules and glycosides. They permeabilize the cell membrane by interacting with cholesterol present in cell membrane. This results in pores, large enough for the entry of conjugated antibodies. To prevent the leakage of intracellular compounds (proteins, nucleic acids), they must first be treated with a cross-linking reagent such as formaldehyde (crosslinker). Saponin has become the detergent of choice for cytokine staining and phospho-epitope staining protocols. It is typically used at concentrations of 0.1 - 0.5 %. Because saponin is derived from a complex mixture of molecules, different lots vary considerably according to the manufacturer and natural source. Therefore, saponin lots should be titrated for optimal efficacy (3). Saponin can be dissolved in water at 37°C. Stock solutions (e. g. 10 %) are stored at 4°C.

Saponin from *Quillaja* Bark pure

C

Specification:

pH (20 %; H₂O) 4.5 - 5.5
Sapogenin content 10 - 14 %

Order-No.	Quantity
A2542,0100	100 g
A2542,0500	500 g
A2542,1000	1 kg
A2542,10006	6 x 1 kg

Sarcosyl see L(+)-Lactic acid silver salt *BioChemica* Page 477
Sarkine see Hypoxanthine *BioChemica* Page 431
Sarkosyl see N-Lauroylsarcosine sodium salt Page 480

SATA

B

N-Succinimidyl *S*-acetylthioacetate

$C_8H_9NO_5S$
 $M = 231.20$ g/mol
CAS-No.: 76931-93-6
HS-No.: 29309099

Storage: -20°C

Melting point 90 - 93°C

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.	Quantity
A7854,0050	50 mg
A7854,0100	100 mg
A7854,0250	250 mg

Comment: SATA is an amine reactive, water insoluble heterobifunctional crosslinker. The NHS ester reacts with primary amines at pH 7 - 9 to add a protected thiol group that is easily hydrolyzed by hydroxylamine.

SB 3-12 see Sulfobetaine SB 12 Page 778

SBA

B

N-Succinimidyl bromoacetate

 $C_6H_6BrNO_4$

Storage: 2-8°C

Melting point 113 - 115°C

 $M = 236.02 \text{ g/mol}$
HS-No.: 29280090

Specification:

Assay min. 97 %
Identity (NMR) complies

Order-No.
A7874,0050
A7874,0100
Quantity

50 mg

100 mg

Comment: SBA is a sulfhydryl and amine reactive water-insoluble heterobifunctional crosslinker. It is a SIA analog (A7934).

Scarlet Red Scharlach see Sudan IV (C.I. 26105) Page 777
recombinant Mouse SCF see rM SCF Page 704

rHu SCF bioconfident grade



B

recombinant Human Stem Cell Factor
 $M = 20.7 \text{ kDa}$

Storage: -20°C

Sterile filtered through a 0.2 µm filter.

HS-No.: 29371900

Avoid repeated freeze-thaw cycles.

Lyophilized from PBS, pH 7.2.

from *Hordeum vulgare*

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.
A8859,0010
A8859,0050
A8859,0100
A8859,1000
Quantity

10 µg

50 µg

100 µg

1 mg

Comment: Recombinant human SCF contains 165 amino acids and a 16 amino acid histidine-based tag for a total length of 181 amino acids and has a predicted molecular mass of 20.7 kDa including his-tag. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 24 kDa in SDS-PAGE.

rHu SCF



B

recombinant Human Stem Cell Factor
 $M = 18.41 \text{ kDa}$

Storage: -20°C

Lyophilized from conc. solution in water
containing 10 mM acetic acid.

HS-No.: 29371900

from *E. coli*

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin max. 0.1 EU/µg
Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.
A8310,0002
A8310,0010
A8310,0100
Quantity

2 µg

10 µg

100 µg

Comment: Recombinant Human Stem Cell Factor (rHu SCF) produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 165 amino acids and having a molecular mass of 18.41 kDa.

rM SCF bioconfident grade



B

recombinant Mouse Stem Cell Factor
 $M = 20.6 \text{ kDa}$

Storage: -20°C

Sterile filtered through a 0.2 µm filter.

HS-No.: 29371900

Avoid repeated freeze-thaw cycles.

Lyophilized from PBS, pH 7.2.

from *Hordeum vulgare*

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.
A8863,0010
A8863,0050
A8863,0100
A8863,1000
Quantity

10 µg

50 µg

100 µg

1 mg

Comment: Recombinant mouse SCF contains 166 amino acids and a 16 amino acid Histidine-based tag for a total length of 182 amino acids and has a predicted molecular mass of 20.6 kDa. As a result of glycosylation, the recombinant protein migrates as three bands with an apparent molecular mass of 21, 23 and 24 kDa in SDS-PAGE.

rM SCF

B

recombinant Mouse Stem Cell Factor,
recombinant Mouse SCF
lyophilized from a conc. (1mg/ml)
solution in water containing 10 mM
sodium phosphate buffer, pH 6.5
from *E. coli*

M = 18.31 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8241,0002	2 µg
A8241,0010	10 µg
A8241,0100	100 µg

Comment: Recombinant Mouse SCF is a single, non-glycosylated polypeptide chain containing 164 amino acids.

Schaffer's - Solution

C

HS-No.: 38220000

Storage: RT
LGK: 3A
Disposal: 3

Class / PG: 3/III
UN1993
WGK: 2
Warning
H332-H302-H226-H336-H312-H351-
H315-H335-H319-H317
P210-P305+P351+P338-
P301+P330+P331



Composition:

Ethanol (80 %) 667 ml/L
Formaldehyde 37 % 333 ml/L

Order-No.	Quantity
A3199,1000	1 L
A3199,2500	2.5 L

Schardinger-γ-Dextrin see γ-Cyclodextrin *BioChemica* Page 250

Schneider's Drosophila - Insect medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Schneider's Drosophila - Insect medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A2036,1000N	1 L
A2036,5000	5 L
A2036,9010N	10 L
A2036,9050	50 L

Schneider's Drosophila - Insect medium

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A1533,1000	1 L
A1533,5000	5 L
A1533,9010	10 L
A1533,9050	50 L

recombinant Mouse SDF-1α see rM SDF-1α Page 705

rHu SDF-1α

B

recombinant Human Stromal Cell-
Derived Factor-1α,
lyophilized without additives
from *E. coli*

M = 8.01 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8318,0002	2 µg
A8318,0010	10 µg
A8318,0100	100 µg

Comment: Recombinant Human SDF-1α produced in *E. coli* is a non-glycosylated, polypeptide chain containing 68 amino acids and having a molecular mass of 8008 Dalton.

rM SDF-1 α 

B

*recombinant Mouse SDF-1 α ,
recombinant Mouse Stromal Cell-
Derived Factor-1 α , rM CXCL12*
lyophilized from a conc. (1mg/ml) sterile
solution containing 10 mM acetic acid
from *E. coli*

M = 7.92 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8231,0002	2 μ g
A8231,0010	10 μ g
A8231,0100	100 μ g

Comment: Recombinant Mouse SDF-1 α produced in *E. coli* is a non-glycosylated, polypeptide chain containing 68 amino acids and having a molecular mass of 7.92 kDa.

SDS

*Dodecylsulfate sodium salt, Sodium
laurylsulfate, Sodium dodecylsulfate*

$C_{12}H_{25}NaO_4S$
M = 288.38 g/mol
CAS-No.: 151-21-3
HS-No.: 29209010
EC-No.: 205-788-1

Storage: RT
LGK: 10 - 13
Disposal: 3

Class / PG: 4,1/III
UN1325
WGK: 2
Danger
H302-H319-H315-H228-H311-H335
P302+P352-P305+P351+ 338-P210-
P304+P341-P280

Solubility (20°C) 250 g/L (H₂O)**SDS Molecular biology grade**

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
pH (10 %; H₂O; 25°C) 5.0 - 7.0
Loss on drying max. 0.05 %
Chloride max. 0.005 %

Phosphate max. 0.0001 %
Pb max. 0.0001 %
A (1 cm/0.1 M in H₂O)
260 nm max. 0.04
280 nm max. 0.02

Order-No.	Quantity
A2263,0100	100 g
A2263,0500	500 g
A2263,1000	1 kg

SDS ultrapure

B

Specification:

Assay (titr.) min. 99.5 %
pH (0.1 M; H₂O; 25°C) 5.0 - 7.0
Loss on drying max. 0.05 %
Chloride max. 0.005 %
Phosphate max. 0.0001 %

Pb max. 0.0001 %
A (1 cm/0.1 M in H₂O)
260 nm max. 0.04
280 nm max. 0.02

Order-No.	Quantity
A1112,0100	100 g
A1112,0500	500 g
A1112,1000	1 kg
A1112,10006	6 x 1 kg

SDS BioChemica

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (10 %; H₂O; 25°C) 5.0 - 7.0

Loss on drying max. 0.1 %
Chloride max. 0.01 %
Phosphate max. 0.01 %

Order-No.	Quantity
A2572,0250	250 g
A2572,0500	500 g
A2572,1000	1 kg

SDS IPC grade

C

Specification:

Assay (titr.) min. 99.5 %
*C*₁₂-Alcohol max. 0.01 %

A (1 cm/0.005 M in water HPLC grade)
210 nm max. 0.1
230 nm max. 0.05
260 nm max. 0.02

Order-No.	Quantity
A1020,0005	5 g
A1020,0010	10 g
A1020,0025	25 g

SDS pure Ph. Eur

C

Specification:

Assay (titr.) min. 85 %
Alkaline reacting impurities complies
Identity complies
Unesterified alcohols max. 4.0 %
Sodium chloride complies

Sodium sulfate complies

Order-No.	Quantity
A4259,0250	250 g
A4259,0500	500 g
A4259,1000	1 kg
A4259,5000	5 kg

SDS pure

C

Specification:

Assay (titr.) min. 95 %	Sodium chloride max. 1.0 %
Appearance of solution yellowish	Sodium sulfate max. 2.0 %
Appearance of substance white to yellowish powder	Loss on drying max. 1 %
pH (10 %; H ₂ O; 25°C) 7.0 - 10.5	

Order-No.	Quantity
A1502,0250	250 g
A1502,0500	500 g
A1502,1000	1 kg
A1502,5000	5 kg

- Literature:** (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685
 (2) Harewood, K. & Wolff III, J.S. (1973) *Anal. Biochem.* **55**, 573-581
 (3) Nielsen, T.B. & Reynolds, J.A. (1978) *Methods Enzymol.* **48**, 3-10
 (4) Suzuki, H. & Terada, T. (1988) *Anal. Biochem.* **172**, 259-263

Cleavage of structural proteins during the assembly of the head of Bacteriophage T4.
 A rapid electrophoretic procedure for the detection of SDS-released Oncorna-viral RNA using polyacrylamide-agarose gels.
 Measurements of molecular weights by gel electrophoresis.
 Removal of Dodecyl sulfate from protein solution.

Comment: SDS is an anionic detergent which binds nearly to all water-soluble proteins (in a ratio of approx. 1.4 g SDS / g protein). This binding leads to a conformational change and allows to separate proteins by size (not by charge or tertiary structure). According to Laemmli (1) SDS should be used at a concentration of 0.1 % in the gel and in the electrophoresis buffer.
Note: SDS is harmful. Handle the powder in a chemical fume hood. Do not breathe dust. SDS may precipitate in stock solutions (10 - 20 %) at temperatures below 15°C and in the presence of potassium ions (4). Dissolve precipitated SDS in a water bath above 37°C.

SDS grained pure



B

Specification:

Assay (titr.) min. 97 %	Sodium sulfate max. 2.0 %
Appearance of substance white to pale yellow granulate	Loss on drying max. 2.5 %
pH (10 %; H ₂ O) 7.0 - 10.5 (20°C)	
Sodium chloride max. 1.0 %	

Order-No.	Quantity
A7249,0250	250 g
A7249,0500	500 g
A7249,1000	1 kg
A7249,5000	5 kg

SDS - Solutions

HS-No.: 29209010

Storage: RT
 Disposal: 3

WGK: 2
 Warning
 H319-H315
 P305+P351+P338



SDS - Solution 20 % Molecular biology grade

B

Composition:

SDS (A2263) 200 g/L

Specification:

DNases/RNases/Proteases	A (1 cm/0.1 M HPLC water)
. not detectable	260 nm max. 0.03
Appearance of solution clear, colorless	280 nm max. 0.02

Order-No.	Quantity
A0675,0250	250 ml
A0675,0500	500 ml
A0675,1000	1 L

SDS - Solution 20 % pure

B

Composition:

SDS (1502) 200 g/L

Specification:

Appearance of solution clear, yellowish
pH (25°C) 7.0 - 10.5

Order-No.	Quantity
A3942,0250	250 ml
A3942,0500	500 ml
A3942,1000	1 L

SDS - Solution 10 % Molecular biology grade

B

Composition:

SDS (A2263) 100 g/L

Specification:

DNases/RNases/Proteases	A (1 cm/0.1 M HPLC water)
. not detectable	260 nm max. 0.03
Appearance of solution clear, colorless	280 nm max. 0.02
pH (25°C) 5.0 - 7.0	

Order-No.	Quantity
A0676,0250	250 ml
A0676,0500	500 ml
A0676,1000	1 L
A0676,10006	6 x 1 L

SDS - Solution 10 % pure

B

Composition:

SDS (1502) 100 g/L

Specification:

Appearance of solution clear, yellowish
pH (25°C) 7.0 - 10.5

Order-No.	Quantity
A3950,0250	250 ml
A3950,0500	500 ml
A3950,1000	1 L

Comment: SDS precipitates at temperatures below 15°C. It can be dissolved by warming in a water bath above 37°C. Please note that product A3942 and A3950 might be slightly yellow, clear solutions.

TGS buffer, Laemmli buffer

HS-No.: 38220000

Storage: RT

B

Composition:

Composition:	Specification:
Glucose (A3707) 144.13 g/L (1.92 M)	pH (H ₂ O; 25°C) 8.3 ± 0.1
SDS (A1112) 10 g/L (1 %)	
Tris (A1086) 30.29 g/L (0.25 M)	

Order-No.	Quantity
A1415,0250	250 ml
A1415,0500	500 ml
A1415,1000	1 L

Literature: (1) Laemmli, U.K. (1970) *Nature* **227**, 680-685

Cleavage of structural proteins during the assembly of the head of Bacteriophage T4.

Comment: Laemmli has introduced an SDS-Tris-Glycine buffer system (pH 8.3). This buffer is supplied as a 10x concentrate.

B

Composition:

Glycine (A3707)	72.06 g/L
SDS (A1112)	5 g/L
Tris (A1086)	15.15 g/L

Specification:

pH (H₂O; 25°C) 8.3 ± 0.1

Order-No.	Quantity
A3376,0500	500 ml
A3376,1000	1 L
A3376,5000	5 L

B

Composition:

Glycine (A3707)	14.41 g/L
SDS (A1112)	1 g/L
Tris (A1086)	3.03 g/L

Specification:

pH (H₂O) 8.3 ± 0.1 (25°C)

Order-No.	Quantity
A3384,1000	1 L
A3384.5000	5 L

Density approx. 1430 kg/
m³

CAS-No.: 14464-46-1
HS-No.: 25051000
EC-No.: 231-545-4

Storage: RT
LGK: 10 - 13

WGK: nwa

C

acid washed and heated

Specification:

Acid-soluble Fe	max. 0.01 %
HCl-soluble subst.	max. 0.15 %
Loss on drying	max. 0.1 %
Particle size	0.1 - 0.3 mm
Chloride	max. 0.005 %

Order-No.	Quantity
A0644,0500	500 g
A0644,1000	1 kg
A0644,10006	6 x 1 kg
A0644,2500	2.5 kg
A0644,25004	4 x 2,5 kg
A0644,5000	5 kg
A0644,9010	10 kg
A0644,9025	25 kg

C

acid washed; suitable for column chromatography

Specification:

Loss on drying

Particle size	0.1 - 0.3 mm
Chloride	max. 0.005 %
Fe	max. 0.005 %
Pb	max. 0.001 %

Order-No.	Quantity
A0638,1000	1 kg
A0638,10006	6 x 1 kg
A0638,2500	2.5 kg
A0638,25004	4 x 2,5 kg
A0638,5000	5 kg
A0638,9010	10 kg
A0638,9025	25 kg

sec. Propanol see 2-Propanol (Isopropanol) Page 666

Seignette salt see Potassium sodium tartrate tetrahydrate Page 660

Selenite Broth Base

B

HS-No.: 38220000

Storage: RT
LGK: 10 - 13Warning
H373-H302-H332
P302+P352

Composition:

Buffers 10.0 g/L
Lactose 4.0 g/L
Peptones 5.0 g/L

Specification:

pH before autoclaving . . . approx. 7.0 (20°C)

Order-No.
A3924,0500
A3924,5000Quantity
500 g
5 kg

♦ Attention: Please note that a supplement (A6792) exists for this agar. Please order separately.

Literature: (1) Leifson, E. (1936) *Am. J. Hyg.* **24** (2), 423-432.

A New Selenite Enrichment Media for the Isolation of Typhoid and Paratyphoid (Salmonella) Bacilli.

Comment: This is a base designed for the preparation of the enrichment media used to isolate *Salmonella* and some *Shigella* species**Direction:** Dissolve 4 g of sodium biselenite supplement (A6792) in 1 L of distilled water, add 19 g of the base, heat gently to dissolve the medium. Mix well and distribute into final containers. If the broth is not used on the day of preparation, sterilize in a boiling water bath at 100°C for 10 min. Avoid excessive overheating and cool quickly. Do not sterilize by autoclaving. Store the prepared medium at 2-8°C.

Selenite Supplement see Supplements for Microbiological Media Page 786

Senecionin HPLC grade

B

Aureine, 12-Hydroxysenecionane-11,16-dione
from *Senecio vulgaris* $C_{18}H_{25}NO_5$
 $M = 335.39$ g/mol
CAS-No.: 130-01-8
HS-No.: 29161995Storage: 2-8°C
LGK: 10 - 13Class / PG: 6.1/II
UN2811
Danger
H301-H373
P270-P260-P314-P301+P310

Specification:

Assay min. 99 %

Order-No. Quantity
A2071,0020 20 mg
A2071,0020DOC 20 mg
A2071,0050 50 mg
A2071,0050DOC 50 mgComment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with GC-MS, TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Senecionin-N-oxide HPLC grade



B

12-Hydroxysenecionan-11,16-dion-4-oxide
from *Senecio vulgaris* $C_{18}H_{25}NO_6$
 $M = 351.39$ g/mol
CAS-No.: 13268-67-2
HS-No.: 29161995Storage: 2-8°C
LGK: 10 - 13Class / PG: 6.1/II
UN2811
Danger
H331-H311-H301
P309+P311-P262-P260

Specification:

Assay min. 95 %

Order-No. Quantity
A8678,0010 10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Seneciphyllin HPLC grade

B

13,19-Didehydro-12-hydroxy senecionane-11,16-dione
from *Senecio vulgaris* $C_{18}H_{23}NO_5$
 $M = 333.38$ g/mol
CAS-No.: 480-81-9
HS-No.: 29161995Storage: 2-8°C
LGK: 10 - 13Class / PG: 6.1/II
UN2811
Danger
H373-H301
P301+P310-P270-P260-P314

Specification:

Assay min. 99 %

Order-No. Quantity
A2072,0020 20 mg
A2072,0020DOC 20 mg
A2072,0050 50 mg
A2072,0050DOC 50 mgComment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with GC-MS, TLC, ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Seneciophyllin-N-oxide HPLC grade



B

from *Senecio vulgaris*

$C_{18}H_{25}NO_6$
 $M = 349.37$ g/mol
CAS-No.: 38710-26-8
HS-No.: 29161995

Storage: 2-8°C

Class / PG: 6.1/II
UN2811
Danger
H331-H311-H301
P262-P309+P311-P260


Specification:

Assay min. 97 %

Order-No.
A8684,0010

Quantity
10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Senkirkin HPLC grade

B

Renardin
from *Tussilago farfara*

$C_{19}H_{27}NO_6$
 $M = 365.40$ g/mol
CAS-No.: 6882-01-5
HS-No.: 29420000

Storage: 2-8°C
LGK: 10 - 13

Class / PG: 6.1/II
UN2811
Danger
H301-H373
P301+P310-P270-P314-P260


Specification:

Assay min. 95 %

Order-No.
A6765,0010

Quantity
10 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Sennosid A HPLC grade

B

from *Cassia angustifolia*

$C_{42}H_{38}O_{20}$
 $M = 862.72$ g/mol
CAS-No.: 81-27-6
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.
A6758,0010
A6758,0020
A6758,0050

Quantity
10 mg
20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Sennosid B HPLC grade

B

from *Cassia angustifolia*

$C_{42}H_{38}O_{20}$
 $M = 862.72$ g/mol
CAS-No.: 81-27-6
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.
A6763,0010
A6763,0020
A6763,0050

Quantity
10 mg
20 mg
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

SeparateIT Polymer Solution



B

HS-No.: 38220000

Storage: 2-8°C

- supplied as 10X ready-to-use reagent
- Polymer Solution Improving Acrylamid : Bis (29:1) Gel Electrophoresis

Order-No.
A8587,0050
A8587,0100
A8587,0500

Quantity
50 ml
100 ml
500 ml

Comment: SeparateIT gels represent a novel gel matrix for DNA electrophoresis. Gel polymers are arranged in a conceptually different way, in accordance with a new theoretical model of gel electrophoresis. SeparateIT gels selectively retard the migration of large molecules, so that DNA bands remain sharp but are more spread out relative to each other. Thanks to this increased spacing, resolving power of SeparateIT gels is at least twice higher compared to resolving power of any other gels, including polyacrylamide gels. This polymer has been optimized for the gels with a ratio of acrylamide to N,N-methylene-bisacrylamide of 29 : 1. The polymer is not optimized for denaturing, urea-containing polyacrylamide gels.

Separation medium for Lymphocytes see Lympho-Pure Page 498

L-Serine

L-2-Amino-3-hydroxypropionic acid

C₃H₇NO₃

Storage: RT

Solubility (20°C) 364 g/L (H₂O)

M = 105.09 g/mol

LGK: 10 - 13

CAS-No.: 56-45-1

HS-No.: 29225000

EC-No.: 200-274-3

L-Serine Cell culture grade

B

Specification:

Pyrogen test	 complies	Chloride	 max. 0.02 %
Assay (titr.)	 min. 99 %	Sulfate	 max. 0.02 %
α20°C/D; 10 %, 2 N HCl	 +14.0° - +16.0°	As	 max. 0.0001 %
Other amino acids	 max. 0.5 %	Fe	 max. 0.001 %
Ammonium	 max. 0.02 %	Pb	 max. 0.001 %

Order-No. Quantity

A3943,0025 25 g

A3943,0100 100 g

A3943,0500 500 g

A3943,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Serine BioChemica

B

Specification:

Assay (titr.)	 min. 99 %	Chloride	 max. 0.02 %
α20°C/D; 10 %, 2 N HCl	 +14.0° - +16.0°	Sulfate	 max. 0.02 %
Heavy metals (as Pb)	 max. 0.001 %		
Insoluble matter	 complies		
Other amino acids	 max. 0.5 %		
Ammonium	 max. 0.02 %		

Order-No. Quantity

A3973,0025 25 g

A3973,0100 100 g

A3973,0250 250 g

A3973,0500 500 g

A3973,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Serine pure Ph. Eur., USP

C

Specification:

Assay (titr.)	 98.5 - 101.0 %	Organic vol. impurities	 complies
α20°C/D; 10 %, 2 N HCl	 +14.0° - +16.0°	Residue on ignition	 max. 0.1 %
α25°C/D; 10 %, 2 N HCl	 +14.0° - +15.6°	Other amino acids	 max. 0.5 %
Appearance of solution	 complies	Ammonium	 max. 0.02 %
Heavy metals (as Pb)	 max. 0.001 %	Chloride	 max. 0.02 %
Identity	 complies	Sulfate	 max. 0.03 %
Loss on drying	 max. 0.2 %	Fe	 max. 0.001 %

Order-No. Quantity

A1708,0025 25 g

A1708,0100 100 g

A1708,0250 250 g

A1708,0500 500 g

A1708,1000 1 kg

A1708,10006 6 x 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

Serum glutamic oxaloacetic transaminase (SGOT) see Glutamate Oxaloacetate Transaminase (GOT), human Page 379

Sesamol

C

3,4-Methylenedioxyphe¹molC₇H₆NO₃

Storage: 2-8°C

WGK: 1

Melting point 63 - 65°C

M = 138.12 g/mol

LGK: 10 - 13

CAS-No.: 533-31-3

Disposal: 3

HS-No.: 29329900

EC-No.: 208-561-5

Specification:

Assay min. 98 %

Order-No. Quantity

A1009,0025 25 g

A1009,0100 100 g

rHu SF20 bioconfident grade



B

recombinant Human Stromal Cell-Derived Growth Factor 20

M = 18.1 kDa

Storage: -20°C

Sterile filtered through a 0.2 µm filter.

HS-No.: 29371900

Avoid repeated freeze-thaw cycles.

Lyophilized from PBS, pH 7.2.

from *Hordeum vulgare*

• We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

• Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test)	 max. 0.05 EU/µg
Pyrogen test (MAT)	 complies
Assay (SDS-PAGE)	 min. 98 %

Order-No. Quantity

A8866,0050 50 µg

A8866,0100 100 µg

A8866,1000 1 mg

Comment: Recombinant human Stromal cell-derived growth factor 20 contains 143 amino acids and a 16 amino acid histidine-based tag for a total length of 159 amino acids and has a predicted molecular mass of 18.1 kDa including his-tag. The recombinant protein migrates with an apparent molecular mass of 24 kDa in SDS-PAGE.

SGOT see Glutamate Oxaloacetate Transaminase (GOT), human Page 379

rM SHH



B

recombinant Mouse Sonic Hedgehog
lyophilized from a sterile solution
containing 10 mM sodium phosphate
and 75 mM NaCl, pH 7.5
from *E. coli*

M = 19.8 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 97 %
Assay (SDS-PAGE) min. 97 %

Order-No.	Quantity
A8529,0005	5 µg
A8529,0025	25 µg
A8529,0100	100 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Shikimic acid pure

B

3,4,5-Trihydroxy-1-cyclohexenecarboxylic acid

*C*₇*H*₁₀*O*₅
M = 174.15 g/mol
CAS-No.: 138-59-0
HS-No.: 29181998
EC-No.: 205-334-2

Storage: RT

WGK: 3
P260-P262

Specification:

Assay (titr.) min. 97 %
α20°C/D; 2 %, H₂O -165° - -185°
Sulfated ash max. 1 %

Order-No.	Quantity
A7279,0001	1 g

SIA

B

***N*-Succinimidyl iodoacetate**

*C*₆*H*₆*INO*₄
M = 283.02 g/mol
CAS-No.: 39028-27-8
HS-No.: 29280090

Storage: 2-8°C

Melting point 144 - 145°C

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.	Quantity
A7934,0050	50 mg
A7934,0100	100 mg

Comment: SIA is a sulhydryl and amine reactive water-insoluble heterobifunctional crosslinker. The NHS ester reacts with primary amines at pH 7 - 9. The iodoacetyl group reacts toward SH-groups at pH < 7.5.

Sialic acid BioChemica

B

NANA, *N*-Acetylneuraminic acid
from bird's nests

*C*₁₁*H*₁₉*NO*₉
M = 309.28 g/mol
CAS-No.: 131-48-6
HS-No.: 29241900
EC-No.: 205-023-1

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

Melting point 182 - 188°C (dec.)

Specification:

Assay (titr.) min. 98 %
α20°C/D; 1 %, H₂O -33° ± 2°

Order-No.	Quantity
A1002,0100	100 mg
A1002,0500	500 mg
A1002,0001	1 g

Literature: (1) Warren, L. (1959) *J. Biol. Chem.* **234**, 1971-1975

(2) Hammond, K.S. & Papermaster, D.S. (1976) *Anal. Biochem.* **74**, 292-297

(3) Schauer, R. (1985) *Trends Biochem. Sci.* **10**, 357-360

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, pages 17.16.3., 17.18.8-19 (Suppl. 32) Greene Publishing & Wiley-Interscience, New York.

The Thiobarbituric acid assay of Sialic acid.

Fluorometric assay for Sialic acid in the picomole range: A modification of the Thiobarbituric acid assay.

Sialic acids and their role as biological masks.

Silane A 174 see 3-Methacryloxypropyl trimethoxysilane Page 532

Silica gel 60

*O*₂*Si*
M = 60.09 g/mol
CAS-No.: 7631-86-9
HS-No.: 28112200
EC-No.: 231-545-4

Storage: RT

P260

Silica gel 60 (0.2 mm - 0.5 mm)

C

Specification:

Loss on drying max. 5 %
Nominal pore diameter 55 - 65 Å
Pore volume 0.7 - 0.8 ml/g
Spec. surface 450 - 550 m²/g
pH (10 % suspension in H₂O) 6.5 - 7.5

Order-No.	Quantity
A5275,1000	1 kg
A5275,2500	2.5 kg

Silica gel 60 (0.040 mm - 0.063 mm)

C

Specification:

Loss on drying	 max. 5 %	pH (10 % suspension in H ₂ O)	 6.5 - 7.5
Nominal pore diameter	 55 - 65 Å		
Pore volume	 0.7 - 0.8 ml/g		
Spec. surface	 450 - 550 m ² /g		

Order-No.	Quantity
A5293,1000	1 kg
A5293,10006	6 x 1 kg
A5293,2500	2.5 kg

Silica gel 60 (0.063 mm - 0.200 mm)

C

Specification:

Loss on drying	 max. 5 %	pH (10 % suspension in H ₂ O)	 6.5 - 7.5
Nominal pore diameter	 55 - 65 Å		
Pore volume	 0.7 - 0.8 ml/g		
Spec. surface	 450 - 550 m ² /g		

Order-No.	Quantity
A5267,1000	1 kg
A5267,10006	6 x 1 kg
A5267,2500	2.5 kg

Silica gel orange

with moisture indicator

HS-No.: 28112200

Storage: RT

WGK: nwg

Particle size 1 - 3 mm

Transition interval orange - white

LGK: 10 - 13

Disposal: 14

Silica Gel - grained orange

C

Specification:

Reclaimable at	 130 - 175°C
Water absorbency	 min. 25 %

Order-No.	Quantity
A7220,1000	1 L
A7220,10006	6 x 1 L
A7220,2500	2.5 L
A7220,25004	4 x 2.5 L
A7220,5000	5 L
A7220,9010	10 L

Silica gel - Beads orange

C

Specification:

Bulk density	 approx. 720 - 770 g/L
Reclaimable at	 130 - 175°C
Water absorbency	 min. 25 %

Order-No.	Quantity
A4569,1000	1 L
A4569,10006	6 x 1 L
A4569,2500	2.5 L
A4569,25004	4 x 2.5 L
A4569,5000	5 L
A4569,9010	10 L

Silica powdered, pure DAB

C

Aerosil, SiO₂O₂Si

Storage: RT

WGK: nwg

Melting point 1710°C

M = 60.08 g/mol · xH₂O

CAS-No.: 10279-57-9

HS-No.: 28112200

EC-No.: 231-545-4

LGK: 10 - 13

Specification:

Assay (gravimetr.)	 99.0 - 100.5 %	pH (3.3 %; H ₂ O)	 3.0 - 8.0
Heavy metals (as Pb)	 max. 0.0025 %	Chloride	 max. 0.1 %
Identity	 complies	Sulfate	 max. 0.5 %
Loss on ignition	 max. 8.5 %	Fe	 max. 0.04 %

Order-No.	Quantity
A2374,0500	500 g
A2374,1000	1 kg
A2374,5000	5 kg

Silicon-free greases (glisseal®)

HS-No.: 34039900

Storage: RT

Silicon-free greases (glisseal® HV)

C

Silicon-free grease with extraordinary temperature and chemical resistance, no dripping point in the range of -40 to +300°C. Can easily be removed with deconex; withstands high vacuums. no dripping point

Order-No.	Quantity
A3575,0010	10 g
A3575,0060	60 g
A3575,1000	1 kg

® glisseal is a trademark of Borer Chemie AG Zuchwil. Switzerland

Silicon-free greases (glisseal® N)

C

no dripping point

WGK: 1

Order-No.	Quantity
A3526,0010	10 g
A3526,0060	60 g
A3526,1000	1 kg

® glisseal is a trademark of Borer Chemie AG Zuchwil, Switzerland

Silver carbonate pure

C

Solubility (20°C) 0.032 g/L (H₂O)
Thermal dec. 210°C

Ag₂CO₃
M = 275.75 g/mol
CAS-No.: 534-16-7
HS-No.: 28432900
EC-No.: 208-590-3

Storage: RT
LGK: 10-13
Disposal: 27

WGK: 2
Danger
H318
P305+P351+P338-P313-P260



Specification:

Assay (titr.) min. 99 %	Pb max. 0.005 %
Sulfate max. 0.005 %	
Cd max. 0.005 %	
Fe max. 0.005 %	

Order-No.	Quantity
A1524,0010	10 g
A1524,0025	25 g
A1524,0100	100 g

Silver L-lactate see L(+)-Lactic acid silver salt BioChemica Page 477

Silver methanesulfonate pure

C

CH₃AgO₃S
M = 292.97 g/mol
CAS-No.: 2386-52-9
HS-No.: 28432900
EC-No.: 219-199-2

Storage: RT
LGK: 13
Disposal: 27

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 3 %
Solubility (5 %; H ₂ O) clear, colorless

Order-No.	Quantity
A2810,0010	10 g
A2810,0025	25 g
A2810,0100	100 g

Silver nitrate

Boiling point 444°C
Melting point 212°C
Solubility (20°C) 2150 g/L (H₂O)

AgNO₃
M = 169.87 g/mol
CAS-No.: 7761-88-8
HS-No.: 28432100
EC-No.: 231-853-9

Storage: RT
LGK: 5.1 B
Disposal: 27

Class / PG: 5.1/II
UN1493
WGK: 3
Danger
H410-H272-H314
P273-P301+P330+P331-
P305+P351+P338-P280



Silver nitrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable	Fe max. 0.0002 %
Assay (titr.) min. 99.8 %	Mn max. 0.0005 %
Chloride max. 0.0005 %	Ni max. 0.0005 %
Sulfate max. 0.002 %	Pb max. 0.001 %
Cd max. 0.0001 %	Zn max. 0.0001 %

Order-No.	Quantity
A3944,0025	25 g
A3944,0050	50 g
A3944,0100	100 g
A3944,0250	250 g

Silver nitrate BioChemica

B

suitable for protein and DNA staining

Specification:

Assay (titr.) min. 99.8 %	Cu max. 0.0005 %
Insoluble matter complies	Fe max. 0.0005 %
Chloride max. 0.0005 %	Pb max. 0.0005 %
Nitrite max. 0.05 %	
Sulfate max. 0.002 %	

Order-No.	Quantity
A3972,0025	25 g
A3972,0050	50 g
A3972,0100	100 g
A3972,0250	250 g

Silver nitrate p. A.

C

Specification:

Assay (titr.) min. 99.8 %	Mn max. 0.0005 %
Chloride max. 0.0005 %	Ni max. 0.0005 %
Sulfate max. 0.002 %	Pb max. 0.001 %
Cd max. 0.0001 %	Zn max. 0.0001 %
Fe max. 0.0002 %	

Order-No.	Quantity
A0536,0025	25 g
A0536,0050	50 g
A0536,0100	100 g
A0536,0250	250 g

Silver nitrate pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.8 - 100.5 %	Cu	complies
Acidic/alkaline react. subst.	complies	Pb	complies
Appearance of solution	complies		
Identity	complies		
Other salts	max. 0.3 %		
Al	complies		
Bi	complies		

Order-No.	Quantity
A1376,0025	25 g
A1376,0050	50 g
A1376,0100	100 g
A1376,0250	250 g
A1376,1000	1 kg
A1376,10006	6 x 1 kg

Literature: (1) Porro, M. *et al.* (1982) *Anal. Biochem.* **127**, 316-321

(2) Schoenle, E.J. *et al.* (1984) *J. Biol. Chem.* **259**, 12112-12116

(3) Gardiner, K. *et al.* (1986) *Somatic Cell Mol. Genetics* **12**, 185-195

(4) Blum, H. *et al.* (1987) *Electrophoresis* **8**, 93-99

(5) Hochstrasser, D.F. *et al.* (1988) *Anal. Biochem.* **173**, 424-435

(6) Nesterenko, M.V. *et al.* (1994) *J. Biochem. Biophys. Methods* **28**, 239-242

(7) Desnoyers, S. *et al.* (1995) *Anal. Biochem.* **232**, 138-140

(8) Swain M. & Ross, N.W. (1995) *Electrophoresis* **16**, 948-951

Ultrasensitive silver-stain method for the detection of proteins in polyacrylamide gels and immunoprecipitates on agarose gels.

Insulin-induced rapid decrease of a major protein in fat cell plasma membranes.

Fractionation of large mammalian DNA restriction fragments using vertical pulsed-field gradient gel electrophoresis.

Improved silver staining of plant proteins, RNA and DNA in polyacrylamide gels.

Methods for increasing the resolution of two-dimensional protein electrophoresis.

A simple modification of Blum's silver stain method allows for 30 minute detection of proteins in polyacrylamide gels.

Rapid removal of nonspecific background in silver-stained polyacrylamide gels.

A silver stain protocol for proteins yielding high resolution and transparent background in SDS-polyacrylamide gels.

Comment: The staining with silver is one of the most sensitive detection methods for proteins (e. g. ref 1) and nucleic acids (e.g. ref 3). The sensitivity has been improved continuously by modifying the protocols adapted to the experimental conditions. A common protocol is not recommended. We would like to refer to the cited literature, which represents a small survey of different methods. The application of the non-ammonia silver nitrate staining should be preferred as it is less toxic than the ammonia silver staining.

Caution: To prevent staining artifacts gloves should be worn. Also use deionized water and well cleaned glassware - no plastics. Ammonia silver nitrate is toxic and volatile. Handle under a chemical fume hood only. Before disposing treat the solution with HCl (5).

Silver nitrate - Solutions

AgNO₃ - Solutions

HS-No.: 28432100

EC-No.: 231-853-9

Storage: RT

Silver nitrate - Solution 10 % p. A.

C

LGK: 8 B

Class / PG: 8/II

UN1760

WGK: 3

Danger

H411-H314

P273-P305+P351+P338-

P301+P330+P331-P280



Specification:

Assay (titr.)	min. 10 %	Mn	max. 0.0005 %
Chloride	max. 0.0005 %	Ni	max. 0.0005 %
Sulfate	max. 0.002 %	Pb	max. 0.001 %
Cd	max. 0.0001 %	Zn	max. 0.0001 %
Fe	max. 0.0002 %		

Order-No.	Quantity
A2683,0100	100 ml
A2683,0250	250 ml
A2683,0500	500 ml
A2683,1000	1 L

Silver nitrate - Solution 5 % p. A.

C

LGK: 8 B

Class / PG: 8/II

UN1760

WGK: 2

Warning

H319-H411-H315

P301+P330+P331-P305+P351+P338-

P280



Specification:

Assay (titr.)	min. 5 %	Ni	max. 0.0005 %
Chloride	max. 0.0005 %	Pb	max. 0.001 %
Sulfate	max. 0.002 %	Zn	max. 0.0001 %
Cd	max. 0.0001 %		
Fe	max. 0.0002 %		
Mn	max. 0.0005 %		

Order-No.	Quantity
A2691,0100	100 ml
A2691,0250	250 ml
A2691,0500	500 ml
A2691,1000	1 L
A2691,10006	6 x 1 L

Silver nitrate - Solution 2 % p. A.

C

LGK: 10 - 13

WGK: 2

H412

P273

Specification:

Assay (titr.)	min. 2 %	Mn	max. 0.0005 %
Chloride	max. 0.0005 %	Ni	max. 0.0005 %
Sulfate	max. 0.002 %	Pb	max. 0.001 %
Cd	max. 0.0001 %	Zn	max. 0.0001 %
Fe	max. 0.0002 %		

Order-No.	Quantity
A2695,0100	100 ml
A2695,0250	250 ml
A2695,0500	500 ml
A2695,1000	1 L

Silver nitrate - Standard volumetric solutions

HS-No.: 38220000
EC-No.: 231-853-9

Silver nitrate - Standard volumetric solution (1 M)

1 mol/L (1 N Solution)

Storage: RT
LGK: 8 B

Class / PG: 8/II
UN1760
WGK: 3
Danger
H411-H314
P301+P330+P331-P273-
P305+P351+P338-P280



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2698,0100	100 ml
A2698,0250	250 ml
A2698,0500	500 ml
A2698,1000	1 L
A2698,10006	6 x 1 L

Silver nitrate - Standard volumetric solution (0.5 M)

0.5 mol/L (0.5 N Solution)

Storage: RT
LGK: 8 B

Class / PG: 8/II
UN1760
WGK: 3
Warning
H319-H411-H315
P301+P330+P331-P280-
P305+P351+P338-P273



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2718,0250	250 ml
A2718,0500	500 ml
A2718,1000	1 L
A2718,10006	6 x 1 L
A2718,2500	2.5 L

Silver nitrate - Standard volumetric solution (0.4 M)

0.4 mol/L (0.4 N Solution)

Storage: RT
LGK: 8 B

Class / PG: 8/II
UN1760
WGK: 3
Warning
H411-H319-H315
P305+P351+P338-P273-
P301+P330+P331-P280



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2723,0250	250 ml
A2723,0500	500 ml
A2723,1000	1 L

Silver nitrate - Standard volumetric solution (0.3 M)

0.3 mol/L (0.3 N Solution)

Storage: RT
LGK: 8 B

Class / PG: 8/II
UN1760
WGK: 3
Warning
H315-H411-H319
P273-P305+P351+P338-P280-
P301+P330+P331



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2484,0250	250 ml
A2484,0500	500 ml
A2484,1000	1 L

Silver nitrate - Standard volumetric solution (0.25 M)

0.25 mol/L (0.25 N Solution)

Storage: RT
LGK: 8 BClass / PG: 8/II
UN1760
WGK: 3
Warning
H315-H411-H319
P301+P330+P331-P305+P351+P338-
P273-P280

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2100,0250	250 ml
A2100,0500	500 ml
A2100,1000	1 L

Silver nitrate - Standard volumetric solution (0.2 M)

0.2 mol/L (0.2 N Solution)

Storage: RT
LGK: 8 BClass / PG: 8/II
UN1760
WGK: 3
Warning
H319-H315-H411
P301+P330+P331-P273-
P305+P351+P338-P280

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2700,0250	250 ml
A2700,0500	500 ml
A2700,1000	1 L

Silver nitrate - Standard volumetric solution (0.1 M)

0.1 mol/L (0.1 N Solution)

Storage: RT
LGK: 10 - 13WGK: 2
Warning
H315-H412-H319
P305+P351+P338-P280-P273-
P301+P330+P331

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1503,0250	250 ml
A1503,0500	500 ml
A1503,1000	1 L
A1503,10006	6 x 1 L
A1503,2500	2.5 L
A1503,25004	4 x 2,5 L

Silver nitrate - Standard volumetric solution (0.1 M) in Methanol

0.1 mol/L (0.1 N Solution)

Storage: RT
LGK: 3 AClass / PG: 3(6.1)/II
UN1992
WGK: 3
Danger
H370-H225-H301-H331-H311-H412
P307+P311-P210-P280-P273

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3331,0250	250 ml
A3331,0500	500 ml
A3331,1000	1 L

Silver nitrate - Standard volumetric solution (0.05 M)

0.05 mol/L (0.05 N Solution)

Storage: RT
LGK: 10 - 13WGK: 2
H412
P273

C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2757,0500	500 ml
A2757,1000	1 L
A2757,10006	6 x 1 L
A2757,2500	2.5 L

Silver nitrate - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2715,0500	500 ml
A2715,1000	1 L
A2715,10006	6 x 1 L
A2715,2500	2.5 L
A2715,25004	4 x 2.5 L

Silver nitrate - Standard volumetric solution (0.005 M)

C

0.005 mol/L (0.005 N Solution)

Storage: RT
LGK: 10 - 13

WGK: 2

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2721,0500	500 ml
A2721,1000	1 L
A2721,2500	2.5 L

Silver nitrate - Standard volumetric solution (1/35.5 M)

C

1/35.5 mol/L (1/35.5 N Solution)

Storage: RT
LGK: 8 B

WGK: 2
P273

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A7318,0500	500 ml
A7318,1000	1 L
A7318,10006	6 x 1 L
A7318,2500	2.5 L

Silver sulfate

Ag₂SO₄

Ag₂O₄S

Storage: RT
LGK: 10 - 13
Disposal: 27

WGK: 3
Danger
H318
P260-P313-P305+P351+P338

Melting point 655°C
Solubility (25°C) 8 g/L (H₂O)

M = 311.79 g/mol
CAS-No.: 10294-26-5
HS-No.: 28432900
EC-No.: 233-653-7



Silver sulfate p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Chloride max. 0.001 %
Nitrate max. 0.001 %
Cu max. 0.0005 %

Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A0633,0010	10 g
A0633,0025	25 g
A0633,0100	100 g

Silver sulfate pure

C

Specification:

Assay (titr.) min. 98.5 %
HCl non-precip. matter max. 0.3 %
Identity complies
Chloride max. 0.002 %

Cu max. 0.005 %
Fe max. 0.005 %
Pb max. 0.005 %

Order-No.	Quantity
A5598,0025	25 g
A5598,0100	100 g
A5598,0250	250 g

Silver sulfate - Sulfuric acid - Solutions for COD-determination

HS-No.: 38220000

Storage: RT
LGK: 8 B

Class / PG: 8/II
UN1830
WGK: 1
Danger
H314-H290
P280-P313-P305+P351+P338



Silver sulfate - Sulfuric acid - Solution (10 % Silver sulfate) for COD-determination

C

Composition:

Silver sulfate (A0633) 100 g/L
Sulfuric acid (A0655) 900 ml/L
Water (A1991) 100 ml/L

Order-No.	Quantity
A3336,0500	500 ml
A3336,1000	1 L

Silver sulfate - Sulfuric acid - Solution (8 % Silver sulfate) for COD-determination

C

DIN 38409 (H43)

Composition:

Silver sulfate (A0633) 80 g/L
Sulfuric acid (A0655) 1000 ml/L

Order-No.	Quantity
A2692,1000	1 L
A2692,2500	2.5 L

Silver sulfate - Sulfuric acid - Solution (6 % Silver sulfate) for COD-determination

C

DIN 38409 (H41-2)

Composition:

Silver sulfate (A0633) 60 g/L
 Sulfuric acid (A0655) 800 ml/L
 Water (A1991) 200 ml/L

Order-No.	Quantity
A2697,1000	1 L
A2697,10006	6 x 1 L
A2697,2500	2.5 L

Silver sulfate - Sulfuric acid - Solution (2.66 % Silver sulfate) for COD-determination

C

DIN 38409 (H44)

Composition:

Silver sulfate (A0633) 26.6 g/L
 Sulfuric acid (A0655) 1000 ml/L

Order-No.	Quantity
A2717,1000	1 L
A2717,2500	2.5 L

Silver sulfate - Sulfuric acid - Solution (1 % Silver sulfate) for COD-determination

C

DIN 38409 (H41-1)

Composition:

Silver sulfate (A0633) 10 g/L
 Sulfuric acid (A0655) 965 ml/L
 Water (A1991) 35 ml/L

Order-No.	Quantity
A2725,1000	1 L
A2725,10006	6 x 1 L
A2725,2500	2.5 L
A2725,25004	4 x 2.5 L

Silybin HPLC grade

B

Mixture of diastereomers of Silybin A and B
 from *Silybum marianum*

$C_{25}H_{22}O_{10}$
 $M = 482.44$ g/mol
 CAS-No.: 22888-70-6
 HS-No.: 29329900

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 98 %

Order-No.	Quantity
A6766,0020	20 mg
A6766,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Simmons Citrate Agar

B

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

Composition:

Agar 15.0 g/L
 Bromothymol blue 0.08 g/L
 Buffers 1.7 g/L
 Magnesium sulfate 0.2 g/L
 Sodium chloride 5.0 g/L

Sodium citrate 2.0 g/L

Specification:

pH before autoclaving
 approx. 6.9 (20°C)

Order-No.	Quantity
A3916,0500	500 g
A3916,5000	5 kg

Literature: (1) Simmons, J.S. (1926) *J. Infect. Dis.* **39**, 209-241

A Culture Medium for Differentiating Organisms of Typhoid-colon aerogenes Groups and for Isolating of Certain Fungi.

Comment: This medium is used for the differentiation of gram-negative bacteria on the basis of citrate utilisation.

Directions: Suspend 24 g in 1 L of distilled water and boil to dissolve the medium completely. Dispense into test tubes. Sterilize by autoclaving at 121°C for 15 minutes. Allow to cool in slanted position. Store the prepared medium at 2-8°C.

Sinalbin HPLC grade

B

from *Sinapis alba*

$C_{30}H_{42}N_2O_{15}S_2$
 $M = 734.79$ g/mol
 CAS-No.: 20196-67-2
 HS-No.: 29389090

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 99.0 %

Order-No.	Quantity
A8738,0020	20 mg
A8738,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Sinensetin HPLC grade

B

from *Orthosiphon stamineus*

$C_{20}H_{20}O_7$
 $M = 372.38$ g/mol
 CAS-No.: 2306-27-6
 HS-No.: 29389090

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 98.0 %

Order-No.	Quantity
A8743,0010	10 mg
A8743,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Sinigrin monohydrate

Potassium myronate, Allyl glucosinolate,
Sinigroside
from *Sinapis nigra*

$C_{10}H_{16}KNO_9S_2 \cdot H_2O$
 $M = 415.47 \text{ g/mol}$
CAS-No.: 3952-98-5
HS-No.: 29389090

Storage: 2-8°C

Sinigrin monohydrate HPLC grade

B

Specification:

Assay min. 99 %

Order-No.
A5315,0050

Quantity
50 mg

Comment: Documents included: HPLC-DAD with UV spectrum.**Sinigrin monohydrate pure**

B

Specification:

Assay min. 97 %

Order-No.
A5316,0001

Quantity
1 g

Comment: Documents included: HPLC-DAD with UV spectrum.

Sinigroside see Sinigrin monohydrate Page 719
SiO₂ see Silica powdered, pure DAB Page 712
Sirolimus see Rapamycin BioChemica Page 683

β-Sitosterol

B

α-Dihydrofucosterol, 22,23-
Dihydrostigmasterol

$C_{29}H_{50}O$
 $M = 414.70 \text{ g/mol}$
CAS-No.: 83-46-5
HS-No.: 29061310
EC-No.: 201-480-6

Storage: 2-8°C

P260-P262

Melting point 139 - 142°C

Specification:

Assay approx. 75 %
 $\alpha/20/D$: 2 %, $CHCl_3$ -24° - -32°
Appearance white powder

Ash approx. 0.1 %
Loss on drying max. 3.5 %

Order-No.
A4305,0100
A4305,0250

Quantity
100 g
250 g

Size-exclusion chromatography matrix see AppliXchange-G25 M Page 116
Size-exclusion Chromatography Protein see DextraSEC PRO10 Page 271
Size Standard for Gel Electrophoresis **DNA** see Electrophoresis Size Marker/Standard DNA Page 319
Size Standard for Gel Electrophoresis Proteins see Electrophoresis Size Marker/Standard Protein Page 325
Skim milk see Nonfat dried milk powder Page 577
Skin decontamination reagent (nucleic acids) see Derma-ExitusPlus™ Page 269

SMCC

B

Succinimidyl 4-(*N*-
maleimidomethyl)cyclohexane-1-
carboxylate

$C_{16}H_{18}N_2O_6$
 $M = 334.32 \text{ g/mol}$
CAS-No.: 64987-85-5
HS-No.: 29280090

Storage: 2-8°C

Melting point 173 - 175°C

Specification:

Assay min. 99 %
Identity (NMR) complies

Order-No.
A7962,0025
A7962,0050
A7962,0100
A7962,0250

Quantity
25 mg
50 mg
100 mg
250 mg

Comment: SMCC is a non-cleavable, membrane-permeable, water-insoluble heterobifunctional reagent. It reacts toward sulfhydryl and primary amine groups. The NHS ester reacts with primary amines at pH 7 - 9, while maleimide reacts with thiols at pH 6.5 - 7.5. The cyclohexane ring stabilizes the maleimide group.SnCl₂ see Tin(II) chloride dihydrate Page 817

SOB-Medium - Powder

B

HS-No.: 38210000

Storage: RT

Composition:

Sodium chloride	0.5 g/L
Tryptone	20.0 g/L
Yeast extract	5.0 g/L

Order-No.	Quantity
A0980,0100G	100 g
A0980,0500G	500 g
A0980,1000KG	1 kg
A0980,5000	5 L
A0980,9025	25 L

Comment: The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of SOB-Medium, 25.5 g of powder are dissolved.

Directions to prepare liquid media (1 liter): 25.5 g powder are dissolved in 900 ml water, add 10 ml 250 mM KCl solution, adjust pH to 7.0 with 5 N NaOH (approx. 2 ml). Add water to 1000 ml and autoclave. Add just before use 5 ml of a 2 M MgCl₂ solution (sterile). Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive. SOC medium is identical to SOB, except for the addition of 20 ml of a 1 M glucose solution (sterile) to the autoclaved SOB media.

Sodium acetate anhydrous

Acetic acid sodium salt

C₂H₃NaO₂
M = 82.03 g/mol
CAS-No.: 127-09-3
HS-No.: 29152900
EC-No.: 204-823-8

Storage: RT
LGK: 10 - 13

WGK: 1

Sodium acetate anhydrous Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable
Assay (titr.)	min. 99 %
pH (5 %; H ₂ O)	7.5 - 9.5 (20°C)
Chloride	max. 0.001 %

Phosphate	max. 0.0005 %
Sulfate	max. 0.005 %
Al	max. 0.001 %
Ca	max. 0.001 %

Cu	max. 0.0003 %
Fe	max. 0.0005 %
Mg	max. 0.0005 %
Pb	max. 0.0001 %

Order-No.	Quantity
A4555,0250	250 g
A4555,0500	500 g
A4555,1000	1 kg

Sodium acetate anhydrous p. A.

C

Specification:

Assay (titr.)	min. 99 %
pH (5 %; H ₂ O; 20°C)	7.5 - 9.2
Chloride	max. 0.001 %
Phosphate	max. 0.0005 %
Sulfate	max. 0.005 %
Al	max. 0.001 %

Ca	max. 0.001 %
Cu	max. 0.0003 %
Fe	max. 0.0005 %
Mg	max. 0.0005 %
Pb	max. 0.0001 %

Order-No.	Quantity
A1522,0250	250 g
A1522,0500	500 g
A1522,1000	1 kg
A1522,10006	6 x 1 kg
A1522,5000	5 kg

Sodium acetate anhydrous pure USP, Food grade

C

Specification:

Assay (titr.)	99.0 - 101.0 %
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.001 %
Identity	complies
Insoluble matter	max. 0.05 %
Loss on drying	max. 1 %
Organic vol. impurities	complies

Oxid. subst. (as HCOOH)	
	max. 0.1 %
pH (1 %; H ₂ O)	8.0 - 9.5
pH (3 %; H ₂ O)	7.5 - 9.2
Chloride	max. 0.01 %
Sulfate	max. 0.005 %
As	max. 0.0003 %

Ca, Mg	complies
Hg	max. 0.0001 %
K	complies
Pb	max. 0.001 %

Order-No.	Quantity
A3510,0500	500 g
A3510,1000	1 kg
A3510,10006	6 x 1 kg
A3510,5000	5 kg
A3510,9010	10 kg
A3510,9025	25 kg

Sodium acetate trihydrate

Boiling point	123°C
Melting point	58°C
Solubility (20°C)	1250 g/L (H ₂ O)

C₂H₃NaO₂ · 3H₂O
M = 136.08 g/mol
CAS-No.: 6131-90-4
HS-No.: 29152900
EC-No.: 204-823-8

Storage: RT
LGK: 10 - 13

WGK: nwg

Sodium acetate trihydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable
Assay (titr.)	min. 99.5 %
pH (5 %; H ₂ O; 25°C)	7.5 - 9.0
Chloride	max. 0.0005 %

Phosphate	max. 0.0005 %
Sulfate	max. 0.005 %
Al	max. 0.001 %
Ca	max. 0.001 %

Cu	max. 0.0003 %
Fe	max. 0.0005 %
Mg	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A5268,0250	250 g
A5268,0500	500 g
A5268,1000	1 kg

Sodium acetate trihydrate *BioChemica*

B

Acetic acid sodium salt trihydrate

Specification:

Assay (titr.)	min. 99.5 %	Phosphate	max. 0.0002 %	A (1 cm/3 M in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %	Sulfate	max. 0.002 %	260 nm	max. 0.01
Insoluble matter	complies			280 nm	max. 0.01
pH (5 %; H ₂ O; 20°C)	7.5 - 9.0				
Chloride	max. 0.0005 %				

Order-No.	Quantity
A1045,0500	500 g
A1045,1000	1 kg
A1045,5000	5 kg

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

Precipitation of nucleic acids.

Comment: Sodium acetate is widely used in combination with ethanol to precipitate nucleic acids. A 3 M sodium acetate solution (pH 5.5) is used as a stock solution. To precipitate nucleic acids, this stock solution is mixed with the DNA solution in the ratio 1:10 (final concentration 0.3 M). For designated uses other salts like potassium acetate (A1498), ammonium acetate (A1030) or lithium chloride (A0985) should be preferred (1).

Sodium acetate trihydrate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %	Fe	max. 0.0005 %
pH (5 %; H ₂ O; 20°C)	7.5 - 9.0	K	max. 0.005 %
Chloride	max. 0.0005 %	Mg	max. 0.0005 %
Phosphate	max. 0.0002 %	Pb	max. 0.0005 %
Sulfate	max. 0.002 %	Zn	max. 0.0001 %
Ca	max. 0.001 %		
Cu	max. 0.0003 %		

Order-No.	Quantity
A3628,0500	500 g
A3628,1000	1 kg
A3628,10006	6 x 1 kg
A3628,5000	5 kg
A3628,9010	10 kg
A3628,9025	25 kg

Sodium acetate trihydrate pure Ph. Eur., USP

C

Specification:

Assay (titr., calc. on dried substance)	Loss on drying	39.0 - 40.5 %	As	max. 0.0002 %
	Organic vol. impurities	complies	Ca, Mg (Ph. Eur.)	max. 0.005 %
	Red. substances	complies	Ca, Mg (USP)	complies
Appearance of solution	pH (5 %; H ₂ O)	7.5 - 9.0	Fe	max. 0.001 %
Heavy metals (as Pb)	Chloride	max. 0.02 %	K	complies
Identity	Sulfate	max. 0.005 %		
Insoluble matter				

Order-No.	Quantity
A1370,1000	1 kg
A1370,10006	6 x 1 kg
A1370,5000	5 kg
A1370,9010	10 kg
A1370,9025	25 kg

Sodium acetate - Solutions 3 M

HS-No.: 29152900

Storage: RT
Disposal: 14

Sodium acetate - Solution 3 M (pH 4.6)

B

Composition:

Sodium acetate (A1045) ... 408.24 g/L

Specification:

pH (20°C) ... 4.6 ± 0.1

Order-No.	Quantity
A0686,0500	500 ml
A0686,1000	1 L

Sodium acetate - Solution (3 M, pH 5.2) Molecular biology grade

B

WGK: 1

Composition:

Sodium acetate (A5268) ... 408.24 g/L

Specification:

DNases/RNases/Proteases
not detectable
pH (20°C) ... 5.2 ± 0.1

Order-No.	Quantity
A3947,0100	100 ml
A3947,0250	250 ml

Sodium acetate - Solution 3 M (pH 5.2)

B

WGK: 1

Composition:

Sodium acetate (A1045) ... 408.24 g/L

Specification:

pH (20°C) ... 5.2 ± 0.1

Order-No.	Quantity
A3802,0500	500 ml
A3802,1000	1 L

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. pp. 7.10, A1.28, A8.12. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Sodium acetate - Solution 3 M (pH 7.0) Molecular biology grade

B

Composition:

Sodium acetate (A5268) ... 408.24 g/L

Specification:

DNases/RNases/Proteases
not detectable
pH (20°C) ... 7.0 ± 0.1

Order-No.	Quantity
A7005,0100	100 ml
A7005,0250	250 ml

Sodium acetate - Solution 3 M (pH 7.0)

B

Acetic acid sodium salt - Solution			
Composition:	Specification:	Order-No.	Quantity
Sodium acetate (A1045) . . . 408.24 g/L	pH (20°C) 7.0 ± 0.1	A0685,0500	500 ml
		A0685,1000	1 L

Sodium acetate - Solutions

HS-No.: 29152900

Storage: RT

Disposal: 14

Sodium acetate - Solution 20 % p. A.

C

Acetic acid sodium salt - Solutions			
Composition:	Specification:	Order-No.	Quantity
Sodium acetate (A1522) . . . 200 g/L	pH (H ₂ O) 7.5 - 9.5 (20°C)	A3372,0500	500 ml
		A3372,1000	1 L
		A3372,5000	5 L

Sodium acetate - Solution 15 % p. A.

C

Acetic acid sodium salt - Solution			
Composition:	Specification:	Order-No.	Quantity
Sodium acetate (A1522) . . . 150 g/L	pH (H ₂ O) 7.5 - 9.5 (20°C)	A2505,1000	1 L
		A2505,5000	5 L

Sodium acetate - Standard volumetric solutions

Acetic acid sodium salt - Solutions

HS-No.: 38220000

Storage: RT

Disposal: 14

Sodium acetate - Standard volumetric solution (0.5 M)

C

0.5 mol/L (0.5 N Solution)			
Specification:		Order-No.	Quantity
Factor limits 0.998 - 1.002		A3332,1000	1 L
		A3332,10006	6 x 1 L
		A3332,5000CT	5 L
		A3332,5000PE	5 L

Sodium acetate - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)			
Specification:		Order-No.	Quantity
Factor limits 0.998 - 1.002		A3364,1000	1 L
		A3364,10006	6 x 1 L
		A3364,5000CT	5 L
		A3364,5000PE	5 L

Sodium alginate see Alginic acid sodium salt BioChemica Page 79

Sodium L(+)-ascorbate pure USP

C

Melting point 218°C	C ₆ H ₇ NaO ₆	Storage: RT	WGK: 1
Solubility (20°C) 600 g/L (H ₂ O)	M = 198.11 g/mol	LGK: 10 - 13	
	CAS-No.: 134-03-2		
	HS-No.: 29362700		
	EC-No.: 205-126-1		
Specification:		Order-No.	Quantity
Assay (titr., calc. on dried substance)	Loss on drying max. 0.25 %	A5048,0100	100 g
. 99.0 - 101.0 %	Volatile org. impurities . . complies	A5048,0500	500 g
α ₂₀ ^o C/D; 10 %, H ₂ O +103° - +108°	pH (10 %; H ₂ O) 7.0 - 8.0	A5048,1000	1 kg
Heavy metals (as Pb) max. 0.002 %		A5048,10006	6 x 1 kg
Identity complies			
◆ May darken in storage!			

Sodium azide pure

B

Thermal dec. 300°C

N_3Na
 $M = 65.01 \text{ g/mol}$
 CAS-No.: 26628-22-8
 HS-No.: 28500060
 EC-No.: 247-852-1

Storage: RT
 LGK: 6.1 A
 Disposal: 21

Class / PG: 6.1/II
 UN1687
 WGK: 2
 Danger
 EUH032-H410-H300
 P309-P310-P273



Specification:

Assay (titr.) min. 99 %
 H_2O -insoluble matter max. 0.05 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying max. 0.25 %
 Solubility (H_2O ; 17°C) 420 g/L

Order-No.	Quantity
A1430,0010	10 g
A1430,0050	50 g
A1430,0100	100 g
A1430,0500	500 g

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Page 1.48. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: Sodium azide is added to different solutions (e.g. antibody-solutions, blotto, buffers) to prevent growth of microbiological organisms. Its final concentration is approx. 0.02 - 0.2 %.
Caution: Sodium azide is very toxic. It also reacts with some metals - especially with copper - in an explosive reaction. Therefore, sodium azide-containing solutions have to be diluted with plenty of water when wasted.

Sodium benzoate pure Ph. Eur., NF

C

Benzoic acid sodium salt

$\text{C}_7\text{H}_5\text{NaO}_2$
 $M = 144.11 \text{ g/mol}$
 CAS-No.: 532-32-1
 HS-No.: 29163100
 EC-No.: 208-534-8

Storage: RT
 LGK: 10 - 13

WGK: 1

Specification:

Assay (titr., calc. on dried substance) 99.0 - 100.5 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying max. 1.5 %

Organic vol. impurities complies
 Total Cl max. 0.03 %
 Chloride max. 0.02 %

Order-No.	Quantity
A2399,0500	500 g
A2399,1000	1 kg
A2399,10006	6 x 1 kg
A2399,5000	5 kg
A2399,9010	10 kg
A2399,9025	25 kg

Sodium bicarbonate see Sodium hydrogen carbonate Page 734

Sodium bitartrate see Sodium hydrogen tartrate monohydrate pure Page 737

Sodium borohydride

Sodium tetrahydroborate, Sodium boranate

BH_4Na
 $M = 37.83 \text{ g/mol}$
 CAS-No.: 16940-66-2
 HS-No.: 28500020
 EC-No.: 241-004-4

Storage: RT
 LGK: 10 - 13
 Disposal: 26

Class / PG: 4.3/II
 UN1426
 WGK: 2
 Danger
 H314-H301-H311-H260
 P280-P402+P404-P305+P351+P338-
 P302+P352-P301+P330+P331



Boiling point approx. 500°C
 Melting point approx. 400°C
 Solubility (25°C) 550 g/L (H_2O)

Sodium borohydride powdered BioChemica

B

Specification:

Assay (titr.) min. 96 %
 Heavy metals (as Pb) max. 0.005 %
 Insoluble matter max. 0.005 %

Chloride max. 0.5 %
 Sulfate max. 0.05 %
 As max. 0.001 %

Order-No.	Quantity
A3821,0010	10 g
A3821,0025	25 g

Sodium borohydride powdered p. A.

C

Specification:

Assay (titr.) min. 96 %
 Chloride max. 0.5 %
 Sulfate max. 0.05 %
 As max. 0.001 %

Fe max. 0.005 %
 Hg max. 0.001 %
 Pb max. 0.005 %
 Se max. 0.001 %

Order-No.	Quantity
A1549,0010	10 g
A1549,0025	25 g
A1549,0100	100 g

Sodium borohydride powdered for synthesis

C

Specification:

Assay (titr.) min. 95 %
 Chloride max. 0.5 %
 Sulfate max. 0.1 %
 As max. 0.001 %

Pb max. 0.005 %

Order-No.	Quantity
A0549,0025	25 g
A0549,0100	100 g
A0549,0250	250 g

Sodium boranate see Sodium borohydride Page 723

Sodium borate see di-Sodium tetraborate anhydrous Page 754

Sodium bromide

NaBr	BrNa	Storage: RT	WGK: 1
	<i>M</i> = 102.90 g/mol	LGK: 10 - 13	
Melting point 755°C	CAS-No.: 7647-15-6	Disposal: 14	
Solubility (20°C) 905 g/L (H ₂ O)	HS-No.: 28275100		
	EC-No.: 231-599-9		

Sodium bromide p. A.

Specification:		Order-No.	Quantity
Assay (titr.) min. 99.5 %	As max. 0.0001 %	A1880,0500	500 g
Loss on drying max. 0.5 %	Ca max. 0.001 %	A1880,1000	1 kg
Bromate max. 0.001 %	Fe max. 0.0005 %	A1880,10006	6 x 1 kg
Chloride max. 0.1 %	Pb max. 0.0001 %	A1880,5000	5 kg
Iodide max. 0.001 %		A1880,9010	10 kg
Sulfate max. 0.005 %			

Sodium bromide pure Ph. Eur.

Specification:		Order-No.	Quantity
Assay (titr., dried substance) 98.0 - 100.5 %	Chloride max. 0.6 %	A2404,0500	500 g
Acidic/alkaline react. subst. complies	Iodide complies	A2404,1000	1 kg
Appearance of solution complies	Sulfate max. 0.01 %	A2404,10006	6 x 1 kg
Heavy metals (as Pb) max. 0.001 %	Fe max. 0.002 %	A2404,5000	5 kg
Identity complies	Mg/Alk. earth metals max. 0.02 %	A2404,9010	10 kg
Loss on drying max. 3.0 %		A2404,9025	25 kg
Bromate complies			

Sodium 1-butanedisulfonate see 1-Butanedisulfonic acid sodium salt IPC grade Page 170
Sodium cacodylate see Cacodylic acid sodium salt trihydrate *BioChemica* Page 175

Sodium carbonate anhydrous

Na₂CO₃	CNa₂O₃	Storage: RT	WGK: 1
	<i>M</i> = 105.99 g/mol	LGK: 10 - 13	hygroscopic
Melting point 854°C	CAS-No.: 497-19-8	Disposal: 14	Warning
Solubility (20°C) 220 g/L (H ₂ O)	HS-No.: 28362000		H319
	EC-No.: 207-838-8		P260-P305+P351+P338



Sodium carbonate anhydrous *BioChemica*

Specification:		Order-No.	Quantity
Assay (titr.) min. 99.5 %	Phosphate max. 0.001 %	A3900,0500	500 g
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.005 %	A3900,1000	1 kg
Insoluble matter complies		A3900,10006	6 x 1 kg
Loss on drying max. 1 %		A3900,5000	5 kg
Chloride max. 0.002 %			

Literature: (1) Janknecht, R. *et al.* (1995) *Oncogene* **10**, 1209-1216

SAP1a is a nuclear target of signaling cascades involving ERKs.

Comment: The assay for β-galactosidase as an internal control of transient transfections is very often conducted with ONPG (A1272) as enzyme substrate. A yellow colour is formed. The enzymatic reaction is stopped with 1 M sodium carbonate. This intensifies the yellow colour.

Sodium carbonate anhydrous p. A.

Specification:		Order-No.	Quantity
Assay (titr.) min. 99.5 %	Fe max. 0.0005 %	A1881,0500	500 g
Loss on drying max. 1 %	K max. 0.01 %	A1881,1000	1 kg
Chloride max. 0.002 %	Mg max. 0.001 %	A1881,10006	6 x 1 kg
Phosphate max. 0.001 %	Pb max. 0.0005 %	A1881,5000	5 kg
Sulfate max. 0.005 %		A1881,9010	10 kg
As max. 0.0001 %		A1881,9025	25 kg
Ca max. 0.001 %			

Sodium carbonate anhydrous pure Ph. Eur., NF

Specification:		Order-No.	Quantity
Assay (titr., calc. on dried substance) 99.5 - 100.5 %	Identity complies	A1352,1000	1 kg
Loss on drying max. 0.5 %	Chloride max. 0.0125 %	A1352,10006	6 x 1 kg
Alkali hydroxides and bicarbonates complies	Sulfate max. 0.025 %	A1352,5000	5 kg
Appearance of solution complies	As max. 0.0005 %	A1352,9010	10 kg
Heavy metals (as Pb) max. 0.001 %	Fe max. 0.005 %	A1352,9025	25 kg

Sodium carbonate - Solutions

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Sodium carbonate - Solution 20 % p. A.

HS-No.: 28362000

Warning
H319
P280-P264-P305+P351+P338



Composition:
Sodium carbonate (A1881) . 200 g/L

Order-No.	Quantity
A3335,2500	2.5 L
A3335,5000	5 L
A3335,9010	10 L
A3335,9025	25 L

Sodium carbonate - Solution 5 % p. A.

HS-No.: 38220000

Order-No.	Quantity
A0764,2500	2.5 L
A0764,5000	5 L
A0764,9010	10 L

Composition:
Sodium carbonate (A1881) . 50 g/L

Sodium carbonate - Standard volumetric solutions

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Sodium carbonate - Standard volumetric solution (0.5 M)

0.5 mol/L (1 N Solution)

HS-No.: 38220000

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A3356,1000	1 L
A3356,10006	6 x 1 L
A3356,5000CT	5 L
A3356,5000PE	5 L

Sodium carbonate - Standard volumetric solution (0.05 M)

0.05 mol/L (0.1 N Solution)

HS-No.: 38220000

Specification:
Factor limits 0.998 - 1.002

Order-No.	Quantity
A3324,1000	1 L
A3324,10006	6 x 1 L
A3324,5000CT	5 L
A3324,5000PE	5 L

Sodium carbonate decahydrate

$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$

Solubility (20°C) 210 g/L (H₂O)

$\text{CNa}_2\text{O}_3 \cdot 10\text{H}_2\text{O}$
 $M = 286.14 \text{ g/mol}$
CAS-No.: 6132-02-1
HS-No.: 28362000
EC-No.: 207-838-8

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
Warning
H319
P260-P305+P351+P338



Sodium carbonate decahydrate p. A.

Specification:
Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.0005 %
Total S (as SO₄) max. 0.005 %
pH (50 g/L; H₂O; 25° C) 11 - 12
Chloride max. 0.0005 %
Phosphate max. 0.002 %
Al max. 0.0005 %
Ca max. 0.002 %
Fe max. 0.0002 %
K max. 0.005 %
Mg max. 0.0005 %

Order-No.	Quantity
A4332,1000	1 kg
A4332,10006	6 x 1 kg
A4332,5000	5 kg
A4332,9010	10 kg
A4332,9025	25 kg

Sodium carbonate decahydrate pure

C

Specification:

Assay (titr.)	min. 99 %	Fe	max. 0.002 %
Heavy metals (as Pb)	max. 0.005 %		
pH (5 %; H ₂ O; 25°C)	11 - 13		
Chloride	max. 0.005 %		
Sulfate	max. 0.01 %		

Order-No.	Quantity
A7146,1000	1 kg
A7146,5000	5 kg
A7146,9010	10 kg
A7146,9025	25 kg

Sodium chlorate - Solution (50 g/L)

C

Aqueous solution

HS-No.: 38220000

Storage: RT

H412
P273

Composition:

Sodium chlorate 50 g/L

Order-No.	Quantity
A4939,0500	500 ml
A4939,1000	1 L
A4939,5000	5 L

Sodium chloride

NaCl

CINa

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: nwg

Boiling point 1461°C
Melting point 801°C
Solubility (20°C) 358 g/L (H₂O)

M = 58.44 g/mol
CAS-No.: 7647-14-5
HS-No.: 25010091
EC-No.: 231-598-3

Sodium chloride 99.9 %

C

Specification:

Assay (titr.)	min. 99.9 %	Ba	max. 0.001 %
pH (5 %; H ₂ O)	5.0 - 8.0 (20°C)	Ca	max. 0.002 %
Bromide	max. 0.005 %	Fe	max. 0.0001 %
Iodide	max. 0.001 %	K	max. 0.005 %
Phosphate	max. 0.001 %	Mg	max. 0.001 %
Sulfate	max. 0.001 %	Pb	max. 0.0005 %

Order-No.	Quantity
A4661,1000	1 kg
A4661,10006	6 x 1 kg
A4661,5000	5 kg
A4661,9010	10 kg
A4661,9025	25 kg

Sodium chloride Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable	Phosphate	max. 0.001 %	K	max. 0.005 %
Assay (titr.)	min. 99.5 %	Sulfate	max. 0.001 %	Mg	max. 0.001 %
pH (5 %; H ₂ O)	5.0 - 8.0 (20°C)	Ba	max. 0.001 %	Pb	max. 0.0005 %
Bromide	max. 0.005 %	Ca	max. 0.002 %		
Iodide	max. 0.001 %	Fe	max. 0.0001 %		

Order-No.	Quantity
A2942,0500	500 g
A2942,1000	1 kg
A2942,10006	6 x 1 kg
A2942,5000	5 kg

Sodium chloride Cell culture grade

B

Specification:

Pyrogen test	complies	Iodide	max. 0.001 %	Fe	max. 0.0001 %
Assay (titr.)	min. 99.5 %	Phosphate	max. 0.001 %	Pb	max. 0.0005 %
pH (5 %; H ₂ O)	5.0 - 8.0 (20°C)	Sulfate	max. 0.001 %		
Bromide	max. 0.005 %	As	max. 0.0001 %		

Order-No.	Quantity
A4256,0500	500 g
A4256,1000	1 kg
A4256,5000	5 kg

Sodium chloride BioChemica

B

Specification:

Assay (titr.)	min. 99.5 %	Iodide	max. 0.001 %	A (1 cm/ 1 M in water)	
Heavy metals (as Pb)	max. 0.001 %	Phosphate	max. 0.001 %	260 nm	max. 0.01
Insoluble matter	complies	Sulfate	max. 0.001 %	280 nm	max. 0.01
pH (5 %; H ₂ O; 20°C)	5.0 - 8.0				
Bromide	max. 0.005 %				

Order-No.	Quantity
A1149,1000	1 kg
A1149,10006	6 x 1 kg
A1149,5000	5 kg
A1149,9010	10 kg

Literature: (1) Wallace, D.M. (1987) *Methods Enzymol.* **152**, 41-48

Precipitation of nucleic acids.

Comment: Sodium chloride is used in combination with ethanol to precipitate DNA. Should the DNA sample contain sodium dodecyl sulfate (SDS), the detergent is most effectively removed by making the sample 0.2 M NaCl before ethanol addition (usually by adding 0.04 volume 5 M NaCl followed by 2 volumes ethanol). SDS remains soluble under this conditions (1). When removing ethidium bromide from DNA-containing solutions after CsCl density centrifugation isopropanol (saturated with 5 M NaCl) is used. Two phases are formed during saturation. The upper phase is the isopropanol phases. (If non-saturated isopropanol is used CsCl will precipitate while mixing the probes!).

Sodium chloride p. A.

C

Specification:

Assay (titr.)	min. 99.5 %	Ca	max. 0.002 %
pH (5 %; H ₂ O)	5.0 - 8.0 (20°C)	Fe	max. 0.0001 %
Bromide	max. 0.005 %	K	max. 0.005 %
Iodide	max. 0.001 %	Mg	max. 0.001 %
Phosphate	max. 0.001 %	Pb	max. 0.0005 %
Sulfate	max. 0.001 %		
Ba	max. 0.001 %		

Order-No.	Quantity
A3597,0500	500 g
A3597,1000	1 kg
A3597,10006	6 x 1 kg
A3597,5000	5 kg
A3597,9010	10 kg
A3597,9025	25 kg

Sodium chloride pure Ph. Eur., USP

C

Specification:

Assay (titr., calc. on dried substance)	Bromide	max. 0.01 %	As	max. 0.0001
99.0 - 100.5 %	Fe(CN) ₆	complies	Ba	complies
Acidic/alkaline react. subst.	Iodide	complies	Fe	max. 0.0002 %
complies	Nitrite	complies	K	max. 0.05 %
Appearance of solution	Phosphate	max. 0.0025 %Sulfate	Mg/Alk. earth metals	max. 0.01 %
complies				
Endotoxins		max. 0.02 %		
5 I.U./g				
Heavy metals (as Pb)		max. 0.0002 %		
max. 0.0005 %				
Identity				
complies				
Loss on drying				
max. 0.5 %				

Order-No.	Quantity
A1371,1000	1 kg
A1371,10006	6 x 1 kg
A1371,5000	5 kg
A1371,9010	10 kg
A1371,9025	25 kg

Sodium chloride pure, free-flowing

C

Specification:

Assay (titr.)	min. 99 %
Insoluble matter	max. 0.005 %
Sodium nitrite	max. 0.5 %

Order-No.	Quantity
A4857,5000	5 kg
A4857,9010	10 kg
A4857,9025	25 kg

Sodium chloride - Solutions

EC-No.: 231-598-3 Storage: RT WGK: nwg
LGK: 10 - 13

Sodium chloride - Solution saturated (approx. 6 M)

C

HS-No.: 25010091

Composition:

NaCl (A3597)	360 g/L

Order-No.	Quantity
A2824,2500	2.5 L
A2824,25004	4 x 2,5 L
A2824,5000CT	5 L
A2824,5000PE	5 L
A2824,9010CT	10 L
A2824,9010PE	10 L

Sodium chloride - Solution (5 M) Molecular biology grade

B

HS-No.: 25010091

Composition:

NaCl (A2942)	292.2 g/L

Specification:

DNases/RNases/Proteases	
	not detectable

Order-No.	Quantity
A7006,0250	250 ml
A7006,1000	1 L

Sodium chloride - Solution (5 M)

C

HS-No.: 25010091

Composition:

NaCl (A3597)	292.2 g/L

Order-No.	Quantity
A3803,1000	1 L
A3803,2500	2.5 L
A3803,25004	4 x 2,5 L
A3803,5000CT	5 L
A3803,5000PE	5 L

Sodium chloride - Solution (1 M)

C

HS-No.: 38220000

Composition:

NaCl (A3597)	58.44 g/L

Order-No.	Quantity
A3511,1000	1 L
A3511,10006	6 x 1 L
A3511,5000CT	5 L
A3511,5000PE	5 L

Sodium chloride - Solution (0.1 M)

C

HS-No.: 38220000

Composition:

NaCl (A3597)	5.844 g/L

Order-No.	Quantity
A3534,1000	1 L
A3534,5000CT	5 L
A3534,5000PE	5 L
A3534,9010CT	10 L
A3534,9010PE	10 L

Sodium chloride - Solution (0.01 M)

HS-No.: 38220000

C

Composition:

NaCl (A3597) 0.5844 g/L

Order-No.	Quantity
A3569,1000	1 L
A3569,10006	6 x 1 L
A3569,5000CT	5 L
A3569,5000PE	5 L

Sodium chloride - Solution (0.9 %), sterile

HS-No.: 38220000

B

Specification:

pH (20°C) 5.0 - 7.5

Order-No.	Quantity
A1671,0100	100 ml
A1671,0250	250 ml
A1671,0500	500 ml
A1671,1000	1 L

Sodium cholate *BioChemica*

B

Cholic acid sodium salt

$C_{24}H_{39}NaO_5$
 $M = 430.57$ g/mol
 CAS-No.: 361-09-1
 HS-No.: 29181930
 EC-No.: 206-643-5

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Specification:

Assay (titr.) min. 99 %
 $\alpha 20^\circ C/D: 0.6 \%$, EtOH +35° - +37°
 pH (0.1 M; H_2O ; 20°C) 7.0 - 9.0

Water (K.F.) max. 5 %

Order-No.	Quantity
A0979,0025	25 g
A0979,0100	100 g

Literature: (1) Helenius, A. et al. (1979) *Methods Enzymol.* **56**, 734-749
 (2) Hjelmeland, L.M. & Chrambach, A. (1984) *Methods Enzymol.* **104**, 305-318
 (3) Jones, M.B. & Garrison, J.C. (1999) *Anal. Biochem.* **268**, 126-133

Properties of detergents.
 Solubilization of functional membrane proteins.
 Instability of the G-Protein β_5 subunit in sodium cholate and CHAPS.

Comment: Sodium cholate should not be used when working with enzymes, which need bivalent cations for their activity or for ion-pairing exchange chromatography and electrophoresis. It does not interfere with protein assays and can easily be dialysed. Some restrictions occur when performing purifications of G-Proteins β_5 subunits (3).

mono-Sodium citrate pure

C

Sodium citrate monobasic, Sodium dihydrogen citrate, Citric acid monosodium salt

$C_6H_7NaO_7$
 $M = 214.11$ g/mol
 CAS-No.: 18996-35-5
 HS-No.: 29181500
 EC-No.: 242-734-6

Storage: RT

Melting range 209 - 215°C

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.0005 %
 pH (5 %; H_2O) 3.5 - 4.0 (25°C)
 Oxalic acid max. 0.01 %
 Water (K.F.) max. 0.5 %

Chloride max. 0.005 %
 Sulfate max. 0.15 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Zn max. 0.001 %

Order-No.	Quantity
A6274,0100	100 g
A6274,0500	500 g
A6274,1000	1 kg
A6274,10006	6 x 1 kg

tri-Sodium citrate dihydrate

Citric acid trisodium salt dihydrate

$C_6H_5Na_3O_7 \cdot 2H_2O$
 $M = 294.10$ g/mol
 CAS-No.: 6132-04-3
 HS-No.: 29181500
 EC-No.: 200-675-3

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: nwg

Melting point 150°C
 Solubility (25°C) 425 g/L (H_2O)

tri-Sodium citrate dihydrate Molecular biology grade

B

Sodium citrate tribasic

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99.5 %
 pH (5 %; H_2O) 7.5 - 9.0 (20°C)
 Chloride max. 0.001 %
 Phosphate max. 0.002 %
 Sulfate max. 0.005 %

As max. 0.00001 %
 Ca max. 0.001 %
 Cd max. 0.0005 %
 Cr max. 0.0005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Mn max. 0.0005 %
 Ni max. 0.0005 %
 Pb max. 0.0005 %
 Zn max. 0.0005 %

Order-No.	Quantity
A4522,0100	100 g
A4522,0250	250 g
A4522,0500	500 g
A4522,1000	1 kg
A4522,5000	5 kg

tri-Sodium citrate dihydrate *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 pH (5 %; H_2O) 7.5 - 9.0 (20°C)
 Chloride max. 0.001 %

Phosphate max. 0.002 %
 Sulfate max. 0.005 %
 A (1 cm/0.1 M in H_2O)
 260 nm max. 0.02
 280 nm max. 0.02

Order-No.	Quantity
A3901,0500	500 g
A3901,1000	1 kg
A3901,5000	5 kg

tri-Sodium citrate dihydrate p. A.

C

Specification:

Assay (titr.)	min. 99 %	Fe	max. 0.0005 %
pH (5 %; H ₂ O)	7.5 - 9.0 (20°C)	Pb	max. 0.0005 %
Chloride	max. 0.001 %	Zn	max. 0.001 %
Phosphate	max. 0.002 %		
Sulfate	max. 0.005 %		
Ca	max. 0.005 %		
Cu	max. 0.001 %		

Order-No.	Quantity
A2403,0500	500 g
A2403,1000	1 kg
A2403,10006	6 x 1 kg
A2403,5000	5 kg
A2403,9010	10 kg
A2403,9025	25 kg

tri-Sodium citrate dihydrate Buffer grade

B

Specification:

Assay (titr.)	min. 99 %	Sulfate	max. 0.005 %
Loss on drying	11.0 - 13.0 %	Fe	max. 0.001 %
pH (5 %; H ₂ O; 20°C)	7.5 - 9.0	Pb	max. 0.001 %
Chloride	max. 0.005 %	Zn	max. 0.001 %
Phosphate	max. 0.002 %		

Order-No.	Quantity
A1351,0500	500 g
A1351,1000	1 kg
A1351,5000	5 kg
A1351,9010	10 kg

Literature: (1) Southern, E.M. (1975) *J. Mol. Biol.* **98**, 503-517

Detection of specific sequences of DNA fragments after gel electrophoresis.

(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, page B.13, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(3) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, page A.2.5 (Suppl. 40) Greene Publishing & Wiley-Interscience, New York.

tri-Sodium citrate dihydrate pure Ph. Eur., USP

C

Specification:

Assay (titr., calc. on anhydrous subst.)	Tartrate	complies
..... 99.0 - 101.0 %	Water (K.F.)	11.0 - 13.0 %
Acidic/alkaline react. subst.	Chloride	max. 0.005 %
Appearance of solution	Oxalate	max. 0.03 %
Behaviour against H ₂ SO ₄	Sulfate	max. 0.015 %
Heavy metals (as Pb)		
Identity		

Order-No.	Quantity
A0548,0500	500 g
A0548,1000	1 kg
A0548,10006	6 x 1 kg
A0548,5000	5 kg
A0548,9010	10 kg
A0548,9025	25 kg

Sodium citrate monobasic see *mono*-Sodium citrate pure Page 728

Sodium citrate tribasic see *tri*-Sodium citrate dihydrate Page 728

Sodium cyclamate pure Ph. Eur.

C

Cyclohexanesulfamic acid sodium salt

C₆H₁₂NNaO₃S
M = 201.22 g/mol
CAS-No.: 139-05-9
HS-No.: 29299000
EC-No.: 205-348-9

Storage: RT
LGK: 10 - 13

Specification:

Assay (titr., calc. on dried substance)	Identity	complies	Dicyclohexylamine	
..... 98.5 - 101.0 %	Loss on drying	max. 1.0 %	 max. 0.0001 %	
Absorption (270 nm)	pH (10 %; H ₂ O)	5.5 - 7.5	Sulfamic acid	max. 0.1 %
Appearance of solution	Aniline	max. 0.0001 %	Sulfate	max. 0.1 %
Heavy metals (as Pb)	Cyclohexylamine	max. 0.001 %		

Order-No.	Quantity
A2402,0250	250 g
A2402,0500	500 g
A2402,1000	1 kg

Sodium-1-decane sulfonate see 1-Decanesulfonic acid sodium salt IPC grade Page 260

Sodium deoxycholate BioChemica

B

Deoxycholic acid sodium salt

C₂₄H₃₉NaO₄
M = 414.57 g/mol
CAS-No.: 302-95-4
HS-No.: 29181930
EC-No.: 206-132-7

Storage: RT
LGK: 10 - 13

WGK: 1
Warning
H302-H335
P261



CMC approx. 10 mM

Specification:

Assay	min. 98.5 %	pH (2 %; H ₂ O; 20°C)	7.5 - 9.5
α20°C/D; 2 %; H ₂ O	+44' ± 2"	Sodium cholate	max. 2.0 %
Heavy metals	max. 0.002 %	Loss on drying	max. 5.0 %

Order-No.	Quantity
A1531,0025	25 g
A1531,0100	100 g

Literature: (1) Dean, W.L. & Tanford, C. (1978) *Biochemistry* **17**, 1683-1690

Properties of a delipidated, detergent-activated Ca²⁺-ATPase.

Comment: While isolating ATPase with sodium deoxycholate for removal of lipids and addition of Glycerol to stabilize the enzyme, the enzyme gets inactivated while removing the lipids. The full activity can be recovered by adding phospholipids or detergent. 2 g of Sodium deoxycholate are added per 1 g ATPase (1).

Sodium diacetate pure

C

C₄H₇O₄Na · xH₂O
CAS-No.: 126-96-5
HS-No.: 29152900

Storage: RT

Warning
H319
P262



Specification:

Assay (as Sodium diacetate)	58.0 - 60.0 %		max. 0.1 %	Hg		max. 0.0001 %
Assay (as free AcOH)	39.0 - 41.0 %	pH (10 %)	4.5 - 5.0	Pb		max. 0.0005 %
Heavy metals (as Pb)	max. 0.001 %	Water (K.F.)	max. 2 %	Zn		max. 0.001 %
Identity		complies	As		max. 0.0001 %	
Readily oxid. subst. (as formic acid)		Cu		max. 0.0005 %		

Order-No.	Quantity
A5259,0100	100 g
A5259,0500	500 g
A5259,1000	1 kg

Sodium diatrizoate dihydrate Cell culture grade

B

3,5-Diacetamido-2,4,6-triiodobenzoic acid sodium salt, Diatrizoic acid sodium salt dihydrate, 3,5-Bis(acetylamino)-2,4,6-triiodobenzoic acid sodium salt

$C_{11}H_{13}I_3N_2NaO_4 \cdot 2H_2O$
 $M = 671.90$ g/mol
 CAS-No.: 737-31-5
 HS-No.: 29242998
 EC-No.: 212-004-1

Storage: RT

Danger
 H334-H317
 P280-P261-P342+P311

**Specification:**

Pyrogen test complies
 Assay min. 99 %
 Heavy metals max. 10 ppm
 Iodide complies
 Chloride max. 0.004 %
 Sulfate max. 0.1 %

Order-No.	Quantity
A3769,0010	10 g
A3769,0050	50 g
A3769,0100	100 g
A3769,0250	250 g
A3769,0500	500 g

Sodium diethyldithiocarbamate trihydrate BioChemica

B

Diethiocarbamic acid diethyl ester sodium salt, Diethyldithiocarbamic acid sodium salt, Cupral

$C_5H_{10}NNaS_2 \cdot 3H_2O$
 $M = 225.31$ g/mol
 CAS-No.: 20624-25-3
 HS-No.: 29302000
 EC-No.: 205-710-6

Storage: 2-8°C
 LGK: 10 - 13
 Disposal: 3

WGK: 3*
 Danger
 H318-H302-H315
 P305+P351+P338-P280

**Specification:**

Assay (titr.) min. 99 %
 Heavy metals max. 0.001 %
 Sulfated ash 30 - 33 %

Order-No.	Quantity
A2171,0050	50 g
A2171,0100	100 g
A2171,0250	250 g

Literature: (1) Lauriault, V.M. & O'Brien P.J. (1991) *Mol. Pharmacol.* **40**, 125-134

(2) Hosni, M. et al. (1992) *Biochem. Pharmacol.* **43**, 1319-1329

(3) Ramanaiah, M. & Venkaiah, B. (1992) *Biochem. Int.* **26**, 113-123

(4) Mülisch, A. et al. (1993) *FEBS Lett.* **321**, 215-218

(5) Jewett, S.L. & Rocklin, A.M. (1994) *Anal. Biochem.* **217**, 236-240

(6) Jewett, S.L. & Rocklin, A.M. (1996) *Anal. Biochem.* **237**, 65-69

Molecular mechanism for prevention of N-Acetyl-p-benzoquinonimine by the permeable thiol drug Diethyldithiocarbamate and Dithiothreitol.

Diethyldithiocarbamate effect on arachidonic acid metabolism in human mononuclear cells.

Characterization of Superoxide Dismutase from south indian scorpion venom.

Diethyldithiocarbamate inhibits induction of macrophage NO synthetase.

N,N'-Diethyldithiocarbamate as a stain for Copper-Zinc Superoxide Dismutase in polyacrylamide gels of red cell extracts.

Two applications using N,N'-Diethyldithiocarbamate as a stain for Copper in native polyacrylamide gels of Superoxide Dismutase.

Comment: Diethyldithiocarbamate (DDC) is a thiol compound, which has the property of an anti-oxidizing agent and reacts as a complexing agent for divalent ions. It forms non-toxic, stable compounds with benzoquinonimines (alkylating agents) and prevents the alkylation of glutathione and probably any thiol group in proteins (1). DDC chelates ions like manganese (3) and copper (5, 6). Due to this enzymes depending on metal ions are inhibited. DDC incubation of superoxide dismutase derived from erythrocytes results in a yellowish brown color and in an inhibition of the enzyme. The addition of copper ions reactivates the enzyme. Staining of this enzyme in the polyacrylamide gel is possible (10 mM DDC in electrophoresis buffer, measured at 448 nm, ref. 5). Due to its anti-oxidizing properties DCC is used during the treatment of HIV infections. DDC also inhibits the induction of NO-Synthetase, probably due to the inhibition of the transcription factor NFkB (4).

Sodium dihydrogen citrate see *mono*-Sodium citrate pure Page 728

Sodium dihydrogen phosphate dihydrateSolubility (20°C) 850 g/L (H₂O)

$H_2NaO_4P \cdot 2H_2O$
 $M = 156.01$ g/mol
 CAS-No.: 13472-35-0
 HS-No.: 28352200
 EC-No.: 231-449-2

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: 1

Sodium dihydrogen phosphate dihydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99 %
 Insoluble matter complies
 pH (5 %; H₂O) 3.5 - 5.5

Chloride max. 0.001 %
 Fluoride max. 0.0001 %
 Sulfate max. 0.001 %
 As max. 0.0001 %

Fe max. 0.0001 %
 Pb max. 0.0001 %

Order-No.	Quantity
A2944,0250	250 g
A2944,0500	500 g
A2944,1000	1 kg

Sodium dihydrogen phosphate dihydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 pH (5 %; H₂O) approx. 4.5 (20°C)
 Chloride max. 0.001 %
 Fluoride max. 0.0001 %

Sulfate max. 0.001 %

A (1 cm/1 M in H₂O)
 260 nm max. 0.1
 280 nm max. 0.07

Order-No.	Quantity
A3902,0500	500 g
A3902,1000	1 kg
A3902,5000	5 kg

Sodium dihydrogen phosphate dihydrate p. A.

C

mono-Sodium phosphate dihydrate,
NaH₂PO₄ · 2H₂O

Specification:

Assay (titr.)	min. 99 %	Pb	max. 0.0001 %
pH (5 %; H ₂ O; 20°C)	approx. 4.5		
Chloride	max. 0.001 %		
Fluoride	max. 0.0001 %		
Sulfate	max. 0.001 %		
As	max. 0.0001 %		
Fe	max. 0.0001 %		

Order-No.	Quantity
A1938,0500	500 g
A1938,1000	1 kg
A1938,10006	6 x 1 kg
A1938,5000	5 kg
A1938,9010	10 kg
A1938,9025	25 kg

Sodium dihydrogen phosphate dihydrate pure Ph. Eur., USP

C

Specification:

Assay (titr., calc. on dried substance)	Organic vol. impurities	complies	Fe	max. 0.001 %
pH (5 %; H ₂ O; 20°C)	Red. substances	complies		
Appearance of solution	pH (5 %; H ₂ O)	4.2 - 4.5		
Heavy metals (as Pb)	Chloride	max. 0.014 %		
Identity	Sulfate	max. 0.03 %		
Insoluble matter	Al, Ca and rel. elements	complies		
Loss on drying	As	max. 0.0002 %		

Order-No.	Quantity
A1939,0500	500 g
A1939,1000	1 kg
A1939,10006	6 x 1 kg
A1939,5000	5 kg
A1939,9010	10 kg
A1939,9025	25 kg

Sodium dihydrogen phosphate monohydrate

mono-Sodium phosphate monohydrate,
NaH₂PO₄ · H₂O

H₂NaO₄P · H₂O
M = 137.99 g/mol
CAS-No.: 10049-21-5
HS-No.: 28352200
EC-No.: 231-449-2

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1

Solubility (20°C) 850 g/L (H₂O)

Sodium dihydrogen phosphate monohydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable	Sulfate	max. 0.003 %	N	max. 0.001 %
Assay (titr.)	min. 99.5 %	Ca	max. 0.005 %	Pb	max. 0.0005 %
pH (5 %; H ₂ O)	approx. 4.5 (20°C)	Fe	max. 0.0005 %		
Chloride	max. 0.0005 %	K	max. 0.005 %		

Order-No.	Quantity
A4229,0250	250 g
A4229,0500	500 g
A4229,1000	1 kg

Sodium dihydrogen phosphate monohydrate Cell culture grade

B

Specification:

Pyrogen test	complies	Sulfate	max. 0.003 %	N	max. 0.001 %
Assay (titr.)	min. 99 %	Ca	max. 0.005 %	Pb	max. 0.0005 %
pH (5 %; H ₂ O)	approx. 4.5 (20°C)	Fe	max. 0.0005 %		
Chloride	max. 0.0005 %	K	max. 0.005 %		

Order-No.	Quantity
A7261,0250	250 g
A7261,0500	500 g
A7261,1000	1 kg

Sodium dihydrogen phosphate monohydrate BioChemica

B

Specification:

Assay (titr.)	min. 99 %	Sulfate	max. 0.003 %	A (1 cm/0.1 M in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %			260 nm	max. 0.01
Insoluble matter	complies			280 nm	max. 0.01
pH (5 %; H ₂ O; 20°C)	approx. 4.5				
Chloride	max. 0.0005 %				

Order-No.	Quantity
A1047,0500	500 g
A1047,1000	1 kg
A1047,5000	5 kg

Sodium dihydrogen phosphate monohydrate p. A.

C

Specification:

Assay (titr.)	min. 99 %	N	max. 0.001 %
pH (5 %; H ₂ O)	approx. 4.5 (20°C)	Pb	max. 0.0005 %
Chloride	max. 0.0005 %		
Sulfate	max. 0.003 %		
Ca	max. 0.005 %		
Fe	max. 0.0005 %		
K	max. 0.005 %		

Order-No.	Quantity
A3559,0500	500 g
A3559,1000	1 kg
A3559,10006	6 x 1 kg
A3559,5000	5 kg
A3559,9010	10 kg
A3559,9025	25 kg

Sodium dihydrogen phosphate monohydrate pure USP

C

Specification:

Assay (titr., calc. on anhydrous subst.)	Water (K.F.)	10.0 - 15.0 %
pH (5 %; H ₂ O)	Chloride	max. 0.014 %
Heavy metals (as Pb)	Sulfate	max. 0.15 %
Identity	Al, Ca & rel. elements	complies
Insoluble matter	As	max. 0.0008 %
Organic vol. impurities		
pH (5 %; H ₂ O)		4.1 - 4.5

Order-No.	Quantity
A1373,0500	500 g
A1373,1000	1 kg
A1373,10006	6 x 1 kg
A1373,5000	5 kg
A1373,9010	10 kg
A1373,9025	25 kg

Sodium dihydrogen phosphate - Solutions

Storage: RT
LGK: 10 - 13

WGK: nwg

Sodium dihydrogen phosphate - Solution (1 M)

B

Buffer stock solution

HS-No.: 28352200

Composition:

NaH₂PO₄ (A3559) 138 g/L

Order-No.	Quantity
A3468,1000	1 L
A3468,5000	5 L

Sodium dihydrogen phosphate - Solution (1/15 M)

B

Buffer stock solution

HS-No.: 38220000

Composition:

NaH₂PO₄ (A3559) 9.20 g/L

Order-No.	Quantity
A3441,1000	1 L
A3441,5000	5 L

tetra-Sodium diphosphate decahydrate see Sodium pyrophosphate decahydrate Page 750

Sodium disulfite

Disulfite, Sodium pyrosulfite, Sodium metabisulfite

Na₂O₅S₂
M = 190.10 g/mol
CAS-No.: 7681-57-4
HS-No.: 28321000
EC-No.: 231-673-0

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
Danger
EUH031-H318-H302
P305+P351+P338-P313-P280



Solubility (20°C) 650 g/L (H₂O)
Thermal dec. 150°C

Sodium disulfite *BioChemica*

B

Specification:

Assay (titr.) min. 97 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H₂O; 20°C) 3.5 - 5.5

Chloride max. 0.005 %
Thiosulfate max. 0.05 %

Order-No.	Quantity
A3903,0500	500 g
A3903,1000	1 kg
A3903,5000	5 kg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 16.5.4 (Suppl. 41) Greene Publishing & Wiley-Interscience, New York.
(2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page 14.5 & 14.16. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: Sodium disulfite is a protease inhibitor. Stock solutions (100 mM) should be made fresh and stored on ice during use. The final concentration (working concentration) varies from 0.1 mM (1) to 10 mM. PMSF and sodium metabisulfite are sufficient in many dialysis buffers. Since this chemical is inexpensive, it is well suited for large volumes of buffers.

Sodium disulfite p. A.

C

Specification:

Assay (titr.) min. 97 %
pH (5 %; H₂O) 3.5 - 5.5 (20°C)
Chloride max. 0.005 %
Thiosulfate max. 0.05 %
As max. 0.00005 %
Cu max. 0.0005 %
Fe max. 0.0005 %

Pb max. 0.0005 %
Zn max. 0.001 %

Order-No.	Quantity
A2410,0500	500 g
A2410,1000	1 kg
A2410,10006	6 x 1 kg
A2410,5000	5 kg
A2410,9010	10 kg
A2410,9025	25 kg

Sodium disulfite pure Ph. Eur., NF

C

Specification:

Assay (titr.) 95.0 - 100.5 %
Assay (titr., SO₂) 65.0 - 67.4 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %
Identity complies
pH (5 %; H₂O) 3.5 - 5.0

Chloride max. 0.05 %
Thiosulfate max. 0.05 %
As max. 0.0005 %
Fe max. 0.002 %

Order-No.	Quantity
A0541,1000	1 kg
A0541,10006	6 x 1 kg
A0541,5000	5 kg
A0541,9010	10 kg
A0541,9025	25 kg

Sodium dodecylsulfate see SDS Page 705

di-Sodium-1,2-ethanedithiolonate see 1,2-Ethanedithiolonate disodium salt IPC grade Page 332

Sodium ethylmercurithiosalicylate see Thimerosal *BioChemica* Page 812

Sodium fluoride

NaF	FNa	Storage: RT	Class / PG: 6.1/III
	<i>M</i> = 41.99 g/mol	LGK: 6.1 B	UN1690
Melting point 993°C	CAS-No.: 7681-49-4	Disposal: 23	WGK: 1
Solubility (20°C) 42 g/L (H ₂ O)	HS-No.: 28261910		Danger
	EC-No.: 231-667-8		EUH032-H315-H301-H319
			P302+P352-P305+P351+P338



Sodium fluoride *BioChemica*

Specification:			Order-No.	Quantity
Assay (titr.) min. 99 %	Sulfate max. 0.01 %	A (1 cm/0.5 M in H ₂ O)	A3904,0025	25 g
Heavy metals (as Pb) max. 0.001 %		260 nm max. 0.01	A3904,0100	100 g
Insoluble matter complies		280 nm max. 0.01	A3904,0500	500 g
Loss on drying max. 0.2 %			A3904,1000	1 kg
Chloride max. 0.005 %				

- Literature:** (1) Sternweis, P.C. & Gilman, A.G. (1982) *Proc. Natl. Acad. Sci. USA* **79**, 4888-4891
 (2) Cockcroft, S. (1987) *Trends Biochem. Sci.* **12**, 75-78
 (3) O'Shea, J.J. *et al.* (1987) *J. Immunol.* **139**, 3463-3469
 (4) Orenco, A. & Maness, P. (1978) *Methods Enzymol.* **51**, 321-331
 (5) Lobert, S. *et al.* (1994) *Biochemistry* **33**, 6244-6252
 (6) Matsuzawa, S.-i. *et al.* (1994) *FEBS Lett.* **356**, 272-274
- Aluminum: A requirement for activation of a regulatory component of adenylate cyclase by fluoride.
 Polyphosphoinositide phosphodiesterase: regulation by a novel guanine nucleotide binding protein, G₁₂.
 Aluminium fluoride induces phosphatidylinositol turnover, elevation of cytoplasmic free calcium and phosphorylation of the T cell antigen receptor in murine cells.
 Pyrimidine nucleoside monophosphate kinase from rat liver and rat Novikoff ascites hepatoma.
 Interaction of tubulin and microtubule proteins with vanadate oligomers.
 Thysiferyl 23-acetate is a novel specific inhibitor of protein phosphatase PP2A.

Comment: The adenylate cyclase can be activated with fluoride. Fluoride forms the complex (AlF₄)⁻ with Al³⁺-ions. Al³⁺ are impurities in almost all nucleotide preparations or glass ware (1). This (AlF₄)⁻-complex interacts with GDP that binds to the α-subunit of the G protein (1, 2). This mimics the GTP-binding and results in a dissociation of the G protein subunits like it occurs after physiological activation. The released α-subunit activates the adenylate cyclase (2). NaF stimulates the degradation of phosphoinositides and the production of phosphoinositols (3).
 Sodium fluoride inhibits pyrimidine nucleoside monophosphate kinase (CMP kinase) at a concentration of 25 mM (4). Sodium fluoride is often added to lysis buffers in a concentration between 10 and 100 mM as it also acts as a phosphatase inhibitor (5, 6).

Sodium fluoride p. A.

Specification:		Order-No.	Quantity
Assay (titr.) min. 99 %	K max. 0.02 %	A0401,0100	100 g
Loss on drying max. 0.2 %	Pb max. 0.001 %	A0401,0500	500 g
Chloride max. 0.005 %	Si max. 0.05 %	A0401,1000	1 kg
Sulfate max. 0.01 %		A0401,10006	6 x 1 kg
Fe max. 0.002 %			

Sodium fluoride pure Ph. Eur., USP

Specification:		Order-No.	Quantity
Assay (titr., calc. on dried substance) 98.5 - 100.5 %	Volatile org. impurities . . complies	A0547,0500	500 g
Acidic/alkaline react. subst. complies	Chloride max. 0.012 %	A0547,1000	1 kg
Appearance of solution complies	SiF ₆ complies	A0547,10006	6 x 1 kg
Heavy metals (as Pb) max. 0.003 %	Sulfate max. 0.02 %	A0547,5000	5 kg
Identity complies		A0547,9010	10 kg
Loss on drying max. 0.5 %		A0547,9025	25 kg

Sodium formiate pure

Formic acid sodium salt	CHNaO₂	Storage: RT	WGK: 1
	<i>M</i> = 68.01 g/mol	LGK: 10 - 13	
Melting point approx. 260°C	CAS-No.: 141-53-7	Disposal: 3	
	HS-No.: 29151200		
	EC-No.: 205-488-0		
Specification:		Order-No.	Quantity
Assay (titr.) min. 98.5 %		A0380,1000	1 kg
Loss on drying max. 0.2 %		A0380,10006	6 x 1 kg
Fe max. 0.002 %		A0380,5000	5 kg
		A0380,9010	10 kg
		A0380,9025	25 kg

Sodium fusidate see Fusidic acid sodium salt *BioChemica* Page 366

Sodium gluconate pure USP

Gluconic acid sodium salt	C₆H₁₁NaO₇	Storage: RT	WGK: 1
	<i>M</i> = 218.14 g/mol	LGK: 10 - 13	
Melting range 170 - 175°C	CAS-No.: 527-07-1		
Solubility (20°C) 590 g/L (H ₂ O)	HS-No.: 29181600		
	EC-No.: 208-407-7		
Specification:		Order-No.	Quantity
Assay (titr.) 98.0 - 102.0 %	Sulfate max. 0.05 %	A4993,0100	100 g
Heavy metals (as Pb) max. 0.002 %	Pb max. 0.001 %	A4993,0500	500 g
Identity complies		A4993,1000	1 kg
Red. substances max. 0.5 %		A4993,10006	6 x 1 kg
Chloride max. 0.07 %			

Sodium-D-glucuronate see D-Glucuronic acid sodium salt monohydrate *BioChemica* Page 379
 Sodium L-glutamate monohydrate see L-Glutamic acid sodium salt monohydrate pure Page 381

Sodium glycocholate *BioChemica*

B

<i>Glycocholic acid sodium salt</i>	$C_{26}H_{42}NNaO_6$	Storage: RT
	$M = 487.60 \text{ g/mol}$	
Aggregation No. 2.1	CAS-No.: 863-57-0	
CMC 7.1 mM	HS-No.: 29242998	
pK_a 3.8	EC-No.: 212-730-9	

Specification:

Assay (TLC) min. 98 %	Cr max. 0.0005 %
$\alpha 20^\circ\text{C/D; 2 \% , H}_2\text{O}$ +27° - +29°	Cu max. 0.0005 %
Cholic acid max. 0.5 %	Fe max. 0.0005 %
Ca max. 0.01 %	Pb max. 0.0005 %

Order-No.	Quantity
A3804,0250	250 mg
A3804,0001	1 g
A3804,0005	5 g

Sodium glyoxylate monohydrate *BioChemica*

B

<i>Glyoxylic acid sodium salt monohydrate</i>	$C_2HNaO_3 \cdot H_2O$	Storage: RT
	$M = 114.03 \text{ g/mol}$	
	CAS-No.: 2706-75-4	
	HS-No.: 29183000	
	EC-No.: 220-298-8	

Specification:

Assay (titr.) min. 99 %
Solubility (5 %; H_2O) clear

Order-No.	Quantity
A3805,0010	10 g
A3805,0025	25 g

Sodium heptylsulfonate see 1-Heptanesulfonic acid sodium salt anhydrous IPC grade Page 404
 Sodium heptylsulfonate monohydrate see 1-Heptanesulfonic acid sodium salt monohydrate IPC grade Page 404

Sodium hydrogen carbonate

<i>Sodium bicarbonate, $NaHCO_3$</i>	$CHNaO_3$	Storage: RT	WGK: nwg
	$M = 84.01 \text{ g/mol}$	LGK: 10 - 13	
Solubility (20°C) 96 g/L (H_2O)	CAS-No.: 144-55-8	Disposal: 14	
Thermal dec. 270°C	HS-No.: 28363000		
	EC-No.: 205-633-8		

Sodium hydrogen carbonate Cell culture grade

B

Specification:

Pyrogen test complies	Sulfate max. 0.005 %	Fe max. 0.001 %
Assay (titr.) min. 99.5 %	As max. 0.0001 %	Mg max. 0.005 %
pH (5 %; H_2O ; 20°C) 7.5 - 8.5	Ca max. 0.005 %	Pb max. 0.0005 %
Chloride max. 0.001 %	Cu max. 0.0005 %	

Order-No.	Quantity
A0384,0500	500 g
A0384,1000	1 kg
A0384,5000	5 kg

Sodium hydrogen carbonate *BioChemica*

B

Specification:

Assay (titr.) min. 99.5 %	Phosphate max. 0.005 %	A (1 cm/1 M in H_2O)
Heavy metals (as Pb) max. 0.001 %	Sulfate max. 0.005 %	260 nm max. 0.02
Insoluble matter complies		280 nm max. 0.02
pH (5 %; H_2O ; 20°C) 7.5 - 8.5		
Chloride max. 0.001 %		

Order-No.	Quantity
A1940,0500	500 g
A1940,1000	1 kg
A1940,5000	5 kg

Comment: Sodium hydrogen carbonate is probably the most important buffer substance in cell culture. At the end of the chapter cell culture powder media, you will find a table for the addition of sodium hydrogen carbonate to the different media.

Sodium hydrogen carbonate p. A.

C

Specification:

Assay (titr.) min. 99.5 %	Cu max. 0.0005 %
pH (5 %; H_2O) 7.5 - 8.5 (20°C)	Fe max. 0.0005 %
Chloride max. 0.001 %	K max. 0.005 %
Phosphate max. 0.005 %	Mg max. 0.005 %
Sulfate max. 0.005 %	Pb max. 0.0005 %
As max. 0.0001 %	
Ca max. 0.005 %	

Order-No.	Quantity
A3590,0500	500 g
A3590,1000	1 kg
A3590,10006	6 x 1 kg
A3590,5000	5 kg
A3590,9010	10 kg
A3590,9025	25 kg

Sodium hydrogen carbonate pure Ph. Eur., USP

C

Specification:

Assay (titr., calc. on dried substance) 99.0 - 100.5 %	Organic vol. impurities complies	Sulfate max. 0.015 %
Appearance of solution complies	Total S max. 0.015 %	Al max. 0.0002 %
Heavy metals (as Pb) max. 0.0005 %	pH (5 %; H_2O) max. 8.6	As max. 0.0002 %
Identity complies	Ammonium (EP) max. 0.002 %	Ca max. 0.01 %
Insoluble matter complies	Ammonium (USP) complies	Cu max. 0.0005 %
Loss on drying max. 0.25 %	Carbonate complies	Fe max. 0.002 %
	Chloride max. 0.015 %	Mg max. 0.004 %

Order-No.	Quantity
A1353,1000	1 kg
A1353,10006	6 x 1 kg
A1353,5000	5 kg
A1353,9010	10 kg
A1353,9025	25 kg

Sodium hydrogen carbonate - Solution 5 %

C

HS-No.: 38220000

Storage: RT

Specification:

Assay min. 5 %
Heavy metals (as Pb) max. 0.0005 %
pH (20°C) 7.5 - 8.5

Chloride max. 0.015 %
Sulfate max. 0.015 %

Order-No.
A2797,5000
A2797,9010
Quantity
5 L
10 L

di-Sodium hydrogen phosphate anhydrous

Solubility (20°C) 77 g/L (H₂O)
Thermal dec.~250°C

HNa₂O₄P
M = 141.96 g/mol
CAS-No.: 7558-79-4
HS-No.: 28352200
EC-No.: 231-448-7

Storage: RT
LGK: 10 - 13
Disposal: 14
WGK: 1

di-Sodium hydrogen phosphate anhydrous Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
Total N max. 0.001 %
pH (5 %; H₂O; 20°C) 8.7 - 9.3

Loss on drying max. 0.2 %
Chloride max. 0.001 %
Fluoride max. 0.0001 %
Sulfate max. 0.005 %
Fe max. 0.001 %
K max. 0.01 %
Pb max. 0.001 %

Order-No.
A2943,0250
A2943,0500
A2943,1000
Quantity
250 g
500 g
1 kg

di-Sodium hydrogen phosphate anhydrous Cell culture grade

B

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
Total N max. 0.001 %
pH (5 %; H₂O; 20°C) 8.7 - 9.3 (20°C)

Loss on drying max. 0.2 %
Chloride max. 0.001 %
Fluoride max. 0.0001 %
Sulfate max. 0.005 %
Fe max. 0.001 %
K max. 0.01 %
Pb max. 0.001 %

Order-No.
A6292,0250
A6292,0500
A6292,1000
Quantity
250 g
500 g
1 kg

di-Sodium hydrogen phosphate anhydrous BioChemica

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Total N max. 0.001 %
pH (5 %; H₂O; 20°C) 8.7 - 9.3

Loss on drying max. 0.2 %
Chloride max. 0.001 %
Fluoride max. 0.0001 %
Sulfate max. 0.005 %
A (1 cm/0.1 M in H₂O)
260 nm max. 0.05
280 nm max. 0.05

Order-No.
A1046,0500
A1046,1000
A1046,5000
Quantity
500 g
1 kg
5 kg

di-Sodium hydrogen phosphate anhydrous p. A.

C

Specification:

Assay (titr.) min. 99 %
Total N max. 0.001 %
pH (5 %; H₂O; 20°C) 8.7 - 9.3
Loss on drying max. 0.2 %
Chloride max. 0.001 %
Fluoride max. 0.0001 %
Sulfate max. 0.005 %

Fe max. 0.001 %
K max. 0.01 %
Pb max. 0.001 %

Order-No.
A3599,0500
A3599,1000
A3599,10006
A3599,5000
A3599,9010
A3599,9025
Quantity
500 g
1 kg
6 x 1 kg
5 kg
10 kg
25 kg

di-Sodium hydrogen phosphate anhydrous pure Ph. Eur., BP, USP, Food grade

C

Specification:

Assay (acidimetr., calc. on dried subst.) 98.0 - 100.5 %
Appearance of solution complies
H₂O-insoluble matter max. 0.2 %
Heavy metals (as Pb) max. 0.001 %
Identity complies
KMnO₄-red. subst. complies

Loss on drying (130°C) max. 1.0 %
pH (1 %; H₂O) 8.7 - 9.3
NaH₂PO₄ max. 1.7 %
Chloride max. 0.02 %
Fluoride max. 0.001 %
Sulfate max. 0.05 %
As max. 0.0002 %
Cd max. 0.0001 %
Fe max. 0.002 %
Hg max. 0.0001 %
Pb max. 0.0004 %

Order-No.
A1372,0500
A1372,1000
A1372,10006
A1372,5000
A1372,9010
A1372,9025
Quantity
500 g
1 kg
6 x 1 kg
5 kg
10 kg
25 kg

di-Sodium hydrogen phosphate dihydrate

Solubility (20°C) 93 g/L (H₂O)
Thermal dec. 95°C

HNa₂O₄P · 2H₂O
M = 177.99 g/mol
CAS-No.: 10028-24-7
HS-No.: 28352200
EC-No.: 231-448-7

Storage: RT
LGK: 10 - 13
Disposal: 14
WGK: 1

di-Sodium hydrogen phosphate dihydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99.5 %
Appearance white powder
pH (5 %; H₂O; 20°C) 8.8 - 9.4

Chloride max. 0.001 %
Fluoride max. 0.0001 %
Sulfate max. 0.005 %
Cu max. 0.0005 %
Fe max. 0.001 %
K max. 0.005 %
Pb max. 0.001 %

Order-No.
A4732,0500
A4732,1000
Quantity
500 g
1 kg

di-Sodium hydrogen phosphate dihydrate BioChemica

B

*Disodium phosphate, Na₂HPO₄ · 2H₂O,**sec.- Sodium phosphate***Specification:**

Assay (titr.)	min. 99.5 %	Fluoride	max. 0.0001 %	A (1 cm/0.1 M in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %	Sulfate	max. 0.005 %	260 nm	max. 0.05
Insoluble matter	complies			280 nm	max. 0.05
pH (5 %; H ₂ O)	8.8 - 9.4 (20°C)				
Chloride	max. 0.001 %				

Order-No.	Quantity
A3905,0500	500 g
A3905,1000	1 kg
A3905,5000	5 kg

di-Sodium hydrogen phosphate dihydrate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %	K	max. 0.005 %
pH (5 %; H ₂ O)	8.8 - 9.4 (20°C)	Pb	max. 0.001 %
Chloride	max. 0.001 %		
Fluoride	max. 0.0001 %		
Sulfate	max. 0.005 %		
Cu	max. 0.0005 %		
Fe	max. 0.001 %		

Order-No.	Quantity
A3567,0500	500 g
A3567,1000	1 kg
A3567,10006	6 x 1 kg
A3567,5000	5 kg
A3567,9010	10 kg
A3567,9025	25 kg

di-Sodium hydrogen phosphate dihydrate pure Ph. Eur., BP, USP

C

Specification:

Assay (titr., calc. on dried substance)	Loss on drying	19.5 - 21.0 %	As	max. 0.0002 %
	Residues of solvents	excl. by manufacturing process	Fe	max. 0.001 %
Appearance of solution	pH (5 %; H ₂ O)	9.0 - 9.2 (20°C)		
H ₂ O-insoluble matter	NaH ₂ PO ₄	max. 1.7 %		
Heavy metals (as Pb)	Chloride	max. 0.005 %		
Identity	Sulfate	max. 0.02 %		
KMnO ₄ -red. subst. (as O)				

Order-No.	Quantity
A2007,0500	500 g
A2007,1000	1 kg
A2007,10006	6 x 1 kg
A2007,5000	5 kg
A2007,9010	10 kg
A2007,9025	25 kg

di-Sodium hydrogen phosphate - Solution (1/15 M)

B

Buffer stock solution

HS-No.: 38220000

Storage: RT

WGK: nwg

Composition:Na₂HPO₄ (A3905) 11.86 g/L

Order-No.	Quantity
A2660,1000	1 L
A2660,5000	5 L

di-Sodium hydrogen phosphate dodecahydrate*sec.-Sodium phosphate, Sodium phosphate dibasic*HNa₂O₄P · 12H₂O

M = 358.14 g/mol

CAS-No.: 10039-32-4

HS-No.: 28352200

EC-No.: 231-448-7

Storage: RT

LGK: 10 - 13

Disposal: 14

WGK: 1

Melting point 35°C (dec.)

Solubility (20°C) 218 g/L (H₂O)**di-Sodium hydrogen phosphate dodecahydrate BioChemica**

B

Specification:

Assay (titr.)	min. 99 %	Sulfate	max. 0.005 %	A (1 cm/0.1 M in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %			260 nm	max. 0.01
Insoluble matter	complies			280 nm	max. 0.01
pH (5 %; H ₂ O)	9.0 - 9.5				
Chloride	max. 0.005 %				

Order-No.	Quantity
A3906,0500	500 g
A3906,1000	1 kg
A3906,5000	5 kg

di-Sodium hydrogen phosphate dodecahydrate p. A.

C

Specification:

Assay (titr.)	min. 99 %	K	max. 0.05 %
pH (5 %; H ₂ O)	9.0 - 9.5	Pb	max. 0.0005 %
Chloride	max. 0.005 %		
Sulfate	max. 0.005 %		
As	max. 0.0005 %		
Cu	max. 0.0005 %		
Fe	max. 0.0005 %		

Order-No.	Quantity
A2530,0500	500 g
A2530,1000	1 kg
A2530,10006	6 x 1 kg
A2530,5000	5 kg
A2530,9010	10 kg
A2530,9025	25 kg

di-Sodium hydrogen phosphate dodecahydrate pure Ph. Eur., BP, USP

C

Specification:

Assay (titr., calc. on dried substance)	Loss on drying	57.0 - 61.0 %	Sulfate	max. 0.01 %
	Residues of solvents	excl. by manufacturing process	As	max. 0.0001 %
Appearance of solution	pH (5 %; H ₂ O)	9.0 - 9.3	Fe	max. 0.001 %
Heavy metals (as Pb)	NaH ₂ PO ₄	max. 0.8 %		
Identity	Water (K.F.)	57.0 - 61.0 %		
In H ₂ O insol. matter	Chloride	max. 0.001 %		
KMnO ₄ -red. subst. (as O)				

Order-No.	Quantity
A2641,0500	500 g
A2641,1000	1 kg
A2641,10006	6 x 1 kg
A2641,5000	5 kg
A2641,9010	10 kg
A2641,9025	25 kg

Sodium hydrogen tartrate monohydrate pure

C

Sodium bitartrate, L(+)-Tartaric acid monosodium salt

$C_4H_5NaO_6 \cdot H_2O$
 $M = 190.08 \text{ g/mol}$
 CAS-No.: 6131-98-2
 HS-No.: 29181300
 EC-No.: 208-400-9

Storage: RT

Melting point 253°C

Specification:

Assay (titr.) min. 99 %
 Chloride max. 0.005 %
 Sulfate max. 0.005 %
 Ca max. 0.005 %

Fe max. 0.005 %

Order-No.	Quantity
A2544,0250	250 g
A2544,0500	500 g
A2544,1000	1 kg

Sodium hydroxide pearls

Boiling point 1390°C
 Melting point 324°C
 Solubility (20°C) 1090 g/L

HNaO
 $M = 40.00 \text{ g/mol}$
 CAS-No.: 1310-73-2
 HS-No.: 28151100
 EC-No.: 215-185-5

Storage: RT
 LGK: 8 B
 Disposal: 13

Class / PG: 8/II
 UN1823
 WGK: 1
 hygroscopic
 Danger
 H314-H290
 P280-P305+P351+P338-
 P301+P330+P331



Sodium hydroxide pearls pure Ph. Eur., BP, Food grade

C

Specification:

Assay (titr.) 98.0 - 100.5 %
 Appearance of solution complies
 H_2O -insoluble matter complies
 Heavy metals (as Pb) max. 0.002 %
 Identity complies
 Na_2SO_4 max. 0.0025 %

NaCl max. 0.008 %
 SiO_2 max. 0.001 %
 Sodium carbonate max. 0.5 %
 As max. 0.00001 %
 Cu max. 0.0002 %
 Fe max. 0.001 %

Hg max. 0.000001 %
 Mn max. 0.00001 %
 Ni max. 0.0003 %
 Pb max. 0.00001 %

Order-No.	Quantity
A4224,1000	1 kg
A4224,10006	6 x 1 kg
A4224,5000	5 kg
A4224,9010	10 kg
A4224,9025	25 kg

Sodium hydroxide pearls technical grade

C

NaOH, Caustic soda

Specification:

Assay (titr.) min. 97 %
 Carbonate max. 2.0 %

Order-No.	Quantity
A2955,5000	5 kg
A2955,9010	10 kg
A2955,9025	25 kg

Sodium hydroxide pellets

Boiling point 1390°C
 Melting point 324°C
 Solubility (20°C) 1090 g/L (H_2O)

HNaO
 $M = 40.00 \text{ g/mol}$
 CAS-No.: 1310-73-2
 HS-No.: 28151100
 EC-No.: 215-185-5

Storage: RT
 LGK: 8 B
 Disposal: 13

Class / PG: 8/II
 UN1823
 WGK: 1
 hygroscopic
 Danger
 H290-H314
 P301+P330+P331-P280-
 P305+P351+P338



Sodium hydroxide pellets Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99 %
 pH (1 M; H_2O) > 12 (20°C)
 Carbonate max. 1.0 %
 Chloride max. 0.0005 %

Phosphate max. 0.0005 %
 Sulfate max. 0.0005 %
 Ca max. 0.0005 %
 Cu max. 0.0002 %
 Fe max. 0.0005 %

K max. 0.05 %
 Mg max. 0.0005 %
 Pb max. 0.0005 %
 Zn max. 0.001 %

Order-No.	Quantity
A6829,0250	250 g
A6829,0500	500 g
A6829,1000	1 kg

Sodium hydroxide pellets BioChemica

B

NaOH, Caustic soda

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 pH (1 M; H_2O) > 12 (20°C)
 Carbonate max. 1.0 %

Chloride max. 0.0005 %
 Phosphate max. 0.0005 %
 Sulfate max. 0.0005 %
 A (1 cm/1 M in H_2O)
 260 nm max. 0.012
 280 nm max. 0.006

Order-No.	Quantity
A3910,0500	500 g
A3910,1000	1 kg
A3910,10006	6 x 1 kg
A3910,5000	5 kg

Sodium hydroxide pellets p. A.

C

Specification:

Assay (titr.)	min. 99 %	Cu	max. 0.0002 %
pH (1 M; H ₂ O; 20°C)	> 12	Fe	max. 0.0005 %
Carbonate	max. 1.0 %	K	max. 0.05 %
Chloride	max. 0.0005 %	Mg	max. 0.0005 %
Phosphate	max. 0.0005 %	Pb	max. 0.0005 %
Sulfate	max. 0.0005 %	Zn	max. 0.001 %
Ca	max. 0.0005 %		

Order-No.	Quantity
A1551,0500	500 g
A1551,1000	1 kg
A1551,10006	6 x 1 kg
A1551,5000	5 kg
A1551,9010	10 kg
A1551,9025	25 kg

Sodium hydroxide pellets pure Ph. Eur., NF

C

Specification:

Assay (titr.)	97.0 - 100.5 %	Chloride	max. 0.005 %
Appearance of solution	complies	Sulfate	max. 0.005 %
Heavy metals (as Pb)	max. 0.002 %	Fe	max. 0.001 %
Identity	complies	K	complies
Insol. subst. and org. matter	complies		
Carbonate	max. 2.0 %		

Order-No.	Quantity
A0991,1000	1 kg
A0991,10006	6 x 1 kg
A0991,5000	5 kg
A0991,9010	10 kg
A0991,9025	25 kg

Sodium hydroxide pellets Technical grade

C

Specification:

Assay (titr.)	approx. 97 %
Carbonate	max. 2.0 %

Order-No.	Quantity
A3223,5000	5 kg
A3223,9010	10 kg
A3223,9025	25 kg

Sodium hydroxide - Solutions (concentrations: ≥ 5 %)

HS-No.: 28151200

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/II
UN1824
WGK: 1
Danger
H314
P313-P305+P351+P338-P280



Sodium hydroxide - Solution 50 % p. A.

C

Specification:

Assay (titr.)	49 - 51 %	Al	max. 0.0005 %
Total N	max. 0.0003 %	Fe	max. 0.0005 %
Carbonate	max. 0.2 %	Pb	max. 0.0005 %
Chloride	max. 0.0005 %		
Silicate	max. 0.005 %		
Sulfate	max. 0.0005 %		

Order-No.	Quantity
A3720,1000	1 L
A3720,10006	6 x 1 L
A3720,2500	2.5 L
A3720,5000CT	5 L
A3720,5000PE	5 L

Sodium hydroxide - Solution 50 % pure

C

Specification:

Assay (titr.)	49 - 51 %
Density (d 20°C)	approx. 1.53 g/cm ³
Carbonate	max. 0.5 %
Chloride	max. 0.005 %
Fe	max. 0.005 %
Pb	max. 0.001 %

Order-No.	Quantity
A2761,2500	2.5 L
A2761,25004	4 x 2.5 L
A2761,5000	5 L
A2761,9010	10 L
A2761,9025	25 L

Sodium hydroxide - Solution 50 % Technical grade

C

Specification:

Assay (titr.)	approx. 50 %
Density (d 20°C)	approx. 1.53 g/cm ³

Order-No.	Quantity
A1264,2500	2.5 L
A1264,25004	4 x 2.5 L
A1264,5000	5 L
A1264,9010	10 L
A1264,9025	25 L

Sodium hydroxide - Solution 50 % for regeneration of desalination equipment

C

DIN 19616 (Bl. 2)

Specification:

Assay (titr.)	approx. 50 %

Order-No.	Quantity
A0592,5000	5 L
A0592,9010	10 L
A0592,9020	20 L

Sodium hydroxide - Solution 45 % p.A.

C

Specification:

Assay (titr.)	min. 45 %	Al	max. 0.0005 %
Total N	max. 0.0003 %	Fe	max. 0.0005 %
Carbonate	max. 0.2 %	Pb	max. 0.0005 %
Chloride	max. 0.0005 %		
Silicate	max. 0.005 %		
Sulfate	max. 0.0005 %		

Order-No.	Quantity
A3371,1000	1 L
A3371,10006	6 x 1 L
A3371,2500	2.5 L
A3371,5000CT	5 L
A3371,5000PE	5 L

Sodium hydroxide - Solution 45 % for regeneration of desalination equipment

C

DIN 19616 (Bl. 2)

Specification:

Assay (titr.) min. 45 %

Order-No.	Quantity
A0888,5000	5 L
A0888,9010	10 L
A0888,9020	20 L

Sodium hydroxide - Solution 45 % Technical grade

C

Specification:

Assay (titr.) approx. 45 %

Density (d 20°C) approx. 1.48 g/cm³

Order-No.	Quantity
A2005,2500	2.5 L
A2005,25004	4 x 2,5 L
A2005,5000	5 L
A2005,9010	10 L
A2005,9025	25 L

Sodium hydroxide - Solution 40 % p. A.

C

Specification:

Assay (titr.) min. 40 %

Total N max. 0.0003 %

Carbonate max. 0.2 %

Chloride max. 0.0005 %

Silicate max. 0.005 %

Sulfate max. 0.0005 %

Al max. 0.0005 %

Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.	Quantity
A2651,1000	1 L
A2651,10006	6 x 1 L
A2651,2500	2.5 L
A2651,25004	4 x 2,5 L
A2651,5000CT	5 L
A2651,5000PE	5 L

Sodium hydroxide - Solution 40 % pure

C

Specification:

Assay (titr.) approx. 40 %

Total N max. 0.0003 %

Carbonate max. 1 %

Chloride max. 0.005 %

Silicate max. 0.005 %

Sulfate max. 0.005 %

Al max. 0.0005 %

Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.	Quantity
A1779,1000	1 L
A1779,10006	6 x 1 L
A1779,2500	2.5 L
A1779,25004	4 x 2,5 L
A1779,5000	5 L
A1779,9010	10 L
A1779,9025	25 L

Sodium hydroxide - Solution 32 % for nitrogen determination

C

Specification:

Assay (titr.) min. 32 %

Density (d 20°C) approx. 1.35 g/cm³

Total N max. 0.0001 %

Carbonate max. 0.2 %

Chloride max. 0.0005 %

Silicate max. 0.001 %

Sulfate max. 0.0005 %

Al max. 0.0005 %

Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.	Quantity
A4604,1000	1 L
A4604,10006	6 x 1 L
A4604,2500	2.5 L
A4604,25004	4 x 2,5 L
A4604,5000	5 L
A4604,9010	10 L
A4604,9025	25 L

Sodium hydroxide - Solution 32 % p. A.

C

Specification:

Assay (titr.) min. 32 %

Density (d 20°C) approx. 1.35 g/cm³

Total N max. 0.0003 %

Carbonate max. 0.2 %

Chloride max. 0.0005 %

Silicate max. 0.005 %

Sulfate max. 0.0005 %

Al max. 0.0005 %

Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.	Quantity
A2411,1000	1 L
A2411,10006	6 x 1 L
A2411,2500	2.5 L
A2411,25004	4 x 2,5 L
A2411,5000CT	5 L
A2411,5000PE	5 L
A2411,9010CT	10 L
A2411,9010PE	10 L
A2411,9020	20 L
A2411,9025	25 L

Sodium hydroxide - Solution 32 % pure

C

Specification:

Assay (titr.) approx. 32 %

Density (d 20°C) approx. 1.35 g/cm³

Total N max. 0.0003 %

Carbonate max. 1 %

Chloride max. 0.002 %

Silicate max. 0.005 %

Sulfate max. 0.003 %

Al max. 0.0005 %

Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.	Quantity
A0643,1000	1 L
A0643,10006	6 x 1 L
A0643,2500	2.5 L
A0643,25004	4 x 2,5 L
A0643,5000	5 L
A0643,9010	10 L
A0643,9020	20 L
A0643,9025	25 L

Sodium hydroxide - Solution 32 % Technical grade

C

Specification:

Assay (titr.) approx. 32 %
Density (d 20°C) approx. 1.35 g/cm³

Order-No.	Quantity
A0786,2500	2.5 L
A0786,25004	4 x 2,5 L
A0786,5000	5 L
A0786,9010	10 L
A0786,9025	25 L

Sodium hydroxide - Solution 32 % for regeneration of desalination equipment

C

DIN 19616 (Bl. 2)

Specification:

Assay (titr.) min. 32 %

Order-No.	Quantity
A0897,5000	5 L
A0897,9010	10 L
A0897,9020	20 L

Sodium hydroxide - Solution 30 % pure

C

Specification:

Assay (titr.) approx. 30 %
Density (d 20°C) approx. 1.30 g/cm³
Total N max. 0.0003 %
Carbonate max. 1 %
Chloride max. 0.002 %
Silicate max. 0.005 %
Sulfate max. 0.003 %
Al max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A3355,1000	1 L
A3355,10006	6 x 1 L
A3355,2500	2.5 L
A3355,25004	4 x 2,5 L
A3355,5000	5 L
A3355,9010	10 L

Sodium hydroxide - Solution 25 % p. A.

C

Specification:

Assay (titr.) min. 25 %
Total N max. 0.0003 %
Carbonate max. 0.2 %
Chloride max. 0.0005 %
Silicate max. 0.005 %
Sulfate max. 0.0005 %
Al max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A3293,1000	1 L
A3293,10006	6 x 1 L
A3293,2500	2.5 L
A3293,5000CT	5 L
A3293,5000PE	5 L

Sodium hydroxide - Solution 25 % pure

C

Specification:

Assay (titr.) approx. 25 %
Total N max. 0.0003 %
Carbonate max. 1 %
Chloride max. 0.002 %
Silicate max. 0.005 %
Sulfate max. 0.003 %
Al max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A4209,1000	1 L
A4209,10006	6 x 1 L
A4209,2500	2.5 L
A4209,5000	5 L
A4209,9010	10 L

Sodium hydroxide - Solution 25 % technical grade

C

Specification:

Assay (titr.) approx. 25 %

Order-No.	Quantity
A4565,5000	5 L
A4565,9010	10 L
A4565,9020	20 L

Sodium hydroxide - Solution 20 % p. A.

C

Specification:

Assay (titr.) min. 20 %
Total N max. 0.0003 %
Carbonate max. 0.2 %
Chloride max. 0.0005 %
Silicate max. 0.005 %
Sulfate max. 0.0005 %
Al max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A3357,1000	1 L
A3357,10006	6 x 1 L
A3357,2500	2.5 L
A3357,25004	4 x 2,5 L
A3357,5000CT	5 L
A3357,5000PE	5 L

Sodium hydroxide - Solution 20 % pure

C

Specification:

Assay (titr.) approx. 20 %
Total N max. 0.0003 %
Carbonate max. 1 %
Chloride max. 0.002 %
Silicate max. 0.005 %
Sulfate max. 0.003 %
Al max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A4198,1000	1 L
A4198,10006	6 x 1 L
A4198,2500	2.5 L
A4198,5000	5 L
A4198,9010	10 L

Sodium hydroxide - Solution 15 % pure

C

Specification:

Assay (titr.) approx. 15 %
Total N max. 0.0003 %
Chloride max. 0.002 %
Silicate max. 0.005 %
Sulfate max. 0.003 %
Al max. 0.0005 %
Fe max. 0.0005 %
Pb max. 0.0005 %

Order-No.	Quantity
A4456,1000	1 L
A4456,10006	6 x 1 L
A4456,2500	2.5 L
A4456,25004	4 x 2,5 L
A4456,5000	5 L
A4456,9010	10 L

Sodium hydroxide - Solution 10 % p. A.

C

Specification:

Assay (titr.)	min. 10 %	Sulfate	max. 0.0005 %
Density (d 20°C)	approx. 1.11 g/cm ³	Al	max. 0.0005 %
Total N	max. 0.0003 %	Fe	max. 0.0005 %
Carbonate	max. 0.2 %	Pb	max. 0.0005 %
Chloride	max. 0.0005 %		
Silicate	max. 0.005 %		

Order-No.	Quantity
A2666,1000	1 L
A2666,10006	6 x 1 L
A2666,2500	2.5 L
A2666,5000CT	5 L
A2666,5000PE	5 L

Sodium hydroxide - Solution 10 % pure

C

Specification:

Assay (titr.)	approx. 10 %	Pb	max. 0.0005 %
Total N	max. 0.0003 %		
Chloride	max. 0.005 %		
Silicate	max. 0.005 %		
Sulfate	max. 0.003 %		
Al	max. 0.0005 %		
Fe	max. 0.0005 %		

Order-No.	Quantity
A2655,1000	1 L
A2655,10006	6 x 1 L
A2655,2500	2.5 L
A2655,5000	5 L
A2655,9010	10 L
A2655,9025	25 L

Sodium hydroxide - Solution 6.8 % pure

C

Specification:

Assay (titr.)	approx. 6.8 %	Silicate	max. 0.005 %	Fe	max. 0.0005 %
Total N	max. 0.0003 %	Sulfate	max. 0.003 %	Pb	max. 0.0005 %
Chloride	max. 0.002 %	Al	max. 0.0005 %		

Order-No.	Quantity
A0600,1000	1 L
A0600,5000	5 L

Sodium hydroxide - Solution 5 % pure

C

NaOH

Specification:

Assay (titr.)	approx. 5 %	Al	max. 0.0005 %
Total N	max. 0.0001 %	Fe	max. 0.0005 %
Chloride	max. 0.002 %	Pb	max. 0.0005 %
Silicate	max. 0.005 %		
Sulfate	max. 0.003 %		

Order-No.	Quantity
A0389,1000	1 L
A0389,2500	2.5 L
A0389,5000	5 L
A0389,9010	10 L

Sodium hydroxide - Solutions (concentrations: ≥ 2 % - < 5 %)

NaOH

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN1824
WGK: 1
Danger
H314
P313-P305+P351+P338-P280



Sodium hydroxide - Solution 4 % Technical grade

C

Specification:

Assay (titr.)	approx. 4 %

Order-No.	Quantity
A4422,5000	5 L
A4422,9010	10 L
A4422,9025	25 L

Sodium hydroxide - Solution 3 % pure

C

Specification:

Assay (titr.)	approx. 3 %
Carbonate	max. 0.05 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A0895,2500	2.5 L
A0895,5000	5 L
A0895,9010	10 L

Sodium hydroxide - Solution 1 % pure

C

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13

Class / PG: 8/III
UN1824
Warning
H315-H319
P305+P351+P338-P280-P313



Specification:

Assay (titr.)	approx. 1 %	Fe	max. 0.0005 %
Total N	max. 0.0001 %	Pb	max. 0.0005 %
Chloride	max. 0.002 %		
Sulfate	max. 0.003 %		
Al	max. 0.0005 %		

Order-No.	Quantity
A5059,1000	1 L
A5059,10006	6 x 1 L
A5059,5000	5 L
A5059,9010	10 L

Sodium hydroxide - Solution (1 M) Molecular biology grade

B

HS-No.: 38220000

Storage: RT
LGK: 8 B
Disposal: 13Class / PG: 8/III
UN1824
WGK: nwg
Danger
H314
P305+P351+P338-P313-P280**Composition:**

NaOH 40 g/L

Specification:DNases/RNases/Proteases
..... not detectable

Order-No.	Quantity
A6579,0500	500 ml
A6579,1000	1 L

Sodium hydroxide - Standard volumetric solutions (concentrations ≥ 1.25 M)

HS-No.: 28151200

Storage: RT
LGK: 8 B
Disposal: 13Class / PG: 8/II
UN1824
WGK: 1
Danger
H314
P305+P351+P338-P313-P280**Sodium hydroxide - Standard volumetric solution (10 M)**

C

*10 mol/L (10 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2772,1000	1 L
A2772,10006	6 x 1 L
A2772,5000CT	5 L
A2772,5000PE	5 L

Sodium hydroxide - Standard volumetric solution (8 M)

C

*8 mol/L (8 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4295,0500	500 ml
A4295,1000	1 L
A4295,10006	6 x 1 L
A4295,5000CT	5 L
A4295,5000PE	5 L

Sodium hydroxide - Standard volumetric Solution (6 M)

C

*NaOH**6 mol/L (6 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2509,0500	500 ml
A2509,1000	1 L
A2509,10006	6 x 1 L
A2509,5000CT	5 L
A2509,5000PE	5 L

Sodium hydroxide - Standard volumetric Solution (5 M)

C

*5 mol/L (5 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2517,1000	1 L
A2517,10006	6 x 1 L
A2517,5000CT	5 L
A2517,5000PE	5 L

Sodium hydroxide - Standard volumetric solution (4 M)

C

*4 mol/L (4 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4239,0500	500 ml
A4239,1000	1 L
A4239,10006	6 x 1 L
A4239,5000CT	5 L
A4239,5000PE	5 L

Sodium hydroxide - Standard volumetric Solution (2 M)

C

2 mol/L (2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2518,1000	1 L
A2518,10006	6 x 1 L
A2518,5000CT	5 L
A2518,5000PE	5 L
A2518,9010CT	10 L
A2518,9010PE	10 L

Sodium hydroxide - Standard volumetric solutions (conc. ≥ 0.5 M - < 1.25 M)

NaOH	HS-No.: 38220000	Storage: RT LGK: 8 B Disposal: 13	Class / PG: 8/III UN1824 WGK: nwg Danger H314 P280-P313-P305+P351+P338



Sodium hydroxide - Standard volumetric Solution (1 M)

C

1 mol/L (1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1432,1000	1 L
A1432,10006	6 x 1 L
A1432,5000CT	5 L
A1432,5000PE	5 L
A1432,9010CT	10 L
A1432,9010PE	10 L

Sodium hydroxide - Standard volumetric Solution (0.5 M)

C

0.5 mol/L (0.5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2406,1000	1 L
A2406,10006	6 x 1 L
A2406,5000CT	5 L
A2406,5000PE	5 L
A2406,9010CT	10 L
A2406,9010PE	10 L

Sodium hydroxide - Standard volumetric solutions (conc. > 0.13 M - < 0.5 M)

HS-No.: 38220000	Storage: RT LGK: 8 B Disposal: 13	Class / PG: 8/III UN1824 WGK: nwg Warning H319-H315 P280-P313-P305+P351+P338



Sodium hydroxide - Standard volumetric solution (1/2.8 M)

C

1/2.8 mol/L (1/2.8 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1443,1000	1 L
A1443,5000CT	5 L
A1443,5000PE	5 L

Sodium hydroxide - Standard volumetric solution (0.33 M)

C

0.33 mol/L (0.33 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4596,1000	1 L
A4596,10006	6 x 1 L
A4596,5000CT	5 L
A4596,5000PE	5 L
A4596,9010CT	10 L
A4596,9010PE	10 L

Sodium hydroxide - Standard volumetric Solution (0.25 M)

C

*0.25 mol/L (0.25 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2420,1000	1 L
A2420,10006	6 x 1 L
A2420,5000CT	5 L
A2420,5000PE	5 L
A2420,9010CT	10 L
A2420,9010PE	10 L

Sodium hydroxide - Standard volumetric Solution (0.2 M)

C

*NaOH**0.2 mol/L (0.2 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0546,1000	1 L
A0546,10006	6 x 1 L
A0546,5000CT	5 L
A0546,5000PE	5 L
A0546,9010CT	10 L
A0546,9010PE	10 L

Sodium hydroxide - Standard volumetric solutions (concentrations < 0.125 M)*NaOH*

HS-No.: 38220000

Storage: RT

LGK: 8 B

Disposal: 13

Sodium hydroxide - Standard volumetric Solution (0.1 M)

C

*0.1 mol/L (0.1 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1306,1000	1 L
A1306,10006	6 x 1 L
A1306,5000CT	5 L
A1306,5000PE	5 L
A1306,9010CT	10 L
A1306,9010PE	10 L

Sodium hydroxide - Standard volumetric Solution (0.05 M)

C

*0.05 mol/L (0.05 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2653,1000	1 L
A2653,10006	6 x 1 L
A2653,5000CT	5 L
A2653,5000PE	5 L

Sodium hydroxide - Standard volumetric solution (0.02 M)

C

*0.02 mol/L (0.02 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4329,1000	1 L
A4329,10006	6 x 1 L
A4329,5000CT	5 L
A4329,5000PE	5 L

Sodium hydroxide - Standard volumetric Solution (0.01 M)

C

*0.01 mol/L (0.01 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0542,1000	1 L
A0542,10006	6 x 1 L
A0542,5000CT	5 L
A0542,5000PE	5 L

Sodium hydroxide - Standard volumetric Solution (0.005 M)

C

*0.005 mol/L (0.005 N Solution)***Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2658,1000	1 L
A2658,10006	6 x 1 L
A2658,5000CT	5 L
A2658,5000PE	5 L

Sodium hydroxide - Standard volumetric Solution (0.001 M)

C

0.001 mol/L (0.001 N Solution)

Specification:

Factor limits 0.995 - 1.005

Order-No.	Quantity
A2664,1000	1 L
A2664,5000CT	5 L
A2664,5000PE	5 L

Sodium hypochlorite - Solutions

NaOCl

ClNaO in H₂O
M = 74.45 g/mol
CAS-No.: 7681-52-9
HS-No.: 28289000

Storage: <20°C
LGK: 8 B

Danger
EUH31-H314-H400
P305+P351+P338-P280-P313



Sodium hypochlorite - Solution 13 % Technical grade

C

Class / PG: 8/III
UN1791
WGK: 2

Specification:

Assay (active chlorine, iodometr.)
..... 10.0 - 14.0 %
NaCl max. 11.5 %
NaClO 10.0 - 14.0 %

Order-No.	Quantity
A1647,5000	5 L
A1647,9010	10 L
A1647,9025	25 L

* The specification refers to the date of filling. Depending on the length of storage and temperature a decrease in the concentration of the active chlorine is expected.

Comment: Approx. daily loss of active chlorine in g/L, when stored open: 5.6 (35°C); 3.2 (30°C); 2.0 (25°C); 1.1 (20°C)

Sodium hypochlorite - Solution 4 % Technical grade

C

Specification:

Active Chlorine approx. 4 %
NaCl max. 4.5 %
NaClO approx. 4.5 %

Order-No.	Quantity
A0399,5000	5 L
A0399,9010	10 L
A0399,9025	25 L

* The specification refers to the date of filling. Depending on the length of storage and temperature a decrease in the concentration of the active chlorine is expected.

Sodium iodate p. A.

C

INaO₃
M = 197.89 g/mol
CAS-No.: 7681-55-2
HS-No.: 28299080
EC-No.: 231-672-5

Storage: RT
LGK: 5.1 B
Disposal: 22

Class / PG: 5.1/II
UN1479
WGK: 1
Danger
H272
P210



Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.0005 %
pH (5 %; H₂O) 5.0 - 8.0

Chloride, Bromide max. 0.02 %
Sulfate max. 0.005 %

Order-No.	Quantity
A5027,0025	25 g
A5027,0100	100 g

Sodium iodide

NaI

INa
M = 149.89 g/mol
CAS-No.: 7681-82-5
HS-No.: 28276000
EC-No.: 231-679-3

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
Warning
H400
P262-P273



Boiling point 1300°C
Melting point 662°C
Solubility (20°C) 1790 g/L (H₂O)

Sodium iodide p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Loss on drying max. 0.5 %
pH (5 %; H₂O; 20°C) 6.0 - 9.0
Chloride max. 0.01 %
Iodate max. 0.0005 %

Sulfate max. 0.002 %
Ca max. 0.001 %
Cu max. 0.0001 %
Fe max. 0.0005 %
K max. 0.01 %
Pb max. 0.0001 %

Order-No.	Quantity
A1887,0100	100 g
A1887,0250	250 g
A1887,0500	500 g
A1887,1000	1 kg

Sodium iodide pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
Alkaline reacting subst. complies
Appearance of solution complies
Heavy metals (as Pb) 0.001 %
Identity complies
Loss on drying max. 2.0 %
Organic vol. impurities complies

Iodate complies
Nitrate, Nitrite, Ammonium complies
Sulfate max. 0.015 %
Thiosulfate and Ba complies
Fe max. 0.002 %
K complies

Order-No.	Quantity
A3519,0100	100 g
A3519,0250	250 g
A3519,0500	500 g
A3519,1000	1 kg
A3519,10006	6 x 1 kg
A3519,5000	5 kg

Sodium iodoacetate see Iodoacetic acid sodium salt *BioChemica* Page 456
 Sodium isothiocyanate see Sodium thiocyanate pure Page 755
 Sodium L-lactate see L-(+)-Lactic acid sodium salt crystalline *BioChemica* Page 477
 Sodium L-lactate - Solution 50 % see L-Lactic acid sodium salt - Solution 50 % low endotoxin pure Ph. Eur., USP Page 477
 Sodium lauroylsarcosinate - Solutions see N-Lauroylsarcosinate - Solutions Page 480
 Sodium laurylsulfate see SDS Page 705
 Sodium laurylsulfonate see 1-Dodecanesulfonic acid sodium salt IPC grade Page 305
 Sodium metabisulfite see Sodium disulfite Page 732

Sodium metaperiodate p. A.

B

<i>Sodium periodate</i>	INaO ₄ <i>M</i> = 213.89 g/mol	Storage: RT LGK: 5.1 A Disposal: 22	Class / PG: 5.1/I UN1479 WGK: 1 Danger H271 P210
Boiling point	 300°C		
Melting point	 175°C (dec.)		
	CAS-No.: 7790-28-5 HS-No.: 28299080 EC-No.: 232-197-6		



Specification:

Assay (titr.)	 min. 99.5 %	 max. 0.01 %
Heavy metals (as Pb)	 max. 0.001 %	Sulfate max. 0.005 %
Chloride, Chlorate, Bromide, Bromate (as Cl)		Mn max. 0.0003 %

Order-No.	Quantity
A3806,0050	50 g
A3806,0250	250 g

Sodium methanesulfonate see Methanesulfonic acid sodium salt pure Page 533

Sodium molybdate dihydrate

Solubility (20°C)	 840 g/L (H ₂ O)	MoNa ₂ O ₄ · 2H ₂ O <i>M</i> = 241.95 g/mol	Storage: RT LGK: 10 - 13 Disposal: 15
		CAS-No.: 10102-40-6 HS-No.: 28417000 EC-No.: 231-551-7	

Sodium molybdate dihydrate *BioChemica*

B

Specification:

Assay (titr.)	 min. 99 %	Chloride max. 0.005 %
Heavy metals (as Pb)	 max. 0.001 %	Phosphate max. 0.001 %
pH (5 %; H ₂ O; 20°C)	 7.0 - 10.0	Sulfate max. 0.005 %
Ammonium	 max. 0.001 %	

Order-No.	Quantity
A2193,0025	25 g
A2193,0100	100 g
A2193,0250	250 g

Literature: (1) Wu, Y.Y. & Bradshaw, R.A. (1993) *J. Cell Biol.* **121**, 409-422

Effect of nerve growth factor and fibroblast growth factor on PC12 cells: Inhibition by Orthovanadate.

Comment: Molybdate is a tyrosine phosphatase inhibitor (working concentration 1 - 10 mM) and is added to the inhibitor-cocktails. Usually the sodium or ammonium salt is used.

Sodium molybdate dihydrate Technical grade

C

Specification:

Assay (titr.)	 min. 96 %
Loss on drying	 13 - 17 %
Chloride	 max. 0.01 %

Order-No.	Quantity
A4779,0500	500 g
A4779,1000	1 kg
A4779,10006	6 x 1 kg
A4779,5000	5 kg

Sodium 1-naphthyl phosphate see 1-Naphthyl phosphate monosodium salt monohydrate *BioChemica* Page 561

Sodium nitrate

NaNO ₃	NNaO ₃ <i>M</i> = 84.99 g/mol	Storage: RT LGK: 5.1 B Disposal: 14	Class / PG: 5.1/III UN1498 WGK: 1 Danger H272-H302 P260
Density (d 20°C)	 approx. 2.26		
Melting point	 309°C		
Solubility (20°C)	 874 g/L (H ₂ O)		
Thermal dec.	 380°C		
	EC-No.: 231-554-3		



Sodium nitrate *BioChemica*

B

Specification:

Assay (titr.)	 min. 99 %	Ammonium max. 0.005 %	Sulfate max. 0.003 %
Heavy metals (as Pb)	 max. 0.001	Chloride max. 0.0005 %	
Insoluble matter	 complies	Nitrite max. 0.001 %	
pH (5 %; H ₂ O)	 5.5 - 8.0 (20°C)	Phosphate max. 0.0005 %	

Order-No.	Quantity
A3911,0500	500 g
A3911,1000	1 kg
A3911,5000	5 kg

Sodium nitrate p. A.

C

Specification:

Assay (titr.)	 min. 99 %	Sulfate max. 0.003 %
Ammonium	 max. 0.005 %	Ca max. 0.005 %
Chloride	 max. 0.0005 %	Fe max. 0.0005 %
Nitrite	 max. 0.001 %	K max. 0.005 %
Phosphate	 max. 0.0005 %	

Order-No.	Quantity
A3125,0500	500 g
A3125,1000	1 kg
A3125,10006	6 x 1 kg
A3125,5000	5 kg

Sodium nitrate pure Food grade

C

Specification:

Assay (titr.) 99.0 - 100.5 %
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Total Chlorine max. 0.2 %
 pH (5 %; H₂O) 5.5 - 8.3
 Chloride max. 0.001 %
 Nitrite max. 0.0005 %

Sulfate max. 0.01 %
 As max. 0.0003 %
 Fe max. 0.001 %
 Hg max. 0.0001 %
 K max. 0.01 %
 Pb max. 0.0005 %
 Zn max. 0.001 %

Order-No.	Quantity
A2194,0500	500 g
A2194,1000	1 kg
A2194,10006	6 x 1 kg
A2194,5000	5 kg
A2194,9010	10 kg
A2194,9025	25 kg

Sodium nitrate pure

C

Specification:

Assay (titr.) min. 98 %
 Nitrite max. 0.05 %

Order-No.	Quantity
A3506,1000	1 kg
A3506,10006	6 x 1 kg
A3506,5000	5 kg
A3506,9010	10 kg
A3506,9025	25 kg

Sodium nitriteNaNO2NaNO2

Storage: RT

Class / PG: 5.1(6.1)/III

Melting range 271 - 281°C

 $M = 69.00 \text{ g/mol}$

LGK: 5.1 B

CAS-No.: 7632-00-0

Disposal: 28

HS-No.: 28341000

EC-No.: 231-555-9

WGK: 2

hygroscopic

Danger

H301-H400-H272

P309-P273-P310

**Sodium nitrite p. A.**

C

Solubility (20°C) 820 g/L (H₂O)**Specification:**

Assay min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Chloride max. 0.005 %
 Sulfate max. 0.005 %

Ca max. 0.001 %
 Cu max. 0.001 %
 Fe max. 0.001 %

Order-No.	Quantity
A7014,0250	250 g
A7014,0500	500 g
A7014,1000	1 kg

Sodium nitrite pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 100.5 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.002 %
 Identity complies

Loss on drying max. 0.25 %
 Chloride max. 0.005 %
 Sulfate max. 0.02 %

Order-No.	Quantity
A2195,0500	500 g
A2195,1000	1 kg
A2195,10006	6 x 1 kg
A2195,5000	5 kg

Sodium 1-nonane sulfonate see 1-Nonanesulfonic acid sodium salt IPC grade Page 576

Sodium 1-octane sulfonate see 1-Octanesulfonic acid sodium salt IPC grade Page 581

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Sodium orthovanadate *BioChemica*

B

Melting point 850 - 866°C

Na₃VO₄
M = 183.9 g/mol
 CAS-No.: 13721-39-6
 HS-No.: 28419030

Storage: RT
 LGK: 10 - 13

WGK: 3
 Warning
 H332-H312-H302
 P280

**Specification:**

Assay (titr.) min. 98 %

Order-No.	Quantity
A2196,0005	5 g
A2196,0010	10 g
A2196,0025	25 g

- Literature:** (1) Seargeant, L.E. & Stinson, R.A. (1979) *Biochem. J.* **181**, 247-250
 (2) Bond, G.H. & Hudgins, P.M. (1980) *Biochim. Biophys. Acta* **600**, 781-790
 (3) Goodno, C.C. (1982) *Methods Enzymol.* **65**, 116-123
 (4) Wu, Y.Y. & Bradshaw, R.A. (1993) *J. Cell Biol.* **121**, 409-422
 (5) Ward, Y. et al. (1994) *Nature* **367**, 651-654
 (6) Nechay, B.R. et al. (1986) *Fed. Proc.* **45**, 123-132
 (7) Matejovicova, M. et al. (1997) *Anal. Biochem.* **245**, 252-254
 (8) Shareef, M.M. & Shetty, K.T. (1998) *Anal. Biochem.* **258**, 143-146

Inhibition of human alkaline phosphatases by Vanadate.
 Inhibition of red cell Ca²⁺-ATPase by Vanadate.
 Myosin active-site trapping with vanadate ion.
 Effect of nerve growth factor and fibroblast growth factor on PC12 cells: Inhibition by Orthovanadate.
 Control of MAP kinase activation by mitogen-induced threonine/tyrosine phosphatase PAC1.
 Symposium Summary: Role of vanadium in biology.
 Vanadat-effect on Coomassie Brilliant Blue microassay.
 Vanadat-effect on different Coomassie Brilliant Blue forms and protein assays.

Comment: Orthovanadate (VO₄)³⁻ is an analog to phosphate ions. It inhibits tyrosine phosphatases (e. g. ref. 4, 6). In the presence of ADP it forms a stable complex with myosin, which can be separated by denaturation of (3). Orthovanadate is a competitive inhibitor of the alkaline phosphatase derived from different organisms (human, wheat germ, *E. Coli* etc.). The *K_i*-value for alkaline phosphatase in different human tissues is below 1 μM (1). The Ca²⁺-dependent ATPase from erythrocytes will be halfmaximally inhibited with 1.5 μM vanadate. The inhibitory effect will be enhanced by K⁺- and Mg²⁺-ions (2). Also the mitogen activated threonine/tyrosine phosphatase PAC1 is inhibited by vanadate (5). Vanadate influences the Coomassie® brilliant blue assay of proteins but not BCA or Lowry assay (7, 8).

Stability: Sodium orthovanadate is added at concentration between 0.1 - 1 mM to the phosphatase inhibitor cocktails. For some special cases, the concentration is raised to 2 - 5 mM. Stock solutions of 100 mM Vanadate (V) are conveniently prepared by dissolving Na₃VO₄ or V₂O₅ in water and adjusting the solution to approximately pH 10 with 6 N HCl or 10 N NaOH, respectively (working concentration 0.1 mM - 1 mM). Stock solutions can be stored in the absence of reducing agents for several months. V_i exists in a slow, pH-dependent equilibrium with various polymeric vanadate species. An alkaline pH value shifts the equilibrium. Polymers of vanadate have an orange-yellowish color. Boiling destroys the polymers. Boil the solution until it is colorless, followed by rechecking the pH of the cooled solution (Repeat if necessary!). Do not use the solution if they turn noticeably yellow (from Ref. 3). The actual V_i-concentration can be determined by dilution of an aliquot of the stock solution with water and measurement at 265 nm (*E*₂₆₅ = 2925 M⁻¹ cm⁻¹; ref. 3).

Sodium oxamate see Oxamic acid sodium salt Page 589

Sodium 1-pentanesulfonate see 1-Pentanesulfonic acid sodium salt anhydrous IPC grade Page 603

Sodium 1-pentanesulfonate monohydrate see 1-Pentanesulfonic acid sodium salt monohydrate IPC grade Page 603

Sodium perborate tetrahydrate

Melting point 63°C
 Solubility (20°C) 23 g/L (H₂O)

BNaO₃ · 4H₂O
M = 153.86 g/mol
 CAS-No.: 13517-20-9
 HS-No.: 28403000
 EC-No.: 239-172-9

Storage: RT
 LGK: 10 - 13

Class / PG: 5.1/II
 UN1479
 WGK: 1
 Danger
 H272-H331-H360D-H318-H302-H335
 P304+P340-P208-P305+P351+P338



Sodium perborate tetrahydrate p. A.

C

Specification:

Assay (titr.) min. 96 %
 Chloride max. 0.05 %
 Sulfate max. 0.01 %
 Cu max. 0.005 %
 Fe max. 0.001 %

Mn max. 0.001 %
 Pb max. 0.001 %
 Zn max. 0.001 %

Order-No.	Quantity
A3602,0250	250 g
A3602,0500	500 g
A3602,1000	1 kg
A3602,5000	5 kg

Sodium perborate tetrahydrate pure

C

Specification:

Assay (titr.) min. 95 %
 Chloride max. 0.1 %
 Sulfate max. 0.05 %
 Fe max. 0.005 %
 Pb max. 0.005 %
 Zn max. 0.05 %

Order-No.	Quantity
A3515,0500	500 g
A3515,1000	1 kg
A3515,5000	5 kg
A3515,9010	10 kg
A3515,9025	25 kg

Sodium perborate tetrahydrate Technical grade

C

Specification:

Assay (titr.) approx. 95 %
 Chloride max. 0.1 %
 Sulfate max. 0.1 %
 Pb max. 0.01 %

Order-No.	Quantity
A2548,1000	1 kg
A2548,10006	6 x 1 kg
A2548,5000	5 kg
A2548,9010	10 kg
A2548,9025	25 kg

Sodium perchlorate monohydrate

CINaO₄ · H₂O
M = 140.46 g/mol
CAS-No.: 7791-07-3
HS-No.: 28299010
EC-No.: 231-511-9

Storage: RT
LGK: 5.1 A
Disposal: 22

Class / PG: 5.1/II
UN1502
WGK: 1
Danger
H271-H302
P210



Sodium perchlorate monohydrate Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
H₂O-insoluble matter max. 0.005 %
Heavy metals (as Pb) max. 0.0005 %

pH (5 %; H₂O) 6 - 8
Chloride max. 0.003 %
Sulfate max. 0.002 %
Fe max. 0.0005 %

K max. 0.005 %

Order-No.	Quantity
A3197,0250	250 g
A3197,0500	500 g
A3197,1000	1 kg

Sodium perchlorate monohydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
pH (5 %; H₂O; 20°C) 6 - 8
Chloride max. 0.003 %
Sulfate max. 0.002 %
Cd max. 0.0005 %

Cu max. 0.0005 %
Fe max. 0.0005 %
K max. 0.005 %
Pb max. 0.0005 %
Zn max. 0.0005 %

Order-No.	Quantity
A4534,0250	250 g
A4534,0500	500 g
A4534,1000	1 kg
A4534,10006	6 x 1 kg

Sodium perchlorate - Solution (5 M) Molecular biology grade

B

HS-No.: 28299010

Storage: RT
Disposal: 22

Class / PG: 5.1/II
UN3211
WGK: 1
Danger
H302-H271
P210



Specification:

DNases/RNases/Proteases not detectable
pH (20°C) 6.0 - 8.0

Order-No.	Quantity
A2858,0100	100 ml
A2858,0500	500 ml

Sodium periodate see Sodium metaperiodate p. A. Page 746

tri-Sodium phosphate dodecahydrate

Na₃PO₄ · 12H₂O, *tert.* Sodium
phosphate, *Trisodium phosphate*

Na₃O₄P · 12H₂O
M = 380.12 g/mol
CAS-No.: 10101-89-0
HS-No.: 28352930
EC-No.: 231-509-8

Storage: RT
LGK: 10 - 13
Disposal: 14

WGK: 1
Warning
H315-H319
P305+P351+P338-P302+P352



Melting point 75°C (dec.)
Solubility (20°C) 258 g/L (H₂O)

tri-Sodium phosphate dodecahydrate p. A.

C

Specification:

Assay (titr.) min. 98 %
Free alkaline (as NaOH) max. 2.0 %
pH (1 %; H₂O) approx. 12.0 (20°C)
Chloride max. 0.0005 %
Fluoride max. 0.0005 %

Sulfate max. 0.005 %
As max. 0.0001 %
Cu max. 0.005 %
Fe max. 0.001 %
K max. 0.005 %
Pb max. 0.001 %
Zn max. 0.0025 %

Order-No.	Quantity
A2407,0500	500 g
A2407,1000	1 kg
A2407,10006	6 x 1 kg
A2407,5000	5 kg

tri-Sodium phosphate dodecahydrate pure Food grade

C

Specification:

Assay (titr.) min. 97.5 %
Free alkaline (as NaOH) max. 2.5 %
H₂O-insoluble subst. max. 0.2 %
Heavy metals (as Pb) max. 0.001 %
Identity complies
Loss on ignition max. 55 %

Total N max. 0.005 %
pH (1 %; H₂O) 11.5 - 12.5
Chloride max. 0.01 %
Fluoride max. 0.001 %
Sulfate max. 0.01 %
As max. 0.00005 %
Cu max. 0.0025 %
Fe max. 0.001 %
Hg max. 0.0001 %
Pb max. 0.0005 %
Zn max. 0.0025 %

Order-No.	Quantity
A0543,1000	1 kg
A0543,10006	6 x 1 kg
A0543,5000	5 kg
A0543,9010	10 kg
A0543,9025	25 kg

sec.-Sodium phosphate see di-Sodium hydrogen phosphate dodecahydrate Page 736
sec.- Sodium phosphate see di-Sodium hydrogen phosphate dihydrate Page 735
tert.Sodium phosphate see tri-Sodium phosphate dodecahydrate Page 749
Sodium phosphate dibasic see di-Sodium hydrogen phosphate dodecahydrate Page 736
mono-Sodium phosphate dihydrate see Sodium dihydrogen phosphate dihydrate Page 730
mono-Sodium phosphate monohydrate see Sodium dihydrogen phosphate monohydrate Page 731
Sodium 1-propane sulfonate see 1-Propanesulfonic acid sodium salt IPC grade Page 664
Sodium 2-propanesulfonate see 2-Propanesulfonic acid sodium salt IPC grade Page 664
Sodium propionate see Propionic acid sodium salt pure Page 670

Sodium pyrophosphate decahydrate

tetra-Sodium diphosphate decahydrate	$\text{Na}_4\text{O}_7\text{P}_2 \cdot 10\text{H}_2\text{O}$	Storage: RT	WGK: 1
	$M = 446.06 \text{ g/mol}$	LGK: 10 - 13	
	CAS-No.: 13472-36-1	Disposal: 14	
	HS-No.: 28353900		
	EC-No.: 231-767-1		

Sodium pyrophosphate decahydrate *BioChemica*

B

Specification:					
Assay (titr.)	min. 99 %	Sulfate	max. 0.005 %	A (1 cm/0.1 M in H_2O)	
Heavy metals (as Pb)	max. 0.001 %			260 nm	max. 0.01
Insoluble matter	complies			280 nm	max. 0.01
pH (5 %; H_2O)	9.5 - 10.5 (20°C)				
Fluoride	max. 0.001 %				
				Order-No.	Quantity
				A2197,0100	100 g
				A2197,0250	250 g
				A2197,0500	500 g
Literature: (1) Smith, C.A. & Rayment, I. (1995) <i>Biochemistry</i> 34 , 8973-8981					
(2) Fenton, C. & El-Gewely, M.R. (1997) <i>BioTechniques</i> 23 , 248-250					
Comment: Pyrophosphate is serving as smallest nucleotide analogue of ATP or its products after hydrolyzation, respectively. Pyrophosphate is reducing the affinity between myosin and actin					
(1). It is possible to catch myosin at different stages of the contraction cycle between myosin and myctin.					
If ^{32}P marked probes are applied to band shifts as well as unpurified proteins, pyrophosphate at a concentration of 50 μM increases the sensitivity due to the inhibitory effect on Phosphatases (2).					
For use as phosphatase inhibitor, sodium pyrophosphate is included in the extraction or lysis buffers at a concentration of 10 to 30 mM sometimes up to 100 mM.					
			X-ray structure of the Magnesium(II)-Pyrophosphate complex of the truncated head of <i>Dictyostelium discoideum</i> myosin to 2.7 Å resolution.		
			Pyrophosphate in the binding reaction of "mobility shift" assays.		

Sodium pyrophosphate decahydrate p. A.

C

Specification:					
Assay (titr.)	min. 99 %	Sulfate	max. 0.005 %	Order-No.	Quantity
Heavy metals (as Pb)	max. 0.0005 %	ortho-Phosphate	max. 0.1 %	A4747,0500	500 g
Total N	max. 0.001 %	As	max. 0.0001 %	A4747,1000	1 kg
Fluoride	max. 0.001 %	Fe	max. 0.001 %	A4747,10006	6 x 1 kg

Sodium pyrosulfite see Sodium disulfite Page 732

Sodium pyruvate

Pyruvic acid sodium salt	$\text{C}_3\text{H}_3\text{NaO}_3$	Storage: RT	WGK: 1
	$M = 110.05 \text{ g/mol}$	LGK: 10 - 13	
	CAS-No.: 113-24-6	Disposal: 3	
	HS-No.: 29183000		
	EC-No.: 204-024-4		

Sodium pyruvate Cell culture grade

B

Specification:					
Pyrogen test	complies	Sulfate	max. 0.002 %	Order-No.	Quantity
Assay (titr.)	min. 99 %	As	max. 0.0001 %	A4859,0050	50 g
Loss on drying	max. 0.5 %	Pb	max. 0.001 %	A4859,0100	100 g
pH (10 %; H_2O)	5.5 - 6.5			A4859,0500	500 g
Chloride	max. 0.002 %			A4859,1000	1 kg

Sodium pyruvate *BioChemica*

B

Specification:					
Assay (titr.)	min. 99 %	pH (10 %; H_2O)	5.5 - 6.5	Order-No.	Quantity
Heavy metals (as Pb)	max. 0.001 %	Chloride	max. 0.002 %	A3912,0100	100 g
Insoluble matter	complies	Sulfate	max. 0.002 %	A3912,0500	500 g
Loss on drying	max. 0.5 %			A3912,1000	1 kg

Sodium pyruvate p. A.

C

Specification:					
Assay (titr.)	min. 99 %	Pb	max. 0.001 %	Order-No.	Quantity
Loss on drying	max. 0.5 %			A1530,0100	100 g
pH (10 %; H_2O)	5.5 - 6.5			A1530,0250	250 g
Chloride	max. 0.002 %			A1530,0500	500 g
Sulfate	max. 0.002 %			A1530,1000	1 kg
As	max. 0.0001 %			A1530,10006	6 x 1 kg

Sodium rhodanate see Sodium thiocyanate pure Page 755

Sodium rhodanide see Sodium thiocyanate pure Page 755

Sodium salicylate p. A.

C

Salicylic acid sodium salt

$C_7H_5NaO_3$

Storage: RT

WGK: 1

Melting point 200°C

$M = 160.11$ g/mol

LGK: 10 - 13

Warning

CAS-No.: 54-21-7

Disposal: 3

H302-H319

HS-No.: 29182100

P260-P305+P351+P338

EC-No.: 200-198-0



Specification:

Assay (titr.) min. 99 %
Appearance of solution complies (10 %, H_2O)
Heavy metals (as Pb) max. 0.002 %
Identity (IR) complies

Loss on drying max. 0.5 %
Chloride max. 0.02 %
Sulfate max. 0.05 %
Fe max. 0.001 %

Order-No.	Quantity
A4273,0250	250 g
A4273,0500	500 g
A4273,1000	1 kg
A4273,10006	6 x 1 kg

Sodium selenite anhydrous pure

C

Na_2SeO_3

Na_2O_3Se

Storage: RT

Class / PG: 6.1/I

Solubility (20°C) 460 g/L (H_2O)

$M = 172.94$ g/mol

protected from light

UN2630

Thermal dec.> 300°C

CAS-No.: 10102-18-8

LGK: 6.1 B

WGK: 2

HS-No.: 28429010

Disposal: 17

Danger
EUH031-H411-H300-H317-H331
P280-P302+P352-P301+P310-P273-
P307+P311



Specification:

Assay min. 99 %
pH (1 M; H_2O ; 25°C) ca. 11.0
Water (K.F.) max. 1 %
Chloride max. 0.01 %
Selenate max. 0.2 %
Fe max. 0.005 %

Order-No.	Quantity
A2776,0050	50 g
A2776,0100	100 g
A2776,0500	500 g
A2776,1000	1 kg
A2776,10006	6 x 1 kg

Sodium silicate - Solution pure

C

Natronwasserglas

CAS-No.: 1344-09-8

Storage: RT

WGK: 1

Density (d 20°C/4°C) .. 1.37

HS-No.: 28391900

LGK: 10 - 13

Specification:

Assay (Na_2O) 7.5 - 8.5 %
Assay (SiO_2) 25.5 - 28.5 %
Carbonate complies
Sulfide max. 0.001 %
Pb max. 0.005 %

Order-No.	Quantity
A3537,1000	1 L
A3537,10006	6 x 1 L
A3537,2500	2.5 L
A3537,25004	4 x 2.5 L
A3537,5000	5 L

di-Sodium succinate see Succinic acid disodium salt anhydrous *BioChemica* Page 775

Sodium sulfate anhydrous powdered

Na_2SO_4

Na_2O_4S

Storage: RT

WGK: nwg

Melting point 884°C

$M = 142.04$ g/mol

LGK: 10 - 13

hygroscopic

Solubility (20°C) 200 g/L (H_2O)

CAS-No.: 7757-82-6

Disposal: 14

HS-No.: 28331100

EC-No.: 231-820-9

Sodium sulfate anhydrous powdered Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
pH (5 %; H_2O) 5.0 - 8.0 (20°C)
Loss on drying max. 0.5 %
Chloride max. 0.001 %

Phosphate max. 0.002 %
Ca max. 0.005 %
Cu max. 0.005 %
Fe max. 0.0005 %
K max. 0.01 %

Mg max. 0.001 %
N max. 0.0005 %
Pb max. 0.001 %

Order-No.	Quantity
A3487,0250	250 g
A3487,0500	500 g
A3487,1000	1 kg

Sodium sulfate anhydrous powdered *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
pH (5 %; H_2O) 5.0 - 8.0 (20°C)
Loss on drying max. 0.5 %

Chloride max. 0.001 %
Phosphate max. 0.002 %

A (1 cm/0.5 M in H_2O)
260 nm max. 0.015
280 nm max. 0.015

Order-No.	Quantity
A3914,0500	500 g
A3914,1000	1 kg
A3914,5000	5 kg

Sodium sulfate anhydrous powdered p. A.

C

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O; 20°C) 5.0 - 8.0
 Loss on drying max. 0.5 %
 Chloride max. 0.001 %
 Phosphate max. 0.002 %
 Ca max. 0.005 %
 Cu max. 0.005 %

Fe max. 0.0005 %
 K max. 0.01 %
 Mg max. 0.001 %
 N max. 0.0005 %
 Pb max. 0.001 %

Order-No.**Quantity**

A1048,0500 500 g
A1048,1000 1 kg
A1048,10006 6 x 1 kg
A1048,5000 5 kg
A1048,9010 10 kg
A1048,9025 25 kg

Sodium sulfate anhydrous powdered pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying max. 0.5 %

Chloride max. 0.02 %
 As max. 0.0005 %
 Ca max. 0.045 %
 Fe max. 0.009 %
 Mg max. 0.02 %

Order-No.**Quantity**

A1374,1000 1 kg
A1374,10006 6 x 1 kg
A1374,5000 5 kg
A1374,9010 10 kg
A1374,9025 25 kg

Sodium sulfate decahydrate $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ $\text{Na}_2\text{O}_4\text{S} \cdot 10\text{H}_2\text{O}$

Storage: RT

WGK: nwg

Melting point 32.4°C

Solubility (20°C) 420 g/L (H₂O) $M = 322.19 \text{ g/mol}$

CAS-No.: 7727-73-3

HS-No.: 28331100

EC-No.: 231-820-9

LGK: 10 - 13

Disposal: 14

Sodium sulfate decahydrate BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 pH (5 %; H₂O) 5.0 - 8.0 (20°C)
 Chloride max. 0.0003 %

Phosphate max. 0.001 %

A (1 cm/1 M in H₂O)

260 nm max. 0.025

280 nm max. 0.021

Order-No.**Quantity**

A3915,0500 500 g
A3915,1000 1 kg
A3915,5000 5 kg

Sodium sulfate decahydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
 pH (5 %; H₂O; 20°C) 5.0 - 8.0
 Chloride max. 0.0003 %
 Phosphate max. 0.001 %
 Ca max. 0.002 %
 Fe max. 0.0005 %
 K max. 0.002 %

Mg max. 0.001 %

Pb max. 0.0005 %

Zn max. 0.002 %

Order-No.**Quantity**

A1170,0500 500 g
A1170,1000 1 kg
A1170,10006 6 x 1 kg
A1170,5000 5 kg
A1170,9010 10 kg
A1170,9025 25 kg

Sodium sulfate decahydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
 Acidic/alkaline react. subst. complies
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying 52.0 - 57.0 %

Chloride max. 0.02 %

Ca max. 0.02 %

Fe max. 0.004 %

Mg max. 0.01 %

Order-No.**Quantity**

A1375,1000 1 kg
A1375,10006 6 x 1 kg
A1375,5000 5 kg
A1375,9010 10 kg
A1375,9025 25 kg

Sodium sulfite anhydrous

Melting point > 500°C (dec.)

 $\text{Na}_2\text{O}_3\text{S}$ $M = 126.04 \text{ g/mol}$

CAS-No.: 7757-83-7

HS-No.: 28321000

EC-No.: 231-821-4

Storage: RT

LGK: 10 - 13

Disposal: 28

WGK: 1

Sodium sulfite anhydrous p. A.

C

 Na_2SO_3 **Specification:**

Assay (titr.) min. 98 %
 Heavy metals (as Pb) max. 10 ppm
 Chloride max. 100 ppm
 As max. 1 ppm
 Fe max. 10 ppm

Order-No.**Quantity**

A1886,0250 250 g
A1886,0500 500 g
A1886,1000 1 kg
A1886,10006 6 x 1 kg

Sodium sulfite anhydrous pure Ph. Eur.

C

Specification:		Order-No.	Quantity
Assay (titr.)	95.0 - 100.0 %	A5115,0500	500 g
Appearance	white powder	A5115,1000	1 kg
Appearance of solution	complies	A5115,10006	6 x 1 kg
Heavy metals (as Pb)	max. 0.001 %	A5115,5000	5 kg
Identity	complies		
Thiosulfate	max. 0.1 %		
Fe	max. 0.001 %		
Se	max. 0.001 %		
Zn	max. 0.0025 %		

Sodium sulfite - Solution

aqueous solution	HS-No.: 28321000	Storage: RT Disposal: 28	WGK: 1

Sodium sulfite - Solution 17 % pure

C

Composition:		Specification:	Order-No.	Quantity
Sodium sulfite	170 g/L	Heavy metals (as Pb) .. max. 0.001 %	A2008,1000	1 L
		Chloride .. max. 0.05 %	A2008,5000	5 L
		Fe .. max. 0.001 %		

Sodium sulfite - Solution 12.5 % p. A.

C

Composition:		Specification:	Order-No.	Quantity
Sodium sulfite	125 g/L (approx. 1 N)	Heavy metals (as Pb) .. max. 0.001 %	A2927,1000	1 L
		Chloride .. max. 0.01 %	A2927,5000	5 L
		As .. max. 0.0001 %		
		Fe .. max. 0.001 %		

Sodium sulfocyanate see Sodium thiocyanate pure Page 755

di-Sodium tartrate dihydrate

Tartaric acid disodium salt dihydrate	C ₄ H ₄ Na ₂ O ₆ · 2H ₂ O	Storage: RT	WGK: 1
	M = 230.08 g/mol	LGK: 10 - 13	
Melting point	253°C (dec.)	Disposal: 3	
Solubility (20°C)	290 g/L (H ₂ O)		
	EC-No.: 29181300		
	EC-No.: 212-773-3		

di-Sodium tartrate dihydrate p. A.

C

Specification:		Order-No.	Quantity
Assay (titr.)	min. 99.5 %	A2662,0250	250 g
pH (5 %; H ₂ O)	7.0 - 9.0	A2662,0500	500 g
Chloride	max. 0.0005 %	A2662,1000	1 kg
Phosphate	max. 0.0005 %	A2662,10006	6 x 1 kg
Sulfate	max. 0.005 %	A2662,5000	5 kg
Fe	max. 0.0005 %		
Pb	max. 0.0005 %		

di-Sodium tartrate dihydrate pure Food grade

C

Specification:		Order-No.	Quantity
Assay (titr.)	min. 99 %	A0451,0500	500 g
Identity	complies	A0451,1000	1 kg
Loss on drying	max. 17.0 %	A0451,10006	6 x 1 kg
Chloride	max. 0.005 %	A0451,5000	5 kg
Oxalate	max. 0.05 %	A0451,9010	10 kg
As	max. 0.0002 %	A0451,9025	25 kg
Cu	max. 0.001 %		
Fe	max. 0.001 %		
Pb	max. 0.001 %		
Zn	max. 0.001 %		

3,3'-Dithio-bis-(2-aminopropionic acid) see L-Cystine Page 255

di-Sodium tetraborate anhydrous

Sodium borate

 $B_4Na_2O_7$ $M = 201.22$ g/mol

CAS-No.: 1330-43-4

HS-No.: 28401100

EC-No.: 215-540-4

Storage: RT

LGK: 6.1 B

Disposal: 28

WGK: 1

Danger

H360FD

P308+P313-P201



Melting point 741°C

Solubility (20°C) 25 g/L (H_2O)**di-Sodium tetraborate anhydrous p. A.**

C

Specification:

Assay (titr.) min. 98 %
 pH (1 %; H_2O) 9.0 - 10.0 (20°C)
 Chloride max. 0.001 %
 Phosphate max. 0.002 %
 Sulfate max. 0.003 %

Ca max. 0.002 %
 Fe max. 0.001 %
 K max. 0.01 %
 Mg max. 0.001 %
 Pb max. 0.001 %

Order-No.

A2416,0100

A2416,0500

A2416,1000

A2416,10006

Quantity

100 g

500 g

1 kg

6 x 1 kg

di-Sodium tetraborate anhydrous pure

C

Specification:

Assay (titr.) 99.0 - 103.0 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.0025 %
 Identity complies
 pH (2 %; H_2O ; 20°C) 9.0 - 10.0
 Ammonium max. 0.001 %
 Sulfate max. 0.005 %

As max. 0.0005 %
 Ca max. 0.01 %

Order-No.

A0544,0100

A0544,0500

A0544,1000

A0544,10006

A0544,5000

A0544,9010

Quantity

100 g

500 g

1 kg

6 x 1 kg

5 kg

10 kg

di-Sodium tetraborate decahydrate

Melting point 741°C

Solubility (20°C) 51.4 g/L (H_2O) $B_4Na_2O_7 \cdot 10H_2O$ $M = 381.37$ g/mol

CAS-No.: 1303-96-4

HS-No.: 28401990

EC-No.: 215-540-4

Storage: RT

LGK: 6.1 B

Disposal: 28

WGK: 1

Danger

H360FD

P201-P308+P313

**di-Sodium tetraborate decahydrate p. A.**

C

Specification:

Assay (titr.) min. 99.5 %
 pH (1 %; H_2O ; 20°C) 9.1 - 9.3
 Chloride max. 0.001 %
 Phosphate max. 0.001 %
 Sulfate max. 0.005 %

Ca max. 0.005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %
 Pb max. 0.0005 %

Order-No.

A3255,0100

A3255,0500

A3255,1000

A3255,10006

Quantity

100 g

500 g

1 kg

6 x 1 kg

di-Sodium tetraborate decahydrate Technical grade

C

Borax

Specification:

Assay (titr.) min. 98 %
 Heavy metals (as Pb) max. 0.01 %
 Ammonium max. 0.05 %

Order-No.

A4029,1000

A4029,10006

A4029,5000

A4029,9010

A4029,9025

Quantity

1 kg

6 x 1 kg

5 kg

10 kg

25 kg

Sodium tetraborate - Solutions

Chemical conservation in foodstuffs

HS-No.: 38220000

Storage: RT

WGK: 1

Danger

H360

P308+P313-P281-P201

**Sodium tetraborate - Solution (50 g/L)**

C

Composition:

di-Sodium tetraborate · 10 H_2O
 50 g/L

Specification:pH (H_2O ; 20°C) 9.1 - 9.3**Order-No.**

A0397,5000

A0397,9010

Quantity

5 L

10 L

Sodium tetraborate - Solution (5 g/L)

C

Composition:

di-Sodium tetraborate · 10 H_2O
 5 g/L

Specification:pH (H_2O ; 20°C) 9.1 - 9.3**Order-No.**

A0405,5000

A0405,9010

Quantity

5 L

10 L

Sodium tetrahydroborate see Sodium borohydride Page 723

Sodium tetraphenyl borate p. A.

C

$C_{24}H_{20}BNa$
 $M = 342.23$ g/mol
 CAS-No.: 143-66-8
 HS-No.: 29310099
 EC-No.: 205-605-5

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Class / PG: 6.1/II
 UN2811
 WGK: 2
 Warning
 H302
 P260-P309+P311



Specification:

Assay (grav.) min. 99.5 %
 Identity (IR) complies
 Loss on drying max. 0.5 %

Order-No.	Quantity
A5020,0010	10 g
A5020,0025	25 g
A5020,0100	100 g

Sodium tetraphenylborate - Standard volumetric solution (0.01 M)

C

HS-No.: 38220000

Storage: RT

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4750,0500	500 ml
A4750,1000	1 L
A4750,10006	6 x 1 L

Sodium thiocyanate pure

C

Sodium rhodanate, Sodium
 isothiocyanate, Sodium rhodanide,
 Sodium sulfocyanate

CNNaS
 $M = 81.07$ g/mol
 CAS-No.: 540-72-7
 HS-No.: 28429080
 EC-No.: 208-754-4

Storage: RT
 LGK: 10 - 13

WGK: 1
 Warning
 EUH032-H332-H410-H302-H312
 P302+P352-P273



Melting point 310°C
 Solubility (20°C) 1250 g/L (H₂O)

Specification:

Assay (titr.) min. 98.5 %
 Heavy metals (as Pb) max. 0.002 %
 Identity complies
 Loss on drying max. 5 %

Chloride max. 0.1 %
 Sulfate max. 0.025 %
 As max. 0.0005 %

Order-No.	Quantity
A5295,0250	250 g
A5295,1000	1 kg
A5295,10006	6 x 1 kg

Sodium thioglycolate

$C_2H_3NaO_2S$
 $M = 114.10$ g/mol
 CAS-No.: 367-51-1
 HS-No.: 29309099
 EC-No.: 206-696-4

Storage: 2-8°C
 LGK: 10-13

Class / PG: 6.1/III
 UN2811
 WGK: 1
 Danger
 H301-H317
 P302+P352-P262-P280



Sodium thioglycolate Microbiology grade

B

Specification:

Assay (titr.) min. 98.5 %
 Heavy metals (as Pb) max. 0.005 %
 Solubility (5 %; H₂O) clear, colorless

pH (1 M; H₂O) 6.0 - 8.0

Order-No.	Quantity
A0985,0100N	100 g
A0985,0500N	500 g

Sodium thioglycolate pure

C

Specification:

Assay (titr.) min. 96 %
 Solubility (5 %; H₂O) clear
 pH (1 M; H₂O) 5.0 - 8.0

Order-No.	Quantity
A2832,0100	100 g
A2832,0250	250 g
A2832,0500	500 g

Sodium thiosulfate anhydrous

Fixing salt, Antichlor

$Na_2O_3S_2$
 $M = 158.11$ g/mol
 CAS-No.: 7772-98-7
 HS-No.: 28323000
 EC-No.: 231-867-5

Storage: RT
 LGK: 10 - 13

WGK: 1

Decomposition temp. 100°C
 Solubility (20°C) 209 g/L

Sodium thiosulfate anhydrous p. A.

C

Specification:

Assay (titr., dried substance) min. 98 %
 Loss on drying (105°C; 2 h) max. 2 %
 pH (5 %; H₂O) 6.0 - 8.5
 Chloride max. 0.01 %
 Sulfate max. 0.1 %

Sulfide max. 0.001 %
 Ca max. 0.002 %
 Cu max. 0.005 %
 Fe max. 0.001 %
 K max. 0.001 %

Mg max. 0.001 %
 Pb max. 0.0005 %

Order-No.	Quantity
A6830,0250	250 g
A6830,0500	500 g
A6830,1000	1 kg
A6830,10006	6 x 1 kg

Sodium thiosulfate anhydrous pure

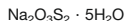
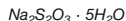
C

Specification:

Assay (titr.)	min. 98 %
pH (5 %; H ₂ O; 20°C)	6.5 - 9.5
Sulfide	max. 0.005 %
Fe	max. 0.005 %
Pb	max. 0.005 %

Order-No.	Quantity
A2833,0500	500 g
A2833,1000	1 kg
A2833,10006	6 x 1 kg
A2833,5000	5 kg

Sodium thiosulfate pentahydrate



Storage: RT

WGK: 1

Density (d 20°C/4°C) .. approx. 1.73

$M = 248.18 \text{ g/mol}$

LGK: 10 - 13

Melting point 48°C (dec.)

CAS-No.: 10102-17-7

Disposal: 28

Solubility (20°C) 680 g/L

HS-No.: 28323000

EC-No.: 231-867-5

Sodium thiosulfate pentahydrate for silver staining

B

Specification:

Assay (titr.)	min. 99.5 %
Heavy metals (as Pb)	max. 0.001 %
Insoluble matter	complies

pH (5 %; H ₂ O)	6.0 - 7.5 (20°C)
Chloride	max. 0.01 %
Sulfate	max. 0.1 %

Sulfide max. 0.0001 %

Order-No.	Quantity
A3822,0500	500 g
A3822,1000	1 kg

Literature: (1) Blum, H. et al. (1987) *Electrophoresis* **8**, 93-99
(2) Peng, H. et al. (1995) *BioTechniques* **19**, 410-414

Improved silver staining of plant proteins, RNA and DNA in polyacrylamide gels.
SSCP-analysis with polyacrylamide-agarose-composite gels and background-free silver staining.

Comment: The reduction of the background staining of silver staining with sodium thiosulfate is based on the soluble complexes formed by sodium thiosulfate with unspecific bound silver. This prevents unspecific precipitates on acrylamide gels and acrylamide-agarose-composite gels. A further improvement is achieved by the addition of formaldehyde to the gel fixation solution (1, 2). The pretreatment of the gels after fixation is performed in 0.02 % sodium thiosulfate. During the development after the staining the sodium thiosulfate concentration is reduced to 0.0005 %. Solutions of sodium thiosulfate have to be prepared fresh.

Sodium thiosulfate pentahydrate p. A.

C

Specification:

Assay (titr.)	min. 99.5 %
Chloride	max. 0.01 %
Sulfate	max. 0.1 %
Sulfide	max. 0.0001 %
Ca	max. 0.002 %
Cu	max. 0.005 %
Fe	max. 0.0005 %

K	max. 0.001 %
Mg	max. 0.001 %
Pb	max. 0.0005 %

Order-No.	Quantity
A1883,0500	500 g
A1883,1000	1 kg
A1883,10006	6 x 1 kg
A1883,5000	5 kg
A1883,9010	10 kg
A1883,9025	25 kg

Sodium thiosulfate pentahydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.0 - 100.5 %
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.001 %
Identity	complies
Loss on drying	32.0 - 37.0 %
pH (10 %; H ₂ O; 20°C)	6.0 - 8.4

Sulfate, Sulfite (als SO ₄)	max. 0.2 %
Sulfide	complies
Ca	complies

Order-No.	Quantity
A1670,1000	1 kg
A1670,10006	6 x 1 kg
A1670,5000	5 kg
A1670,9010	10 kg
A1670,9025	25 kg

Sodium thiosulfate - Solutions

HS-No.: 28323000
EC-No.: 231-867-5

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: nwg

Sodium thiosulfate - Solution 20 % p. A.

C

Composition:

Sodium thiosulfate · 5H₂O ... 200 g/L

Specification:

pH (H₂O) 5.5 - 8.5 (20°C)

Order-No.	Quantity
A3354,1000	1 L
A3354,5000	5 L

Sodium thiosulfate - Solution 10 % p. A.

C

Composition:

Sodium thiosulfate · 5H₂O ... 100 g/L

Specification:

pH (H₂O) 5.5 - 8.5 (20°C)

Order-No.	Quantity
A5117,1000	1 L
A5117,5000	5 L

Sodium thiosulfate - Standard volumetric solutions

HS-No.: 38220000
EC-No.: 231-867-5

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: nwg

Sodium thiosulfate - Standard volumetric Solution (1 M)

C

1 mol/L (1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3525,1000	1 L
A3525,10006	6 x 1 L
A3525,5000CT	5 L
A3525,5000PE	5 L

Sodium thiosulfate - Standard volumetric solution (0.5 M)

C

0.5 mol/L (0.5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4202,1000	1 L
A4202,10006	6 x 1 L
A4202,5000CT	5 L
A4202,5000PE	5 L

Sodium thiosulfate - Standard volumetric solution (0.2 M)

C

0.2 mol/L (0.2 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A4208,1000	1 L
A4208,10006	6 x 1 L
A4208,5000CT	5 L
A4208,5000PE	5 L

Sodium thiosulfate - Standard volumetric Solution (0.1 M)

C

0.1 mol/L (0.1 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2408,1000	1 L
A2408,10006	6 x 1 L
A2408,5000CT	5 L
A2408,5000PE	5 L
A2408,9010CT	10 L
A2408,9010PE	10 L

Sodium thiosulfate - Standard volumetric solution (0.05 M)

C

0.05 mol/L (0.05 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3370,1000	1 L
A3370,10006	6 x 1 L
A3370,5000CT	5 L
A3370,5000PE	5 L

Sodium thiosulfate - Standard volumetric Solution (0.01 M)

C

0.01 mol/L (0.01 N Solution)

Specification:

Factor limits 0.995 - 1.005

Order-No.	Quantity
A0540,1000	1 L
A0540,10006	6 x 1 L
A0540,5000CT	5 L
A0540,5000PE	5 L

α-Solanine HPLC grade

B

Tomatin, Solatunin
from *Solanum tuberosum*

C₄₅H₇₃NO₁₅
M = 868.04 g/mol
CAS-No.: 20562-02-1
HS-No.: 29399900

Storage: 2-8°C

Warning
H319-H302-H335
P305+P351+P338-P264-P301+P312



Specification:

Assay min. 98 %

Order-No.	Quantity
A7951,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Solatunin see α-Solanine HPLC grade Page 757

Solution for the removal of DNA and RNA contaminations see DNA-ExitusPlus™ Page 302

recombinant Mouse Sonic Hedgehog see rM SHH Page 711
Sophrin see Rutin HPLC grade Page 694

Sorbic acid pure Ph. Eur., NF

C

2,4-Hexadienoic acid

Boiling point 228°C (dec.)
Melting range 132 - 135°C
Solubility (20°C) 1.6 g/L (H₂O)

C₆H₈O₂
M = 112.13 g/mol
CAS-No.: 110-44-1
HS-No.: 29161995
EC-No.: 203-768-7

Storage: RT
LGK: 10 - 13

WGK: nwg
Warning
H319-H315-H335
P302+P352-P305+P351+P338



Specification:

Assay (titr.) 99.0 - 101.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity (IR) complies
Organic vol. impurities complies
Sulfated ash max. 0.2 %
Aldehydes max. 0.15 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A3529,0100	100 g
A3529,0250	250 g
A3529,0500	500 g
A3529,1000	1 kg
A3529,10006	6 x 1 kg
A3529,5000	5 kg
A3529,9010	10 kg

Sorbic acid potassium salt see Potassium sorbate powdered, pure Ph. Eur. Page 660

D(-)-Sorbitol

D-Glucitol

Melting point 94 - 96°C
Solubility (25°C) 2350 g/L (H₂O)

C₆H₁₄O₆
M = 182.18 g/mol
CAS-No.: 50-70-4
HS-No.: 29054491
EC-No.: 200-061-5

Storage: RT
LGK: 10 - 13

D(-)-Sorbitol Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Assay (titr.) min. 99 %
α20°C/D, 10 %, borate complex
..... 4.0° - 7.0°
Appearance of solution complies

Heavy metals (as Pb) max. 0.001 %
Organic vol. impurities complies
Sulfated ash max. 0.1 %
Water (K.F.) max. 1.5 %
Chloride max. 0.005 %

Sulfate max. 0.01 %
As max. 0.0003 %
Ni max. 0.0001 %
Pb max. 0.00005 %

Order-No.	Quantity
A4992,0250	250 g
A4992,0500	500 g
A4992,1000	1 kg

D(-)-Sorbitol pure Ph. Eur., NF

C

Specification:

Assay 97.0 - 100.5 %
Appearance of solution complies
Conductivity (20 %; H₂O dest.)
..... max. 20 µS/cm
Identity complies
Microbiological test complies
Red. sugars complies

Related subst. complies
Residual solvents complies
Sulfated ash max. 0.1 %
pH (10 %; H₂O) 3.5 - 7.0
Water (K.F.) max. 1.5 %
Ni max. 0.0001 %
Pb max. 0.00005 %

Order-No.	Quantity
A2222,0500	500 g
A2222,1000	1 kg
A2222,10006	6 x 1 kg
A2222,5000	5 kg
A2222,9010	10 kg
A2222,9025	25 kg

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Page 18.36, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(2) Gegenheimer, P. (1990) *Methods Enzymol.* **182**, 174-193

Preparation of extracts from plants.

Comment: Sorbitol is used in high concentration for cell disruption. The stabilizing buffer for enzymatic lysis of yeast contains 1 M Sorbitol (1). Concentrations of 300 mM and 400 mM, respectively, are used for the extraction of chloroplasts and thylacoids, respectively (2).

D(-)-Sorbitol - Solution 70 % Ph. Eur., BP, USP, E420 (non-crystallizing)

C

HS-No.: 38246019

Storage: RT

WGK: nwg

Specification:

Dry matter assay 69.0 - 71.5 %
Sorbitol (calc. on dry matter) 72 - 92 % (HPLC)
Appearance of solution complies
Conductivity max. 10 µS/cm
Heavy metals (as Pb) max. 0.0005 %
Identity complies
Red. sugars complies

Red. sugars after hydrolysis complies
Refractive index (25°C) 1.457 - 1.465
Relative density min. 1.290
Sulfated ash max. 0.05 %
Total plate count max. 100 / g
pH (14 %; H₂O) 5.0 - 7.5

Mannitol max. 1 %
Water (K.F.) 28.5 - 31.0 %
Chloride max. 0.002 %
Sulfate max. 0.005 %
As max. 0.0001 %
Ni max. 0.0001 %
Pb max. 0.00005 %

Order-No.	Quantity
A6556,0500	500 ml
A6556,1000	1 L
A6556,5000	5 L

SPDP

B

3-(2-Pyridyldithio)-propionic acid N-succinimide ester, N-Succinimidyl-3-(2-pyridyldithio)propionate

$C_{12}H_{12}N_2O_4S_2$
M = 312.36 g/mol
CAS-No.: 68181-17-9
HS-No.: 29333999
EC-No.: 269-034-3

Storage: 2-8°C

Warning
H335-H315-H319
P305+P351+P338



Melting point 84 - 86°C
Solubility (50 mg/ml acetone)
..... clear

Specification:

Assay min. 95 %

Order-No.	Quantity
A7742,0025	25 mg
A7742,0100	100 mg

Comment: SPDP is a thiol-cleavable, membrane-permeable, water-insoluble heterobifunctional crosslinker. It reacts toward sulfhydryl and primary amine groups. The NHS ester reacts with primary amines at pH 7 - 9. The disulfide bond in the spacer arm is cleavable using TCEP (Tris(2-carboxyethyl)phosphine hydrochloride) and DTT (1,4-Dithiothreitol). The pyridyl disulfide group reacts with thiols at pH 6.5 - 7.5 to form a reversible disulfide bond.

Spectinomycin dihydrochloride pentahydrate BioChemica

B

Actionospectacin

$C_{14}H_{24}N_2O_7 \cdot 2HCl \cdot 5H_2O$
M = 495.30 g/mol
CAS-No.: 21736-83-4
HS-No.: 29419000
EC-No.: 244-554-3

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr.) min. 98 %
Solubility (5 %; H_2O) clear, slightly yellow

Order-No.	Quantity
A3834,0001	1 g
A3834,0005	5 g
A3834,0010	10 g

Spermidine BioChemica

B

N-(3-Aminopropyl)-1,4-diaminobutane

$C_7H_{19}N_3$
M = 145.25 g/mol
CAS-No.: 124-20-9
HS-No.: 29212900
EC-No.: 204-689-0

Storage: 2-8°C
LGK: 8 B

Class / PG: 8/II
UN3259
WGK: 1
Danger
H314
P280-P305+P351+P338-P313



Specification:

Assay (titr.) min. 99 %
pH (1 M; H_2O ; 20°C) 11.0 - 13.0
Spermine max. 0.2 %
Loss on drying max. 1 %

Order-No.	Quantity
A0674,0001	1 g
A0674,0005	5 g
A0674,0025	25 g

Literature: (1) Blumenthal, A.B. *et al.* (1979) *J. Cell Biol.* **81**, 255-259
(2) Hoopes, B. & McClure, W. (1981) *Nucleic Acids Res.* **9**, 5493-5504
(3) Tabor, C.W. & Tabor, H. (1984) *Ann. Rev. Biochem.* **53**, 749-790
(4) Cram, L.S. *et al.* (1990) *Methods Cell Biol.* **33**, 377-382

Rapid isolation of Metaphase chromosomes containing high molecular weight DNA. Studies on the selectivity of DNA precipitation by spermine.
Review article: Polyamines.
Polyamine buffer for bivariate human flow cytogenetic analysis and sorting.

Comment: Spermidine belongs to the polyamines. They are used for the isolation of chromosomes as they are stabilizing the DNA, acting as the positive counter ion. Spermidine is probably responsible for the high density condensation in the phages head.

Spermidine trihydrochloride BioChemica

B

N-(3-Aminopropyl)-1,4-diaminobutane trihydrochloride

$C_7H_{19}N_3 \cdot 3HCl$
M = 254.63 g/mol
CAS-No.: 334-50-9
HS-No.: 29212900
EC-No.: 206-379-0

Storage: 2-8°C
LGK: 10 - 13

WGK: 1
Warning
H319-H315
P305+P351+P338



Specification:

Assay (titr.) min. 99 %
pH (1 M; H_2O ; 20°C) 3.0 - 4.0
Spermine max. 0.2 %
Loss on drying max. 1 %

Order-No.	Quantity
A0673,0001	1 g
A0673,0005	5 g
A0673,0025	25 g

Spermine BioChemica

B

N,N'-Bis-(3-aminopropyl)-1,4-diaminobutane

$C_{10}H_{26}N_4$
 $M = 202.34$ g/mol
CAS-No.: 71-44-3
HS-No.: 29212900
EC-No.: 200-754-2

Storage: 2-8°C
LGK: 8 B

Class / PG: 8/II
UN3259
WGK: 1
Danger
H314
P313-P280-P305+P351+P338



Melting point 28°C

Specification:

Assay (titr.) min. 98 %
pH (1 M; H₂O; 20°C) 11.0 - 13.0
Spermidine max. 0.5 %
Loss on drying max. 1.0 %

Carbonate max. 0.5 %

Order-No.	Quantity
A0672,0001	1 g
A0672,0005	5 g
A0672,0025	25 g

Literature: (1) Blumenthal, A.B. *et al.* (1979) *J. Cell Biol.* **81**, 255-259
(2) Hoopes, B. & McClure, W. (1981) *Nucleic Acids Res.* **9**, 5493-5504
(3) Tabor, C.W. & Tabor, H. (1984) *Ann. Rev. Biochem.* **53**, 749-790
(4) Cram, L.S. *et al.* (1990) *Methods Cell Biol.* **33**, 377-382

Rapid isolation of Metaphase chromosomes containing high molecular weight DNA. Studies on the selectivity of DNA precipitation by spermine.
Review article: Polyamines.
Polyamine buffer for bivariate human flow cytogenetic analysis and sorting.

Comment: Spermine belongs to the Polyamines. When precipitating selectively DNA with the help of Spermine most of the proteins and triphosphates will not coprecipitate. The precipitation with spermidine is applied after restriction digests, the separation of DNA fragments and triphosphates and the purification of DNA fragments after PAGE. Stock solutions are prepared with a concentration of 100mM (pH 6.8, ref. 2) and stored at +4°C (short-term) or at -20°C (long-term). The working concentration is approx 0.1 mM, if the DNA is dissolved in TE.

Spermine tetrahydrochloride BioChemica

B

N,N'-Bis-(3-aminopropyl)-1,4-diaminobutane tetrahydrochloride

$C_{10}H_{26}N_4 \cdot 4HCl$
 $M = 348.18$ g/mol
CAS-No.: 306-67-2
HS-No.: 29212900
EC-No.: 206-379-0

Storage: 2-8°C

Warning
H319-H315
P305+P351+P338



Specification:

Assay (titr.) min. 99 %
Identity complies
Solubility (10 %; H₂O) clear
pH (1 %; H₂O) 4.5 - 7.0

Order-No.	Quantity
A7080,0001	1 g
A7080,0005	5 g
A7080,0010	10 g

Spiraeoside HPLC grade

B

Quercetin-4'-glucoside
from *Filipendula ulmaria*

$C_{21}H_{20}O_{12}$
 $M = 464.38$ g/mol
CAS-No.: 20229-56-5
HS-No.: 29329900

Storage: 2-8°C

Specification:

Assay min. 98 %

Order-No.	Quantity
A7824,0020	20 mg
A7824,0050	50 mg

Comment: Documents included: HPLC-DAD with UV spectrum

recombinant Mouse sRANKL see rM RANKL Page 683
rHu sRANKL see rHu RANKL Page 682
SS-Agar, Modified see Salmonella-Shigella (SS) Agar, Modified Page 701



Something missing ?

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SSC buffer (20X) Molecular biology grade

B

20X concentrated aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

tri-Sodium citrate (A4522) . . . 88.23 g/L (0.3 M)
Sodium chloride (A2942) . . . 175.32 g/L (3 M)

Specification:

DNases/RNases/Proteases
..... not detectable

pH (20°C; adjusted with HCl)
..... 7.0 ± 0.2

Order-No.
A1396,0500
A1396,1000

Quantity
500 ml
1 L

Literature: (1) Southern, E.M. (1975) *J. Mol. Biol.* **98**, 503-517

(2) Chomczynski, P. (1992) *Anal. Biochem.* **201**, 134-139

(3) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition, Page A1.14, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (2001) *Current Protocols in Molecular Biology*: Page A.2.5 (Suppl. 40) Greene Publishing & Wiley-Interscience, New York.

(5) Nagamine, Y. *et al.* (1980) *Nucleic Acids Res.* **8**, 2453-2460

Detection of specific sequences of DNA-fragments after gel electrophoresis.
Alkaline capillary transfer for blotting of DNA and RNA.

Selective blotting of restriction DNA fragments on nitrocellulose at low salt concentrations.

Comment: There are two major applications of SSC. This buffer is used for the denaturation of DNA for the screening of DNA libraries (e.g. genomic, cDNA or YAC library). The probe for screening the library will only bind to the immobilized DNA of the library, if this DNA is in a single stranded state. The commonly used working concentration is 2X SSC (Ref. 4, e.g. p. 6.1.3).

The second major application is the use of SSC as transfer buffer for the blotting of DNA after agarose or polyacrylamide gel electrophoresis onto nitrocellulose or nylon membranes (Southern-Blot). In case of using nitrocellulose membranes, a high SSC concentration (20X; high ionic strength) should be employed, since smaller DNA fragments might be lost at concentrations of 10X SSC or below. A good result for nylon membranes can be expected using 20X and 10X SSC. Depending on the brand of the nylon membrane other conditions may result in better hybridization rates (e. g. positive charged membranes with an alkaline transfer buffer).

If used as a transfer buffer, it is not necessary to filter SSC, but when used as in hybridization solutions, it is essential to filter SSC before use. SSC buffer from AppliChem will be filtered principally. SSC buffer may be replaced with the same concentration of SSPE buffer (A1397) in all experiments. SSPE has a greater buffering capacity. The buffering power of SSC can be increased by adding 0.3 % (w/v) sodium pyrophosphate.

In references 3 and 4 several techniques are described in detail:

Ref. 3:

Southern blotting (pp. 6.41-6.58)

Northern hybridization (pp. 7.36-7.44)

Dot and slot hybridization (pp. 7.48-7.50)

Ref. 4:

Southern blotting (pp. 2.9.1-2.9.15 Supplement 21)

Dot and slot blotting (pp. 2.9.15-2.9.20 Supplement 21)

Hybridization analysis of DNA blots (pp. 2.10.1-2.10.16 Supplement 21)

Screening of recombinant DNA libraries (Chapter 6; Hybridization with radioactive probes pp. 6.3.1-6.3.6; Using synthetic oligonucleotides as probes 6.4.1-6.4.3 Supplement 13)

SSC buffer (20X) - Powder Molecular biology grade

B

Powder mixture for a 20X concentrated aqueous solution

HS-No.: 38210000

Storage: RT
LGK: 10 - 13

Composition:

tri-Sodium citrate (A4522) . . . 88.23 g/L (0.3 M)
Sodium chloride (A2942) . . . 175.32 g/L (3 M)

Specification:

DNases/RNases/Proteases
..... not detectable

Order-No.
A4506,1000
A4506,5000

Quantity
1 L
5 L

Comment: The pH value of the dissolved SSC buffer powder is approx. 8.2 ± 0.2. Adjust the pH value to 7.0 ± 0.2 with HCl.

SSC buffer (5X) with 1 % SDS Molecular biology grade

B

5X concentrated aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

tri-Sodium citrate (A4522) . . . 22.06 g/L (0.075 M)
SDS (A2263) 10.00 g/L (1 %)
Sodium chloride (A2942) . . . 43.83 g/L (0.75 M)

Specification:

DNases/RNases/Proteases
..... not detectable

pH (20°C; adjusted with HCl)
..... 7.0 ± 0.2

Order-No.
A4660,0500
A4660,1000

Quantity
500 ml
1 L

SSPE buffer (20X) Molecular biology grade

B

20X concentrated aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

EDTA · Na₂ · 2H₂O (A2937) . . 7.44 g/L (0.02 M)
NaH₂PO₄ · H₂O (A4229) . . . 27.60 g/L (0.2 M)
Sodium chloride (A2942) . . . 175.32 g/L (3.0 M)

Specification:

DNases/RNases/Proteases
..... not detectable

pH (20°C; adjusted with NaOH)
..... 7.4 ± 0.2

Order-No.
A1397,0500
A1397,1000

Quantity
500 ml
1 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*: Greene Publishing & Wiley-Interscience, New York.

Stabilizer for coated surfaces in immunoassays see Immunoassay Buffer Page 446

Staining reagent for juice

B

Campari® HS-No.: 22087010 Storage: RT

Specification:

Assay Alcohol (v/v) approx. 25 % Loss on drying max. 75 %
 Appearance of solution clear, cochineal red
 Serving temperature frequently cooled

Order-No. A7858,1000 Quantity 1 L

® Campari is a registered trademark of Davide Campari-Milano S.p.A.

Literature: (1) <http://en.wikipedia.org/wiki/Campari> (as at January 28th 2008). Wikipedia® is a registered trademark of Wikimedia Foundation Inc.

Comment: Campari is an alcoholic aperitif (alcohol 20.5 %; 41 proof) obtained from the infusion of sixty ingredients, combined and macerated in a blend of distilled water and alcohol for a couple of weeks. Campari is a type of bitters. The history of Campari began in Novara, Italy in 1860, with the invention of the original recipe by Gaspare Campari that is still in use today. The recipe incorporates over sixty ingredients and is kept confidential to this day. However, among the ingredients are quinine and other bitter herbs, rhubarb, pomegranate, spices, ginseng, bergamot oil, orange peel. It is known that the colour comes from natural Carmine Cochineal E120. One of the main ingredients is bark from Cascarilla trees that grow in the Bahamas. Campari quickens the appetite. It may be used as ingredient of longdrinks or cocktails. The classic drinks are Campari-Soda, Campari-Orange and Campari-Tonic, as well as the cocktails Americano, Negroni or "Malaria Killer".

Stains all

B

4,5,4',5'-Dibenzo-3,3'-diethyl-9-methylthio-carbocyanine bromide C₃₀H₂₇BrN₂S₂ Storage: 2-8°C
 M = 559.60 g/mol LGK: 10 - 13
 CAS-No.: 7423-31-6
 HS-No.: 32129000
 EC-No.: 231-047-7

Specification:

Assay (from C) min. 90 %
 E (3 mg/L, CHCl₃, λ_{597 nm}) ... min. 110000

Order-No. A1400,0250 Quantity 250 mg
 A1400,0001 1 g

Literature: (1) Dahlberg, A.E. *et al.* (1969) *J. Mol. Biol.* **41**, 139-147

(2) Edstrom, R.D. (1969) *Anal. Biochem.* **29**, 421-432

(3) Green, M.R. *et al.* (1973) *Anal. Biochem.* **56**, 43-51

(4) Myers, J.M. *et al.* (1996) *Anal. Biochem.* **240**, 300-302

(5) Goldberg, H.A. & Warner, K.J. (1997) *Anal. Biochem.* **251**, 227-233

Electrophoretic characterization of bacterial polyribosomes in agarose-acrylamide composite gels.

A colorimetric method for the determination of Mucopolysaccharides and other acidic polymers.

Differential staining of phosphoproteins on polyacrylamide gels with a cationic carbocyanine dye.

A method for enhancing the sensitivity and stability of Stains-All for phosphoproteins separated in SDS-polyacrylamide gels.

Improvement of the sensitivity and stability of stains all staining in combination with silver nitrate of acidic proteins in polyacrylamide gels.

Comment: Stains all stains RNA (blue-violet, λ_{max} 600 nm), DNA (blue, λ_{max} 620 nm), protein (red, BSA λ_{max} 515 nm) and polysaccharides (different colors λ_{max} 600 - 640 nm). According to reference (1) Stains all is prepared as a 0.1 % stock solution in 100 % formamide. For staining, this stock solution is diluted 1 : 20 with a final concentration of 50 % formamide. Therefore, in a first step dilute the stock solution 1 : 1 with water and in a second step dilute the solution from step one 1 : 10 with 50 % formamide. According to reference (2) 5.6 mg of Stains all is dissolved in 10 ml dioxane : water (50 : 50). If it is dissolved, add 85 ml of water and 0.1 ml of 1 M acetic acid. This solution is stable for several hours. Add 5 ml of 0.01 M ascorbic acid just before use. Store protected from light and use within one hour.

Standards: Element Standards for AAS (Atomic Absorption Spectroscopy)

HS-No.: 38220000 Storage: RT

Aluminium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P280-P302+P352



Specification:

c (Al) as Al in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No. A2440,0500 Quantity 500 ml

Antimony standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/II
 UN1789
 WGK: 1
 Danger
 H290-H314
 P302+P352-P280



Specification:

c (Sb) as SbCl₃ in approx. 5 M hydrochloric acid 1000 mg/L (±0.5 %)

Order-No. A2441,0500 Quantity 500 ml

Arsenic standard solution 1000 mg/L for AAS

C

LGK: 6.1 B

Class / PG: 8/III
UN3264
WGK: 3
Danger
H315-H290-H350
P201-P309+P311-P273-P280



Specification:

c (As) as As_2O_3 in approx. 0.5 M nitric acid 1000 mg/L ($\pm 0.5\%$)

Order-No.
A2442,0500

Quantity
500 ml

Barium standard solution 1000 mg/L for AAS

C

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P280-P302+P352



Specification:

c (Ba) as $\text{Ba}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L ($\pm 0.5\%$)

Order-No.
A2443,0500

Quantity
500 ml

Boron standard solution 1000 mg/L for AAS

C

LGK: 8 B

WGK: nwg

Specification:

c (B) as H_3BO_3 in water 1000 mg/L ($\pm 0.5\%$)

Order-No.
A2445,0500

Quantity
500 ml

Cadmium standard solution 1000 mg/L for AAS

C

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H412-H290-H315
P302+P352-P280



Specification:

c (Cd) as $\text{Cd}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L ($\pm 0.5\%$)

Order-No.
A2446,0500

Quantity
500 ml

Calcium standard solution 1000 mg/L for AAS

C

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H290
P302+P352-P280



Specification:

c (Ca) as $\text{Ca}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L ($\pm 0.5\%$)

Order-No.
A2447,0500

Quantity
500 ml

Chromium standard solution 1000 mg/L for AAS

C

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P280-P302+P352



Specification:

c (Cr) as $\text{Cr}(\text{NO}_3)_3$ in approx. 0.5 M nitric acid 1000 mg/L ($\pm 0.5\%$)

Order-No.
A2448,0500

Quantity
500 ml

Cobalt standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Danger
 H351i-H411-H290-H360-H315
 P302+P352-P308+P313-P280



C

Specification:c (Co) as $\text{Co}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2449,0500

Quantity
 500 ml

Copper standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H412-H290-H315
 P280-P302+P352



C

Specification:c (Cu) as $\text{Cu}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2453,0500

Quantity
 500 ml

Iron standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H315
 P302+P352-P280



C

Specification:c (Fe) as $\text{Fe}(\text{NO}_3)_3$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2450,0500

Quantity
 500 ml

Lead standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P280-P302+P352



C

Specification:c (Pb) as Pb in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2444,0500

Quantity
 500 ml

Lithium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P280-P302+P352



C

Specification:c (Li) as LiNO_3 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2454,0500

Quantity
 500 ml

Magnesium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P280-P302+P352



C

Specification:c (Mg) as $\text{Mg}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2455,0500

Quantity
 500 ml

Manganese standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P302+P352-P280



Specification:

c (Mn) as $\text{Mn}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2456,0500

Quantity
500 ml

Mercury standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H332-H290-H315-H373
P302+P352-P304+P340-P280



Specification:

c (Hg) as $\text{Hg}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2460,0500

Quantity
500 ml

Molybdenum standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H290
P280-P302+P352



Specification:

c (Mo) as $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2457,0500

Quantity
500 ml

Nickel standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H412-H315
P280-P302+P352



Specification:

c (Ni) as $\text{Ni}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2459,0500

Quantity
500 ml

Potassium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P280-P302+P352



Specification:

c (K) as KNO_3 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2452,0500

Quantity
500 ml

Selenium standard solution 1000 mg/ml for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H290-H412
P302+P352-P280



Specification:

c (Se) as SeO_2 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2461,0500

Quantity
500 ml

Silicon standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/II
 UN1824
 WGK: nwg
 Danger
 H314-H290
 P280-P302+P352-P305+P351+P338

**Specification:**c (Si) as SiCl_4 in approx. 2 M sodium hydroxide solution 1000 mg/L (± 0.5 %)

Order-No.
A2463,0500

Quantity
 500 ml

Silver standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H315-H412
 P302+P352-P280-P308+P313

**Specification:**c (Ag) as AgNO_3 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2462,0500

Quantity
 500 ml

Sodium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P280-P302+P352

**Specification:**c (Na) as NaNO_3 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2458,0500

Quantity
 500 ml

Strontium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H315
 P280-P302+P352

**Specification:**c (Sr) as $\text{Sr}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2464,0500

Quantity
 500 ml

Tellurium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/II
 UN2031
 WGK: 1
 Danger
 H290-H314
 P309+P311-P280-P305+P351+P338

**Specification:**c (Te) as TeO_2 in approx. 3 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2465,0500

Quantity
 500 ml

Tin standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/II
 UN1789
 WGK: 1
 Danger
 H314-H335-H290
 P280-P302+P352-P308+P313

**Specification:**c (Sn) as Sn in approx. 2 M hydrochloric acid 1000 mg/L (± 0.5 %)

Order-No.
A2470,0500

Quantity
 500 ml

Titanium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290
P406-P390



Specification:

c (Ti) as TiCl_4 in approx. 2 M hydrochloric acid 1000 mg/L (± 0.5 %)

Order-No.
A2466,0500

Quantity
500 ml

Vanadium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/II
UN3264
WGK: 1
Danger
H290-H314
P280-P302+P352



Specification:

c (V) as NH_4VO_3 in approx. 1 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2467,0500

Quantity
500 ml

Zinc standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P280-P302+P352



Specification:

c (Zn) as Zn in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A2469,0500

Quantity
500 ml

Zirconium standard solution 1000 mg/L for AAS

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290
P390-P406



Specification:

c (Zr) as ZrOCl_2 in approx. 2 M hydrochloric acid 1000 mg/L (± 0.5 %)

Order-No.
A2471,0500

Quantity
500 ml

Standards: Element Standards for ICP ("Inductively Coupled Plasma")

HS-No.: 38220000

Storage: RT

Aluminium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P302+P352-P280



Specification:

c (Al) as Al in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0524,0100

Quantity
100 ml

Antimony standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/II
UN1789
WGK: 1
Danger
H290-H314
P280-P302+P352

C



Specification:

c (Sb) as SbCl₃ in approx. 5 M hydrochloric acid 1000 mg/L (±0.5 %)

Order-No.
A0522,0100

Quantity
100 ml

Barium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H290
P280-P302+P352

C



Specification:

c (Ba) as Ba(NO₃)₂ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0520,0100

Quantity
100 ml

Boron standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

WGK: nwg

C

Specification:

c (B) as H₃BO₃ in water 1000 mg/L (±0.5 %)

Order-No.
A0516,0100

Quantity
100 ml

Cadmium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H412-H290
P280-P302+P352

C



Specification:

c (Cd) as Cd(NO₃)₂ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0514,0100

Quantity
100 ml

Calcium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H290
P280-P302+P352

C



Specification:

c (Ca) as Ca(NO₃)₂ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0512,0100

Quantity
100 ml

Chromium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P280-P302+P352

C



Specification:

c (Cr) as Cr(NO₃)₃ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0510,0100

Quantity
100 ml

Cobalt standard solution 1000 mg/L for ICP*Standard with declaration of purity*

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Danger
 H351i-H290-H411-H360-H315
 P302+P352-P280-P308+P313



C

Specification:c (Co) as $\text{Co}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0508,0100

Quantity
 100 ml

Copper standard solution 1000 mg/L for ICP*Standard with declaration of purity*

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H412-H315
 P302+P352-P280



C

Specification:c (Cu) as $\text{Cu}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0502,0100

Quantity
 100 ml

Iron standard solution 1000 mg/L for ICP*Standard with declaration of purity*

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P302+P352-P280



C

Specification:c (Fe) as $\text{Fe}(\text{NO}_3)_3$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0506,0100

Quantity
 100 ml

Lead standard solution 1000 mg/L for ICP*Standard with declaration of purity*

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H315
 P302+P352-P280



C

Specification:c (Pb) as Pb in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0518,0100

Quantity
 100 ml

Lithium standard solution 1000 mg/L for ICP*Standard with declaration of purity*

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H315
 P280-P302+P352



C

Specification:c (Li) as LiNO_3 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0500,0100

Quantity
 100 ml

Magnesium standard solution 1000 mg/L for ICP*Standard with declaration of purity*

LGK: 8 B

Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H315-H290
 P280-P302+P352



C

Specification:c (Mg) as $\text{Mg}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0498,0100

Quantity
 100 ml

Manganese standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P280-P302+P352



Specification:

c (Mn) as $\text{Mn}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0496,0100

Quantity
100 ml

Mercury standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H373-H332
P304+P340-P280-P302+P352



Specification:

c (Hg) as $\text{Hg}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0486,0100

Quantity
100 ml

Molybdenum standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P302+P352-P280



Specification:

c (Mo) as $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0494,0100

Quantity
100 ml

Nickel standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H412-H290
P302+P352-P280



Specification:

c (Ni) as $\text{Ni}(\text{NO}_3)_2$ in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0490,0100

Quantity
100 ml

Potassium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P302+P352-P280



Specification:

c (K) as KNO_3 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0504,0100

Quantity
100 ml

Selenium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H412-H290-H315
P302+P352-P280



Specification:

c (Se) as SeO_2 in approx. 0.5 M nitric acid 1000 mg/L (± 0.5 %)

Order-No.
A0482,0100

Quantity
100 ml

Silver standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315-H412
P280-P302+P352-P308+P313



Specification:

c (Ag) as AgNO₃ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0480,0100

Quantity
100 ml

Sodium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H315-H290
P302+P352-P280



Specification:

c (Na) as NaNO₃ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0492,0100

Quantity
100 ml

Strontium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H315
P302+P352-P280



Specification:

c (Sr) as Sr(NO₃)₂ in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0478,0100

Quantity
100 ml

Tellurium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/II
UN2031
WGK: 1
Danger
H314-H290
P309+P311-P305+P351+P338-P280



Specification:

c (Te) as TeO₂ in approx. 3 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0476,0100

Quantity
100 ml

Tin standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/II
UN1789
WGK: 1
Danger
H335-H290-H314
P302+P352-P308+P313-P280



Specification:

c (Sn) as Sn in approx. 2 M hydrochloric acid 1000 mg/L (±0.5 %)

Order-No.
A0468,0100

Quantity
100 ml

Titanium standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290
P406-P390



Specification:

c (Ti) as TiCl₄ in approx. 2 M hydrochloric acid 1000 mg/L (±0.5 %)

Order-No.
A0474,0100

Quantity
100 ml

Zinc standard solution 1000 mg/L for ICP

Standard with declaration of purity

LGK: 8 B

 Class / PG: 8/III
 UN3264
 WGK: 1
 Warning
 H290-H315
 P280-P302+P352

C

**Specification:**

c (Zn) as Zn in approx. 0.5 M nitric acid 1000 mg/L (±0.5 %)

Order-No.
A0470,0100
Quantity
 100 ml
Starch
 $(C_6H_{10}O_5)_n$
 $M = (162.14)n$ g/mol
 CAS-No.: 9005-84-9
 EC-No.: 232-686-4

 Storage: RT
 LGK: 10 - 13
Starch (Smithies)

B

Toronto-Starch
 hydrolysed starch for electrophoresis

HS-No.: 35051090

Specification:
 Loss on drying max. 20 %
 Solubility (2 %; H₂O; 90°C) . clear
 Sulfated ash max. 1 %

Order-No.
A2224,0500 500 g
A2224,1000 1 kg
A2224,2000 2 kg

Literature: (1) Smithies, O. (1955) *Biochem. J.* **61**, 629-641
 (2) Smithies, O. (1959) *Biochem. J.* **71**, 585-587

 Zone electrophoresis in starch gels
 Improvement of starch electrophoresis.
Starch (from potatoes)

B

Amylum solubile

HS-No.: 11081300

Specification:
 Loss on drying max. 20 %
 Sulfated ash max. 0.6 %
 pH (2 %; H₂O) 6.0 - 7.5 (20°C)

Fe max. 0.001 %

Order-No.
A2223,1000 1 kg
A2223,5000 5 kg
Starch cold-soluble

B

HS-No.: 35051090

Specification:
 Loss on drying max. 15 %
 pH (1 %; H₂O) 5.5 - 7.5

Order-No.
A4881,1000 1 kg
A4881,5000 5 kg
Starch - Solutions
 HS-No.: 38220000
 EC-No.: 232-686-4

 Storage: RT
 LGK: 10 - 13
Starch - Solution 2 %

C

Composition:

Starch (A2223) 20 g/L

Specification:
 pH (H₂O; 20°C) 5.0 - 7.0
 Fe max. 0.001 %

Order-No.
A1433,0500 500 ml
A1433,1000 1 L
A1433,10006 6 x 1 L
Starch - Solution 1 %

C

Composition:

Starch (A2223) 10 g/L

Specification:
 pH (H₂O) 6.0 - 7.5 (20°C)
 Fe max. 0.001 %

Order-No.
A2569,0500 500 ml
A2569,1000 1 L
A2569,10006 6 x 1 L
A2569,5000 5 L
Starch - Solution 0.5 %

C

Composition:

Starch (A2223) 5 g/L

Specification:
 pH (H₂O) 6.0 - 7.5 (20°C)
 Fe max. 0.001 %

Order-No.
A2714,1000 1 L
A2714,10006 6 x 1 L
A2714,5000 5 L

Staurosporine BioChemica

B

Antibiotic AM-2282
from *Streptomyces staurosporeus*

$C_{28}H_{26}N_4O_3$
 $M = 466.53$ g/mol
CAS-No.: 62996-74-1
HS-No.: 29419000

Storage: 2-8°C
protected from light

Danger
H350
P308+P313-P201



Specification:

Assay min. 97 %
 λ_{max} (MeOH) 208, 241, 292, 334,
355, 373 nm

Solubility (5 mg/ml EtOAc)
..... clear, colorless

Order-No.	Quantity
A7626,00005	0.5 mg
A7626,0001	1 mg

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*, page A.1K.24 (Suppl. 59). Greene Publishing & Wiley-Interscience, New York.

(2) Kocher, M. & Clemetson, K.J. (1991) *Biochem. J.* **275**, 301-306

(3) Kanaho, Y. *et al.* (1992) *J. Biol. Chem.* **267**, 23554-23559

(4) Ramamorthy, J.D. *et al.* (1995) *J. Biol. Chem.* **270**, 17189-17195

(5) Kim, Y.J. *et al.* (2002) *J. Dent. Res.* **81**, 788-793

(6) Zhang, X.D. *et al.* (2004) *Mol. Cancer Ther.* **3**, 187-197

(7) Lassota, P. *et al.* (1996) *J. Biol. Chem.* **271**, 26418-26423

(8) Shinozuka, Y. *et al.* (2003) *Nucleic Acids Res. Suppl.* **3301**-302

Staurosporine both activates and inhibits serine/threonine kinases in human platelets. A Protein Kinase C Inhibitor, Staurosporine, Activates Phospholipase D via Pertussis Toxin sensitive GTP-binding Protein in Rabbit Peritoneal Neutrophils.

Cyclic AMP-independent Up-regulation of the Human Serotonin Transporter by Staurosporine inChoriocarcinoma Cells.

Staurosporine Mobilizes Ca^{2+} from Secretory Granules by Inhibiting Protein Kinase C in Rat Submandibular Acinar Cells.

Staurosporine induces apoptosis of melanoma by both caspase-dependent and - independent apoptotic pathways.

Mechanism of Topoisomerase II Inhibition by Staurosporine and Other Protein Kinase Inhibitors.

Staurosporine stimulates insulin gene expression via CRE dependent manner.

Comment: Originally, Staurosporine was isolated from *Streptomyces staurosporeus*. It has antifungal but not antibacterial properties. In the meantime, a variety of structurally related alkaloids (indolcarbazoles) could be isolated, binding to the ATP-binding site in enzymes. Staurosporine is cell-permeable and inhibits several kinases at very low concentrations (PKC K_i 0.7 nM; PKA K_i 7 nM; MLCK K_i 1.3 nM; according to ref. 1). The large number of targets explains the different, in some cases cell-type specific, physiological effects: e.g. Induction of apoptosis, Ca^{2+} release, Phospholipase D activation or activation of genes. In addition, Topoisomerase II is inhibited by blocking of the transfer of the phosphodiester binding of ATP to the tyrosine in the active center.

Solubility and stability: Staurosporine is soluble in DMSO, methanol or ethanol, but not in water. Stock solutions may be prepared with a concentration of 1 mM and are stored at - 20°C, protected from light. Solutions are stable for at least 6 months. The working concentration may vary between 10 to 200 nM.

Stearic acid pure

C

Octadecanoic acid

$C_{18}H_{36}O_2$
 $M = 284.47$ g/mol
CAS-No.: 57-11-4
HS-No.: 29157000
EC-No.: 200-313-4

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: nwg

Melting point 53 - 59°C

Specification:

Assay (Stearic & Palmitic acid)
..... min. 97 %
Assay (Stearic acid) 40 - 60 %
Heavy metals (as Pb) max. 0.001 %
Identity complies
Iodine No. max. 3
Sulfated ash max. 0.1 %

Order-No.	Quantity
A4640,0500	500 g
A4640,1000	1 kg
A4640,10006	6 x 1 kg
A4640,5000	5 kg
A4640,9010	10 kg
A4640,9025	25 kg

Stearic acid magnesium salt see Magnesium stearate pure Ph. Eur. Page 506

STE buffer see TEN buffer Page 801

recombinant Mouse Stem Cell Factor see rM SCF Page 704

recombinant Human Stem Cell Factor see rHu SCF Page 703

recombinant Mouse Stromal Cell-Derived Factor-1 α see rM SDF-1 α Page 705

Sterigmatocystin BioChemica

B

from *Aspergillus versicolor*

$C_{18}H_{12}O_6$
 $M = 324.28$ g/mol
CAS-No.: 10048-13-2
HS-No.: 29329900
EC-No.: 233-158-6

Storage: -20°C

Class / PG: 6.1/III
UN3462
Danger
H351-H301
P280-P301+P310



Melting point 240 - 246°C

Specification:

Assay approx. 98 %
 λ_{max} (MeOH) 233, 246, 325 nm
Solubility (5 mg/ml acetone) clear, colorless

Order-No.	Quantity
A7889,0001	1 mg
A7889,0005	5 mg
A7889,0025	25 mg

STET buffer

B

Lysis of bacteria for plasmid isolation

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 3

Composition:

EDTA- Na_2 (A1104) 0.372 g/L (1 mM)
Sodium chloride (A1149) 5.844 g/L (100 mM)
Tris (A1086) 1.211 g/L (10 mM)
Triton® X-100 (A1388) 5 %

Specification:

pH (20°C; adjusted with HCl)
..... 8.0 $\pm$ 0.2

Order-No.	Quantity
A3835,0250	250 ml
A3835,0500	500 ml
A3835,1000	1 L

Streptavidin ultrapure

B

purified by Affinity chromatography salt-free
from *Streptomyces avidinii*

$M = \sim 60000$ g/mol
CAS-No.: 9013-20-1
HS-No.: 35040090

Storage: 2-8°C

Specification:

Activity 1 mg binds 15 µg
Biotin

Order-No.	Quantity
A1495,0001	1 mg
A1495,0005	5 mg

Literature: (1) Haeuptle, M.-T. *et al.* (1983) *J. Biol. Chem.* **258**, 305-314

Binding sites for lactogenic and somatogenic hormones from rabbit mammary gland and liver: Their purification by affinity chromatography and their identification by immunoprecipitation and photoaffinity labeling.

Comment: Streptavidin is a non-glycosylated biotin binding protein. The immobilisation of streptavidin to a matrix allows the simple purification of biotinylated molecules. It sticks better to plastic than to glass surfaces. Streptavidin is frequently dissolved in water or 0.1 M sodium bicarbonate. The concentration of the stock solution ranges from 0.1 mg to 10 mg/ml.

Addition of sodium chloride increases the solubility.

Unit definition: One unit of streptavidin will bind 1 µg of biotin.

Streptomycin sulfate

$(C_{21}H_{39}N_7O_{12})_2 \cdot 3H_2SO_4$
 $M = 1457.38$ g/mol
CAS-No.: 3810-74-0
HS-No.: 29412080
EC-No.: 223-286-0

Storage: RT
LGK: 10 - 13
Disposal: 3

Danger
H302-H360
P201-P280-P302+P352



Streptomycin sulfate BioChemica

B

Specification:

Activity min. 720 I.U./mg
Loss on drying max. 7 %
pH (5 %; H_2O ; 20°C) 4.5 - 7.0
Sulfate 18 - 21 %

Order-No.	Quantity
A1852,0025	25 g
A1852,0100	100 g
A1852,0250	250 g
A1852,0500	500 g
A1852,1000	1 kg

Comment: Streptomycin was isolated from *Streptomyces griseus*. It acts bacteriostatic at low concentrations and bactericidal at higher concentrations against mycobacteria and gram negative bacteria. It is less active against gram positive bacteria. Like other antibiotics, streptomycin does not act on non-proliferating microorganism. Streptomycin leads to reading errors during translation due to the interaction with the 23S RNA of the 30S ribosomes. The working concentration is normally in the range of 10 - 100 µg/ml. Stock solutions are set up in a range of 10 - 50 mg/ml in water and stored at -20°C.

Stability: Streptomycin sulfate is readily water-soluble (20 mg/ml) but of low solubility in organic solvents. The dry substance is stable for several years at room temperature. Aqueous solutions (pH 3 - 7) are stable for approx. 2 months at room temperature, if stored at +4°C (pH 6 - 8) for three months. Do not autoclave solutions of streptomycin, because it is inactivated by 50 % at 100°C within minutes. Different oxidizing and reducing agents may inactivate the antibiotic.

Streptomycin sulfate pure Ph. Eur.

C

Specification:

Abnormal toxicity complies
Appearance of solution complies
Colorimetric test complies
Identity complies

Loss on drying max. 7.0 %
Potency (anhydr. subst.) min. 720 I.U./mg
Sulfated ash max. 1.0 %
pH (25 %; H_2O) 4.5 - 7.0

Methanol (GC) . . . max. 0.3 %
Streptomycin B . . max. 3.0 %
Sulfate (anhydrous subst.)
..... 18.0 - 21.5 %

Order-No.	Quantity
A7003,0100	100 g
A7003,0250	250 g
A7003,1000	1 kg

Streptozocin see Streptozotocin Page 774

Streptozotocin

B

N-(Methylnitrosocarbonyl)- α -D-glucosamine, Streptozotocin

$C_8H_{15}N_3O_7$
 $M = 265.22$ g/mol
CAS-No.: 18883-66-4
HS-No.: 29419000
EC-No.: 242-646-8

Storage: 2-8°C
protected from light

Warning
H350
P201-P308+P313



Specification:

Assay (HPLC, anhydrous subst.)
..... min. 96 %
 α -Anomer (HPLC) min. 75 %
Heavy metals (as Pb) max. 0.0005 %

Identity complies
Sulfated ash max. 0.3 %
Water (K.F.) max. 3 %

Order-No.	Quantity
A4272,0100	100 mg
A4272,0250	250 mg
A4272,0001	1 g

Stripping buffer for Western blots see Immunoassay Buffer Page 446

recombinant Human Stromal Cell-Derived Factor-1 α , see rHu SDF-1 α Page 704

recombinant Human Stromal Cell-Derived Growth Factor 20 see rHu SF20 bioconfident grade Page 710

Strontium chloride hexahydrate pure

C

Melting point ~61°C
Solubility (0°C) 1062 g/L (H₂O)

SrCl₂ · 6H₂O
M = 266.62 g/mol
CAS-No.: 10025-70-4
HS-No.: 28273985
EC-No.: 233-971-6

Storage: RT
LGK: 10-13
Disposal: 14

WGK: 1
Warning
H302
P301+P312-P264-P330



Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
pH (5 %; H₂O) 5.0 - 7.0
Sulfate max. 0.01 %

Ba max. 0.02 %
Ca max. 0.05 %
Fe max. 0.001 %
Na max. 0.05 %

Order-No.	Quantity
A7054,0500	500 g
A7054,1000	1 kg
A7054,10006	6 x 1 kg

Stylophorin see Chelidonin HPLC grade Page 196

Suberic acid bis(N-hydroxysuccinimide ester) see Disuccinimidyl suberate *BioChemica* Page 290

Subtilisin Inhibitor I



B

Boc-Ala-Ala-NHO-Bz

C₁₈H₂₅N₃O₆
M = 378.4 g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8630,0001	1 mg
A8630,0005	5 mg

Succinic acid crystalline

Boiling point ~235°C (dec.)
Density (d 20°C/4°C) .. approx. 1.55
Melting range 183 - 187°C

C₄H₆O₄
M = 118.09 g/mol
CAS-No.: 110-15-6
HS-No.: 29171990
EC-No.: 203-740-4

Storage: RT
LGK: 8 B
Disposal: 4

WGK: 1
Warning
H319
P305+P351+P338



Succinic acid crystalline *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
Insoluble matter complies
Chloride max. 0.002 %
Sulfate max. 0.01 %

As max. 0.0003 %
Fe max. 0.002 %
Pb max. 0.002 %

Order-No.	Quantity
A3627,0250	250 g
A3627,0500	500 g
A3627,1000	1 kg

Succinic acid crystalline p. A.

C

Specification:

Assay (titr.) min. 99.5 %
Appearance (powder) white, crystalline
Heavy metals (as Pb) max. 0.0005 %
Identity (IR) complies
Insoluble matter max. 0.005 %

Melting point 183 - 187°C
Ammonium max. 0.001 %
Chloride max. 0.001 %
Phosphate max. 0.001 %
Sulfate max. 0.005 %

Fe max. 0.0005 %

Order-No.	Quantity
A5246,0250	250 g
A5246,0500	500 g
A5246,1000	1 kg
A5246,10006	6 x 1 kg

Succinic acid crystalline pure

C

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.002 %
Chloride max. 0.002 %
Sulfate max. 0.01 %

Order-No.	Quantity
A0766,0250	250 g
A0766,0500	500 g
A0766,1000	1 kg
A0766,5000	5 kg

Succinic acid disodium salt anhydrous *BioChemica*

C

di-Sodium succinate

C₄H₄Na₂O₄
M = 162.06 g/mol
CAS-No.: 150-90-3
HS-No.: 29171990
EC-No.: 205-778-7

Storage: RT
LGK: 10 - 13
Disposal: 3

hygroscopic

Solubility (35°C) 350 g/L (H₂O)

Specification:

Assay (titr.) min. 99 %
Water (K.F.) max. 0.5 %

Order-No.	Quantity
A2136,0100	100 g
A2136,0250	250 g
A2136,0500	500 g

N-Succinimidyl S-acetylthioacetate see SATA Page 702

Succinimidyl 6-(biotinamido)hexanoate see Biotinamidohexanoic acid N-hydroxysuccinimide ester Page 141

N-Succinimidyl D-biotinate see (+)-Biotin-N-hydroxysuccinimide ester *BioChemica* Page 142

N-Succinimidyl N-[(biotinylamino)caproyl]-6-aminocaproate see Biotinamidohexanoyl-6-aminohexanoic acid N-hydroxysuccinimide ester Page 141

N-Succinimidyl bromoacetate see SBA Page 703

N-Succinimidyl iodoacetate see SIA Page 711

Succinimidyl 4-(N-maleimidomethyl)cyclohexane-1-carboxylate see SMCC Page 719

N-Succinimidyl-3-maleimido propionate see BMPS Page 152
N-Succinimidyl-3-(2-pyridyldithio)propionate see SPDP Page 759

D(+)-Sucrose

Melting point	 185 - 187°C	C ₁₂ H ₂₂ O ₁₁	Storage: RT	WGK: nwg
Solubility (20°C)	 readily soluble (H ₂ O)	M = 342.30 g/mol	LGK: 10 - 13	
		CAS-No.: 57-50-1	Disposal: 3	
		HS-No.: 17019910		
		EC-No.: 200-334-9		

D(+)-Sucrose Molecular biology grade

Specification:		Order-No.	Quantity
DNases/RNases/Proteases not detectable	Water (K.F.) max. 0.1 %	A2211,0100	100 g
Assay min. 99.5 %	Sulfate max. 0.005 %	A2211,0500	500 g
α20°C/D; 26 %, H ₂ O +66.3° - +67.0°		A2211,1000	1 kg
Heavy metals (as Pb) max. 0.0005 %		A2211,5000	5 kg
Glucose (TLC) max. 0.5 %			

D(+)-Sucrose Cell culture grade

Specification:		Order-No.	Quantity
Pyrogen test complies	Sulfate max. 0.005 %	A2188,0500	500 g
Assay min. 99 %	As max. 0.0001 %	A2188,1000	1 kg
α20°C/D; 26 %, H ₂ O +66.3° - +67.0°	Ca max. 0.001 %	A2188,5000	5 kg
Glucose (TLC) max. 0.5 %	Pb max. 0.00005 %	A2188,9010	10 kg
Water (K.F.) max. 0.5 %			

D(+)-Sucrose BioChemica

Specification:		Order-No.	Quantity
Assay min. 99 %	Water (K.F.) max. 0.5 %	A3935,1000	1 kg
α20°C/D; 26 %, H ₂ O +66.3° - +67.0°	Sulfate max. 0.005 %	A3935,10006	6 x 1 kg
Heavy metals (as Pb) max. 0.001 %	A (1 M in H ₂ O)	A3935,5000	5 kg
Insoluble matter complies	260 nm max. 0.15	A3935,9010	10 kg
Glucose (TLC) max. 0.5 %	280 nm max. 0.1		

Literature: (1) Mechler, B.M. (1987) *Methods Enzymol.* **152**, 241-248 Isolation of messenger RNA from membrane-bound polysomes.

Comment: In this reference (1), the method of isopycnic centrifugation in a discontinuous sucrose gradient is described.

D(+)-Sucrose p. A.

Specification:		Order-No.	Quantity
Assay min. 99 %	Ca max. 0.001 %	A4734,1000	1 kg
α20°C/D; 26 %, H ₂ O +66.3° - +67.0°	Pb max. 0.00005 %	A4734,10006	6 x 1 kg
Glucose (TLC) max. 0.5 %		A4734,5000	5 kg
Water (K.F.) max. 0.5 %		A4734,9010	10 kg
Sulfate max. 0.005 %		A4734,9025	25 kg
As max. 0.0001 %			

D(+)-Sucrose pure Ph. Eur., NF

Specification:		Order-No.	Quantity
α20°C/D; 26 %, H ₂ O +66.3° - +67.0°	Identity complies	A1125,1000	1 kg
Acidic/alk. react. subst. complies	Loss on drying max. 0.1 %	A1125,10006	6 x 1 kg
Appearance of solution complies	Organic vol. impurities complies	A1125,5000	5 kg
Color no. max. 45	Residue on ignition max. 0.05 %	A1125,9010	10 kg
Conductivity max. 35 µS/cm	Dextrines complies	A1125,9025	25 kg
Endotoxins max. 250 IU/g	Red. sugars/inverted sugars		
Heavy metals (as Pb) max. 0.0005 %	 complies		

Sucrose monolaurate BioChemica

CMC (20°C) 0.4 mM	C ₂₄ H ₄₄ O ₁₂	Storage: 2-8°C	
Classification: nonionic detergent	M = 524.60 g/mol	LGK: 10 - 13	
	CAS-No.: 25339-99-5		
	HS-No.: 29329900		
	EC-No.: 246-873-3		
Specification:		Order-No.	Quantity
Assay min. 98 %		A2225,0250	250 mg
Heavy metals max. 0.0005 %		A2225,0500	500 mg
Loss on drying max. 3 %		A2225,0001	1 g

Literature: (1) Nashima, K. *et al.* (1980) *Biochim. Biophys. Acta* **626**, 390-396

(2) Fong, S.-L. *et al.* (1982) *Methods Enzymol.* **81**, 133-140

(3) Hekman, M. *et al.* (1984) *EMBO J.* **3**, 3339-3345

(4) Motoyama, H. *et al.* (1986) *Biochim. Biophys. Acta* **861**, 9-15

Effect of phospholipid and detergent on the Schiff Base of cephalopod Rhodopsin and Metarhodopsin.

Detergents for extraction of visual pigments: Types, solubilization and stability.

Reconstitution of b-adrenergic receptor with components of adenylate cyclase.

Wavelength modulation by molecular environment in visual pigments.

Comment: Sucrose monolaurate is a mild non-ionic detergent, which is very well suited for the isolation and reconstitution of the visual pigments (rhodopsin) from membranes. This detergent cannot be easily removed by dialysis (2). The β-adrenergic receptor, the G_s-protein and the adenylate cyclase from erythrocyte membranes could be isolated and reconstituted with 0.3 % sucrose monolaurate (3). A series of sucrose ester has been tested in the determination of the absorption maximum of visual pigments and sucrose monolaurate has been found to be the optimal detergent (4). It does not modify the Schiff's base formed between retinal and opsin. The detergent functions like a phospholipid (1). The working concentration is 0.1 - 1 %.

Sudan IV (C.I. 26105)

B

Scarlet Red Scharlach, Sudan BB, Oil Red IV, Sudan R

$C_{24}H_{20}N_4O$
 $M = 380.45$ g/mol
 CAS-No.: 85-83-6
 HS-No.: 32041900
 EC-No.: 201-635-8

Storage: RT

WGK: 3
 Warning
 H319-H315
 P305+P351+P338



Specification:

Assay (photometr.) min. 80 %

Order-No.	Quantity
A4557,0010	10 g
A4557,0025	25 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. page 29B.4.24 (Suppl. 78) Greene Publishing & Wiley-Interscience, New York.

Sudan BB see Sudan IV (C.I. 26105) Page 777

Sudan black B (C.I. 26150)

B

$C_{29}H_{24}N_6$
 $M = 456.55$ g/mol
 CAS-No.: 4197-25-5
 HS-No.: 32151100
 EC-No.: 224-087-1

Storage: RT
 LGK: 10 - 13

Specification:

λ_{max} (95 % EtOH) 596 - 605 nm
 $E\ 1\%/1\text{ cm}$, λ_{max} 390 - 670
 Loss on drying max. 5.0 %

Order-No.	Quantity
A1407,0010	10 g
A1407,0025	25 g

Sudan red G (C.I. 12150)

C

Melting point 135°C

CAS-No.: 1229-55-6
 HS-No.: 32041900
 EC-No.: 214-968-9

Storage: RT
 LGK: 10 - 13

Specification:

λ_{max} (MeOH) 495 - 505 nm
 UV spectrum complies to reference

Order-No.	Quantity
A1297,0001	1 g
A1297,0010	10 g

Sudan R see Sudan IV (C.I. 26105) Page 777

Sugar of lead see Lead(II) acetate trihydrate pure Page 483

Sulfaminic acid see Amidosulfuric acid Page 65

Sulfanilamide

4-Aminobenzene sulfonamide

$C_6H_8N_2O_2S$
 $M = 172.21$ g/mol
 CAS-No.: 63-74-1
 HS-No.: 29350090
 EC-No.: 200-563-4

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1

Melting range 163 - 167°C
 Solubility (20°C) 5 g/L (H_2O)

Sulfanilamide BioChemica

B

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Loss on drying max. 0.5 %
 pH (0.5 %; H_2O) 5.7 - 6.2
 Chloride max. 0.01 %

Sulfate max. 0.02 %

Order-No.	Quantity
A3971,0100	100 g
A3971,0250	250 g
A3971,0500	500 g
A3971,1000	1 kg

Sulfanilamide p. A.

C

Specification:

Assay (titr.) min. 99 %
 Loss on drying max. 0.5 %
 Chloride max. 0.01 %
 Sulfate max. 0.02 %
 Fe max. 0.005 %
 Pb max. 0.002 %

Order-No.	Quantity
A1787,0100	100 g
A1787,0250	250 g
A1787,0500	500 g
A1787,1000	1 kg
A1787,10006	6 x 1 kg

Sulfanilamide pure

C

Specification:

Assay (titr.) min. 98 %
 Heavy metals (as Pb) max. 0.002 %
 Loss on drying max. 1 %
 Chloride max. 0.01 %
 Sulfate max. 0.05 %

Order-No.	Quantity
A2226,0250	250 g
A2226,0500	500 g
A2226,1000	1 kg
A2226,10006	6 x 1 kg
A2226,5000	5 kg

Sulfanilamide - Reagent

C

for detection of Nitrite

HS-No.: 38220000

Storage: RT
LGK: 8 B

Class / PG: 8/III
UN3264
WGK: 1
Danger
H314
P280-P305+P351+P338-P313


Composition:

N-(1-Naphthyl)ethylenediamine · 2HCl
..... 2.0 g/L
Phosphoric acid (A0989) 158.0 g/L
Sulfanilamide (A1787) 40.0 g/L

Order-No.	Quantity
A1827,1000	1 L
A1827,10006	6 x 1 L
A1827,5000	5 L

Sulfanilic acid for synthesis



C

Anilinesulfonic acid, 4-
Aminobenzenesulfonic acid

C₆H₇NO₃S
M = 173.19 g/mol
CAS-No.: 121-57-3
HS-No.: 29214200
EC-No.: 204-482-5

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H317-H315-H319
P305+P351+P338-P280-P302+P352

Melting point 288°C (dec.)
Solubility (20°C) 10 g/L (H₂O)

Specification:

Assay (titr., calc. on anhydrous subst.)
..... min. 99 %
Identity (IR) complies

Water (K.F.) max. 2 %

Order-No.	Quantity
A8186,0250	250 g
A8186,1000	1 kg

Sulfobetaine SB 12

B

SB 3-12, Zwittergent 3-12, N-Dodecyl-
dimethyl-3-ammonio-1-propane-
sulfonate

C₁₇H₃₇NO₃S
M = 335.55 g/mol
CAS-No.: 14933-08-5
HS-No.: 29239000

Storage: RT
LGK: 10 - 13

Warning
H335-H319-H315
P305+P351+P338-P280

Aggregation No. (N_a) 55
CMC (25°C) 3.3 mM
Classification: zwitterionic detergent

Specification:

Assay (titr.) min. 98 %
Solubility (1 %; H₂O) clear, colorless

Order-No.	Quantity
A1460,0025	25 g
A1460,0100	100 g

Literature: (1) Gonenne, A. & Ernst, R. (1978) *Anal. Biochem.* **87**, 28-38

Solubilization of membrane proteins by Sulfobetaines, novel zwitterionic surfactants.

Comment: Sulfobetaine SB 12 is a zwitterionic detergent. Membrane proteins are better solubilized from membranes than with Nonidet® P40 or Triton® X-100. Water-soluble or membrane proteins are not getting denaturated.

Sulfobetaine SB 14

B

N-Tetradecyl-dimethyl-3-ammonio-1-
propanesulfonate

C₁₉H₄₁NO₃S
M = 363.60 g/mol
CAS-No.: 14933-09-6
HS-No.: 29239000

Storage: RT
LGK: 10 - 13

Warning
H335-H319-H315
P305+P351+P338-P280

CMC (25°C) 0.3 mM
Classification: zwitterionic detergent

Specification:

Assay (TLC) min. 98 %
Solubility (1 %; H₂O) clear, colorless

Order-No.	Quantity
A1162,0005	5 g
A1162,0025	25 g

Literature: (1) Gonenne, A. & Ernst, R. (1978) *Anal. Biochem.* **87**, 28-38

Solubilization of membrane proteins by Sulfobetaines, novel zwitterionic surfactants.

Comment: Sulfobetaine SB 14 is a zwitterionic detergent. Membrane proteins are better solubilized from membranes than with Nonidet® P40 or Triton® X-100. Water-soluble or membrane proteins are not getting denaturated. SB 14 might be more efficient in several applications than SB 12. Longer alkyl chains like SB 16 or SB 18 do not improve the impact of this class of detergents (1).

Sulfobromophthalein disodium salt

B

Bromsulfalein,
Phenoltetrabromophthalein disulfonic
acid disodium salt

C₂₀H₈Br₄Na₂O₁₀S₂
M = 838.03 g/mol
CAS-No.: 71-67-0
HS-No.: 29322985
EC-No.: 200-761-0

Storage: RT
Disposal: 3

Danger
H317-H334
P260-P280-P342+P311-P261


Specification:

λ_{max} (0.1 M NaOH) 577 nm ± 2 nm
IR-Spectrum complies
Water (K.F.) max. 10 %

Order-No.	Quantity
A4450,0005	5 g
A4450,0010	10 g
A4450,0025	25 g

Literature: (1) McGuire, J. et al. (1977) *Anal. Biochem.* **83**, 75

Sulfo-EGS

B

Ethylene glycol
bis(sulfosuccinimidylsuccinate) disodium
salt

$C_{18}H_{18}N_2Na_2O_{18}S_2$
 $M = 660.45 \text{ g/mol}$
HS-No.: 29280090

Storage: -20°C

hygroscopic

Solubility Water, DMF

Specification:

Assay min. 90 %
Identity (NMR) complies

Order-No.	Quantity
A7865,0025	25 mg
A7865,0050	50 mg
A7865,0100	100 mg

Comment: Sulfo-EGS is a water-soluble EGS analog. The spacer arm is cleavable using hydroxylamine at pH 8.5.

Sulfogalleine see Pyrogallol red Page 678

Sulfo-MBS

B

m-Maleimidobenzoyl-N-
hydroxysulfosuccinimide ester sodium
salt

$C_{15}H_9N_2NaO_9S$
 $M = 417.29 \text{ g/mol}$
HS-No.: 29280090

Storage: -20°C

hygroscopic

Solubility Water, DMF,
DMSO

Specification:

Assay min. 95 %
Identity (NMR) complies

Order-No.	Quantity
A7945,0025	25 mg
A7945,0050	50 mg
A7945,0100	100 mg

Comment: Sulfo-MBS is a non-cleavable, membrane-impermeable, water-soluble, aromatic heterobifunctional reagent. It reacts toward sulfhydryl and primary amine groups.

Sulfo-NHS-Biotin see (+)-Biotin-3-sulfo-N-hydroxysuccinimide ester sodium salt *BioChemica* Page 142

Sulfo-NHS-LC-Biotin see 6-(Biotinylamino)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt Page 143

Sulfo-NHS-LC-LC-Biotin see 6-(Biotinamidohexanoylamido)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt Page 141

Sulfo-NHS-SS-Biotin see 3-[(2-(Biotinylamino)ethylidithio)propanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt Page 143

1-(3-Sulfopropyl)-pyridinium betaine see 3-(1-Pyridino)-1-propanesulfonate Page 677

Sulfuricinate sodium salt see Turkey red oil Page 846

Sulfo-SMCC

B

Sulfosuccinimidyl 4-(N-
maleimidomethyl) cyclohexane-1-
carboxylate sodium salt

$C_{16}H_{17}N_2NaO_9S$
 $M = 436.37 \text{ g/mol}$
CAS-No.: 92921-24-9
HS-No.: 29280090

Storage: -20°C

hygroscopic

Danger

H319-H360D-H315-H335-H332-H312
P280-PP308+P313-P305+P351+P338-
P201



Solubility Water, DMF,
DMSO

Specification:

Assay min. 97 %
Identity (NMR) complies

Order-No.	Quantity
A7920,0010	10 mg
A7920,0025	25 mg
A7920,0050	50 mg
A7920,0100	100 mg

Comment: Sulfo-SMCC is a non-cleavable, membrane-impermeable, water-soluble heterobifunctional reagent. It reacts toward sulfhydryl and primary amine groups. The NHS ester reacts with primary amines at pH 7 - 9, while the maleimide reacts with thiols at pH 6.5 - 7.5. The cyclohexane ring stabilizes the maleimide group up to pH 7.5.

5-Sulfosalicylic acid dihydrate

Melting point 105 - 109°C

$C_7H_6O_6S \cdot 2H_2O$
 $M = 254.22 \text{ g/mol}$
CAS-No.: 5965-83-3
HS-No.: 29162900
EC-No.: 202-555-6

Storage: RT

LGK: 8 B

Disposal: 4

Class / PG: 8/III

UN2585

WGK: 2

Warning

H319-H315-H302

P305+P351+P338-P302+P352-P260



5-Sulfosalicylic acid dihydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
Heavy metals (as Pb) max. 0.001 %
Insoluble matter max. 0.005 %
Sensitivity of Fe complies
Solubility (5 %; H_2O) clear, colorless

Sulfated ash max. 0.05 %
Salicylic acid max. 0.2 %
Chloride max. 0.001 %
Fe max. 0.001 %

Order-No.	Quantity
A0416,0100	100 g
A0416,0500	500 g
A0416,1000	1 kg
A0416,10006	6 x 1 kg

5-Sulfosalicylic acid dihydrate pure

C

Specification:

Assay (titr.) min. 98 %
 Heavy metals (as Pb) max. 0.002 %
 Solubility (5 %; H₂O) clear
 Sulfated ash max. 0.1 %
 Fe max. 0.005 %

Order-No.	Quantity
A2722,0500	500 g
A2722,1000	1 kg
A2722,10006	6 x 1 kg
A2722,5000	5 kg

Sulfosalicylic acid - Solution 20 % p. A.

C

for the detection of albumin in urine

HS-No.: 29182900

Storage: RT
 LGK: 10 - 13
 Disposal: 4

WGK: 1
 P305+P351+P338

Specification:

Assay (5-Sulfosalicylic acid) approx. 20 %
 Salicylic acid max. 0.01 %
 Chloride max. 0.001 %
 Sulfate max. 0.02 %
 Fe max. 0.001 %

Pb max. 0.001 %

Order-No.	Quantity
A2599,0100	100 ml
A2599,0500	500 ml
A2599,1000	1 L
A2599,10006	6 x 1 L

Sulfosuccinimidyl 4-(N-maleimidomethyl) cyclohexane-1-carboxylate sodium salt see Sulfo-SMCC Page 779
 Sulfosuccinimidyl biotin see (+)-Biotin-3-sulfo-N-hydroxysuccinimide ester sodium salt BioChemica Page 142

Sulfur purified

C

Boiling point 444°C
 Melting point 111 - 119°C

S
 M = 32.06 g/mol
 CAS-No.: 7704-34-9
 HS-No.: 28020000
 EC-No.: 231-722-6

Storage: RT
 LGK: 10 - 13

Class / PG: 4.1/III
 UN1350
 WGK: nwg
 Warning
 H315
 P302+P352

**Specification:**

Assay (iodometr.) 99 - 101 %
 Residue on ignition max. 0.2 %
 Loss on drying max. 0.2 %
 Chloride max. 0.01 %

Sulfate max. 0.01 %
 Sulfide max. 0.001 %
 As max. 0.0005 %

Order-No.	Quantity
A1687,1000	1 kg
A1687,10006	6 x 1 kg
A1687,5000	5 kg

Sulfuric acid (concentrations: ≥ 51 %)

H₂O₄S
 M = 98.08 g/mol
 CAS-No.: 7664-93-9
 HS-No.: 28070010
 EC-No.: 231-639-5

Storage: RT
 LGK: 8 B
 Disposal: 12

Class / PG: 8/II
 UN1830
 WGK: 1
 hygroscopic
 Danger
 H314-H290
 P305+P351+P338-P309-P310-P280-
 P301+P330+P331

Sulfuric acid 98 % for nitrogen determination

C

Specification:

Assay (titr.) min. 97.5 %
 Residue on ignition max. 0.0005 %
 Total N max. 0.0005 %
 Chloride max. 0.00001 %

Order-No.	Quantity
A4309,0500	500 ml
A4309,1000	1 L
A4309,10006	6 x 1 L
A4309,2500	2.5 L
A4309,25004	4 x 2.5 L

Sulfuric acid 96 % ± 0.15 % Viscosimetry grade

C

Specification:

Assay (titr.) 95.85 - 96.15 %

Order-No.	Quantity
A4089,1000	1 L
A4089,10006	6 x 1 L
A4089,2500	2.5 L
A4089,5000	5 L

Sulfuric acid 95 % ultrapure

C

Specification:

Assay (titr.) min. 95 %
 Total N max. 2 ppm
 Total P max. 0.05 ppm
 Total Si max. 0.05 ppm
 Total Chloride max. 0.1 ppm

Ca max. 0.1 ppm
 Cr max. 0.005 ppm
 Cu max. 0.01 ppm
 Fe max. 0.05 ppm
 K max. 0.05 ppm

Mg max. 0.05 ppm
 Na max. 0.5 ppm
 Ni max. 0.005 ppm
 Pb max. 0.005 ppm
 Zn max. 0.02 ppm

Order-No.	Quantity
A0535,0250	250 ml
A0535,0500	500 ml
A0535,1000	1 L
A0535,10006	6 x 1 L

Sulfuric acid 95 - 97 % p. A.

C

Specification:

Assay (titr.)	95 - 97 %
Chloride	max. 0.00001 %
Nitrate	max. 0.00002 %
Phosphate	max. 0.00005 %
Al	max. 0.000005 %
As	max. 0.000001 %
Ca	max. 0.00005 %
Cr	max. 0.000002 %
Fe	max. 0.00002 %
K	max. 0.00001 %
Na	max. 0.00005 %
Ni	max. 0.000002 %
Pb	max. 0.000002 %
Zn	max. 0.000005 %

Order-No. Quantity

A0655,0100	100 ml
A0655,0500GL	500 ml
A0655,0500PE	500 ml
A0655,1000GL	1 L
A0655,10006GL	6 x 1 L
A0655,1000PE	1 L
A0655,10006PE	6 x 1 L
A0655,2500GL	2.5 L
A0655,25004GL	4 x 2,5 L
A0655,2500PE	2.5 L
A0655,25004PE	4 x 2,5 L
A0655,5000	5 L
A0655,9010	10 L
A0655,9025	25 L

Sulfuric acid 95 - 98 % pure Ph. Eur., NF

C

Specification:

Assay	95.0 - 98.0 %	Fe	max. 0.0025 %
Appearance of solution	complies		
Heavy metals (as Pb)	max. 0.0005 %		
Identity	complies		
Red. substances	complies		
Sulfated ash	max. 0.005 %		
Chloride	max. 0.005 %		
Nitrate	complies		
As	max. 0.0001 %		

Order-No. Quantity

A4872,1000	1 L
A4872,10006	6 x 1 L
A4872,2500	2.5 L
A4872,25004	4 x 2,5 L
A4872,5000	5 L
A4872,9010	10 L
A4872,9025	25 L

Sulfuric acid 95 - 97 % pure

C

Specification:

Assay (titr.)	min. 95 %	Ni	max. 0.0005 %
Chloride	max. 0.001 %	Pb	max. 0.0001 %
Nitrate	max. 0.001 %	Zn	max. 0.0005 %
Phosphate	max. 0.005 %		
Al	max. 0.0005 %		
As	max. 0.0001 %		
Ca	max. 0.001 %		
Fe	max. 0.005 %		
Na	max. 0.005 %		

Order-No. Quantity

A0646,1000	1 L
A0646,10006	6 x 1 L
A0646,2500	2.5 L
A0646,25004	4 x 2,5 L
A0646,5000	5 L
A0646,9010	10 L
A0646,9025	25 L

Sulfuric acid 95 % Technical grade

C

Specification:

Assay (titr.)	min. 95 %

Order-No. Quantity

A3995,1000	1 L
A3995,10006	6 x 1 L
A3995,2500	2.5 L
A3995,25004	4 x 2,5 L
A3995,5000	5 L
A3995,9010	10 L
A3995,9025	25 L

Sulfuric acid 90 - 91 % for fat determination

C

for the determination of fat by Gerber and for testing nitrite in milk (D approx. 1.82)

Specification:

Assay (titr.)	90 - 91 %	Ni	max. 0.000002 %
Chloride	max. 0.00001 %	Pb	max. 0.000002 %
Nitrate	max. 0.00002 %	Zn	max. 0.000005 %
Phosphate	max. 0.00005 %		
Al	max. 0.000005 %		
As	max. 0.000001 %		
Ca	max. 0.00005 %		
Fe	max. 0.00002 %		
Na	max. 0.00005 %		

Order-No. Quantity

A0417,1000	1 L
A0417,10006	6 x 1 L
A0417,2500	2.5 L
A0417,25004	4 x 2,5 L
A0417,5000	5 L
A0417,9010	10 L
A0417,9025	25 L

Sulfuric acid 90 - 91 % pure

C

Specification:

Assay (titr.)	min. 90 %	Ni	max. 0.0005 %
Chloride	max. 0.001 %	Pb	max. 0.0001 %
Nitrate	max. 0.001 %	Zn	max. 0.0005 %
Phosphate	max. 0.005 %		
Al	max. 0.0005 %		
As	max. 0.0001 %		
Ca	max. 0.001 %		
Fe	max. 0.005 %		
Na	max. 0.005 %		

Order-No. Quantity

A2669,1000	1 L
A2669,10006	6 x 1 L
A2669,2500	2.5 L
A2669,25004	4 x 2,5 L
A2669,5000	5 L
A2669,9010	10 L
A2669,9025	25 L

Sulfuric acid 75 % p. A.

C

Specification:

Assay (titr.)	min. 75 %	Ca	max. 0.00005 %
Chloride	max. 0.00001 %	Fe	max. 0.00002 %
Nitrate	max. 0.00002 %	Na	max. 0.00005 %
Phosphate	max. 0.00005 %	Ni	max. 0.000002 %
Al	max. 0.000005 %	Pb	max. 0.000002 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A4561,1000	1 L
A4561,10006	6 x 1 L
A4561,2500	2.5 L
A4561,25004	4 x 2,5 L
A4561,5000	5 L

Sulfuric acid 72 % p. A.

C

Specification:

Assay (titr.)	min. 72 %	Ca	max. 0.00005 %
Chloride	max. 0.00001 %	Fe	max. 0.00002 %
Nitrate	max. 0.00002 %	Na	max. 0.00005 %
Phosphate	max. 0.00005 %	Ni	max. 0.000002 %
Al	max. 0.000005 %	Pb	max. 0.000002 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A2678,1000	1 L
A2678,10006	6 x 1 L
A2678,2500	2.5 L
A2678,25004	4 x 2,5 L
A2678,5000	5 L

Sulfuric acid 62.3 % for fat determination

C

Density (D approx. 1.52)

Specification:

Assay (titr.)	62 - 63 %	Fe	max. 0.005 %
Chloride	max. 0.001 %	Na	max. 0.005 %
Nitrate	max. 0.001 %	Ni	max. 0.0005 %
Phosphate	max. 0.005 %	Pb	max. 0.0001 %
Al	max. 0.0005 %	Zn	max. 0.0005 %
As	max. 0.0001 %		
Ca	max. 0.001 %		

Order-No.	Quantity
A4294,1000	1 L
A4294,10006	6 x 1 L
A4294,2500	2.5 L
A4294,25004	4 x 2,5 L
A4294,5000	5 L
A4294,9010	10 L

Sulfuric acid (concentrations: 15 - 51 %)

H₂SO₄

H₂O₄S
M = 98.08 g/mol
CAS-No.: 7664-93-9
HS-No.: 28070010
EC-No.: 231-639-5

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/II
UN2796
WGK: 1
Danger
H314-H290
P310-P305+P351+P338-P280-P309-
P301+P330+P331



Sulfuric acid 50 % p. A.

C

Specification:

Assay (titr.)	min. 50 %	Ca	max. 0.00005 %
Chloride	max. 0.00001 %	Fe	max. 0.00002 %
Nitrate	max. 0.00002 %	Na	max. 0.00005 %
Phosphate	max. 0.00005 %	Ni	max. 0.000002 %
Al	max. 0.000005 %	Pb	max. 0.000002 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A2102,1000	1 L
A2102,10006	6 x 1 L
A2102,2500	2.5 L
A2102,25004	4 x 2,5 L
A2102,5000	5 L

Sulfuric acid 50 % pure

C

Specification:

Assay (titr.)	min. 50 %	Ca	max. 0.001 %
Chloride	max. 0.001 %	Fe	max. 0.005 %
Nitrate	max. 0.001 %	Na	max. 0.005 %
Phosphate	max. 0.005 %	Ni	max. 0.0005 %
Al	max. 0.0005 %	Pb	max. 0.0001 %
As	max. 0.0001 %	Zn	max. 0.0005 %

Order-No.	Quantity
A2686,1000	1 L
A2686,10006	6 x 1 L
A2686,2500	2.5 L
A2686,25004	4 x 2,5 L
A2686,5000	5 L

Sulfuric acid 40 % p. A.

C

Specification:

Assay (titr.)	min. 40 %	Ca	max. 0.00005 %
Chloride	max. 0.00001 %	Fe	max. 0.00002 %
Nitrate	max. 0.00002 %	Na	max. 0.00005 %
Phosphate	max. 0.00005 %	Ni	max. 0.000002 %
Al	max. 0.000005 %	Pb	max. 0.000002 %
As	max. 0.000001 %	Zn	max. 0.000005 %

Order-No.	Quantity
A2270,1000	1 L
A2270,10006	6 x 1 L
A2270,2500	2.5 L
A2270,25004	4 x 2,5 L
A2270,5000	5 L

Sulfuric acid 40 % pure

C

Specification:

Assay (titr.)	min. 40 %	Al	max. 0.0005 %	Na	max. 0.005 %
Chloride	max. 0.001 %	As	max. 0.0001 %	Ni	max. 0.0005 %
Nitrate	max. 0.001 %	Ca	max. 0.001 %	Pb	max. 0.0001 %
Phosphate	max. 0.005 %	Fe	max. 0.005 %	Zn	max. 0.0005 %

Order-No.	Quantity
A6276,1000	1 L
A6276,2500	2.5 L
A6276,5000	5 L

Sulfuric acid 37 % Technical grade (Battery acid)

C

Specification:

Assay (titr.) approx. 37 %

Order-No.	Quantity
A2432,2500	2.5 L
A2432,25004	4 x 2,5 L
A2432,5000	5 L
A2432,9010	10 L
A2432,9025	25 L

Sulfuric acid 30 % p. A.

C

Specification:

Assay (titr.) min. 30 %	Ca max. 0.00005 %
Chloride max. 0.00001 %	Fe max. 0.00002 %
Nitrate max. 0.00002 %	Na max. 0.00005 %
Phosphate max. 0.00005 %	Ni max. 0.000002 %
Al max. 0.000005 %	Pb max. 0.000002 %
As max. 0.000001 %	Zn max. 0.000005 %

Order-No.	Quantity
A2689,1000	1 L
A2689,10006	6 x 1 L
A2689,2500	2.5 L
A2689,25004	4 x 2,5 L
A2689,5000	5 L

Sulfuric acid 30 % pure

C

Specification:

Assay (titr.) min. 30 %	Ca max. 0.001 %
Chloride max. 0.001 %	Fe max. 0.005 %
Nitrate max. 0.001 %	Na max. 0.005 %
Phosphate max. 0.005 %	Ni max. 0.0005 %
Al max. 0.0005 %	Pb max. 0.0001 %
As max. 0.0001 %	Zn max. 0.0005 %

Order-No.	Quantity
A2712,1000	1 L
A2712,10006	6 x 1 L
A2712,2500	2.5 L
A2712,25004	4 x 2,5 L
A2712,5000	5 L

Sulfuric acid 25 % p. A.

C

Specification:

Assay (titr.) min. 25 %	Ca max. 0.00005 %
Chloride max. 0.00001 %	Fe max. 0.00002 %
Nitrate max. 0.00002 %	Na max. 0.00005 %
Phosphate max. 0.00005 %	Ni max. 0.000002 %
Al max. 0.000005 %	Pb max. 0.000002 %
As max. 0.000001 %	Zn max. 0.000005 %

Order-No.	Quantity
A2503,1000	1 L
A2503,10006	6 x 1 L
A2503,2500	2.5 L
A2503,25004	4 x 2,5 L
A2503,5000	5 L

Sulfuric acid 25 % pure

C

Specification:

Assay (titr.) min. 25 %	Ca max. 0.001 %
Chloride max. 0.001 %	Fe max. 0.005 %
Nitrate max. 0.001 %	Na max. 0.005 %
Phosphate max. 0.005 %	Ni max. 0.0005 %
Al max. 0.0005 %	Pb max. 0.0001 %
As max. 0.0001 %	Zn max. 0.0005 %

Order-No.	Quantity
A2671,1000	1 L
A2671,10006	6 x 1 L
A2671,2500	2.5 L
A2671,25004	4 x 2,5 L
A2671,5000	5 L

Sulfuric acid 20 % pure

C

Specification:

Assay (titr.) min. 20 %
Chloride max. 0.001 %
Phosphate max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A2762,2500	2.5 L
A2762,25004	4 x 2,5 L
A2762,5000	5 L
A2762,9010	10 L

Sulfuric acid 10 %

H_2SO_4	H_2O_4S	Storage: RT	Class / PG: 8/II
	$M = 98.08 \text{ g/mol}$	LGK: 8 B	UN2796
	CAS-No.: 7664-93-9	Disposal: 12	WGK: 1
	HS-No.: 28070010		Warning
	EC-No.: 231-639-5		H290-H315-H319
			P280-P305+P351+P338-P310-P309-
			P301+P330+P331



Sulfuric acid 10 % p. A.

C

Specification:

Assay (titr.) min. 10 %	Ca max. 0.00005 %
Chloride max. 0.00001 %	Fe max. 0.00002 %
Nitrate max. 0.00002 %	Na max. 0.00005 %
Phosphate max. 0.00005 %	Ni max. 0.000002 %
Al max. 0.000005 %	Pb max. 0.000002 %
As max. 0.000001 %	Zn max. 0.000005 %

Order-No.	Quantity
A2674,1000	1 L
A2674,10006	6 x 1 L
A2674,2500	2.5 L
A2674,25004	4 x 2,5 L
A2674,5000	5 L

Sulfuric acid 10 % pure

C

Specification:

Assay (titr.) min. 10 %	Ca max. 0.001 %
Chloride max. 0.001 %	Fe max. 0.005 %
Nitrate max. 0.001 %	Na max. 0.005 %
Phosphate max. 0.005 %	Ni max. 0.0005 %
Al max. 0.0005 %	Pb max. 0.0001 %
As max. 0.0001 %	Zn max. 0.0005 %

Order-No.	Quantity
A1446,1000	1 L
A1446,10006	6 x 1 L
A1446,2500	2.5 L
A1446,25004	4 x 2,5 L
A1446,5000	5 L

Sulfuric acid - Standard volumetric solution (6 M)

C

H_2SO_4 - Standard volumetric solutions
6 mol/L (12 N Solution)

HS-No.: 28070010
EC-No.: 231-639-5

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/II
UN2796
WGK: 1
Danger
H290-H314
P305+P351+P338-P280-P310-
P301+P330+P331-P309

**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0410,1000	1 L
A0410,2500	2.5 L

Sulfuric acid - Standard volumetric solution (concentrations ≥ 2 M - ≤ 5 M)

H_2SO_4 - Standard volumetric solutions

HS-No.: 28070010
EC-No.: 231-639-5

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/II
UN2796
WGK: 1
Danger
H314-H290
P310-P280-P309-P305+P351+P338-
P301+P330+P331

**Sulfuric acid - Standard volumetric solution (5 M)**

C

5 mol/L (10 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2693,1000	1 L
A2693,2500	2.5 L

Sulfuric acid - Standard volumetric solution (4 M)

C

4 mol/L (8 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A6434,1000	1 L
A6434,2500	2.5 L

Sulfuric acid - Standard volumetric solution (3 M)

C

3 mol/L (6 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2696,1000	1 L
A2696,5000CT	5 L
A2696,5000PE	5 L

Sulfuric acid - Standard volumetric solution (2.5 M)

C

2.5 mol/L (5 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2680,1000	1 L
A2680,10006	6 x 1 L
A2680,5000CT	5 L
A2680,5000PE	5 L

Sulfuric acid - Standard volumetric solution (2 M)

C

2 mol/L (4 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2845,1000	1 L
A2845,10006	6 x 1 L
A2845,5000CT	5 L
A2845,5000PE	5 L

Sulfuric acid - Standard volumetric solution (1 M)

C

H_2SO_4 - Standard volumetric solutions
1 mol/L (2 N Solution)

HS-No.: 28070010
EC-No.: 231-639-5

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: 8/III
UN3264
WGK: 1
Warning
H290-H319-H315
P305+P351+P338-P309-
P301+P330+P331-P280-P310

**Specification:**

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2699,1000	1 L
A2699,10006	6 x 1 L
A2699,5000CT	5 L
A2699,5000PE	5 L
A2699,9010CT	10 L
A2699,9010PE	10 L

Sulfuric acid - Standard volumetric solution (concentrations ≤ 0.5 M)

HS-No.: 38220000
EC-No.: 231-639-5

Storage: RT
LGK: 8 B
Disposal: 12

Class / PG: UN2031
8/II
Warning
H290
P406-P390

**Sulfuric acid - Standard volumetric solution (0.5 M)**

C

0.5 mol/L (1 N Solution)

WGK: 1

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0621,1000	1 L
A0621,10006	6 x 1 L
A0621,5000CT	5 L
A0621,5000PE	5 L
A0621,9010CT	10 L
A0621,9010PE	10 L

Sulfuric acid - Standard volumetric solution (0.25 M)

C

0.25 mol/L (0.5 N Solution)

WGK: nwg

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1713,1000	1 L
A1713,10006	6 x 1 L
A1713,5000CT	5 L
A1713,5000PE	5 L
A1713,9010CT	10 L
A1713,9010PE	10 L

Sulfuric acid - Standard volumetric solution (0.1 M)

C

0.1 mol/L (0.2 N Solution)

WGK: nwg

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2679,1000	1 L
A2679,10006	6 x 1 L
A2679,5000CT	5 L
A2679,5000PE	5 L
A2679,9010CT	10 L
A2679,9010PE	10 L

Sulfuric acid - Standard volumetric solution (0.05 M)

C

0.05 mol/L (0.1 N Solution)

WGK: nwg

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1858,1000	1 L
A1858,10006	6 x 1 L
A1858,5000CT	5 L
A1858,5000PE	5 L
A1858,9010CT	10 L
A1858,9010PE	10 L

Sulfuric acid - Standard volumetric solution (0.025 M)

C

0.025 mol/L (0.05 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2096,1000	1 L
A2096,5000CT	5 L
A2096,5000PE	5 L

Sulfuric acid - Standard volumetric solution (0.01 M)

C

0.01 mol/L (0.02 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2684,1000	1 L
A2684,10006	6 x 1 L
A2684,5000CT	5 L
A2684,5000PE	5 L

Sulfuric acid - Standard volumetric solution (0.005 M)

C

0.005 mol/L (0.01 N Solution)

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A2688,1000	1 L
A2688,10006	6 x 1 L
A2688,5000CT	5 L
A2688,5000PE	5 L

Supplement for Malt Extract Agar & Potato Dextrose Agar see Supplements for Microbiological Media Page 786

Supplements for Microbiological Media

Supplement for *Bacillus cereus* (PREP) Agar Base

C

Sterile Egg Yolk Polymyxin (PREP)
Emulsion

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Egg yolk 50 %
Polymyxin 8 mg/50 ml

Order-No.	Quantity
A6782,0100	100 ml

◆ **Attention:** Please note that this supplement is part of the *Bacillus cereus* (PREP) Agar Base (A5639).

Comment: This sterile, stabilized emulsion of egg yolk containing polymyxin B is used for the identification of *Bacillus* species by their lipase activity.

Directions for preparing the agar: Suspend 46 g of *Bacillus cereus* Agar Base (A5639) in 900 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 100 ml of Egg Yolk Polymyxin PREP Emulsion (A6782). Mix well before pouring. Store the prepared medium in the dark at 2-8°C.

Supplement for Baird-Parker Agar Base

C

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Egg yolk 50 %
Potassium tellurite 50 mg/25 ml

Order-No.	Quantity
A6783,0050	50 ml

◆ **Attention:** Please note that this supplement is part of the Baird-Parker Agar Base (A5648).

Comment: This sterile, stabilized emulsion of egg yolk containing potassium tellurite is used for the isolation and presumptive identification of *Staphylococci*.

Directions for preparing the agar: Suspend 60 g of the Baird-Parker Agar Base (A5648) in 950 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 50 ml of Egg Yolk Tellurite Emulsion (A6783). Mix well before pouring. Store the prepared medium in the dark at 2-8°C. It is recommended to prepare the medium fresh before use.

Supplement for Chocolate Agar Base

C

Growth Factor Mixture (Supplement)

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Adenine	10.0 mg/vial	L-Cystine	11.00 mg/vial
Coccarboxylase	1.00 mg/vial	L-Glutamine	100.00 mg/vial
Ferric nitrate	0.20 mg/vial	NAD	2.50 mg/vial
Glucose	1000.00 mg/vial	Thiamine	0.03 mg/vial
Guanine	0.30 mg/vial	Vitamin B ₁₂	0.10 mg/vial
L-Cysteine	259.00 mg/vial	p-Aminobenzoic acid	0.13 mg/vial

Order-No.	Quantity
A6784,0005	5 ml

◆ **Attention:** Please note that this supplement is part of the Chocolate Agar Base (A5689).

Comment: This is an essential growth factor freeze-dried mixture for the enhanced growth of fastidious microorganism. It is part of a highly nutritious medium for the isolation and cultivation of fastidious microorganisms, especially *Neisseria* and *Haemophilus* species.

Directions: Suspend 16.5 g of Chocolate Agar Base (A5689) in 460 ml distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 35 ml of defibrinated blood and "chocolate" by heating to 80°C for 10 minutes. Cool to 50°C. Dissolve the contents of one vial of Growth Factor Mixture Hydration Fluid with 5 ml of sterile distilled water and aseptically add the "Growth Factor Mixture" (A6784). Mix well and aseptically add to the medium. Mix well before pouring. Store the prepared medium at 2-8°C.

Supplement for DIASALM Medium Base I (Magnesium chloride solution)
C

DIASALM-MSRV Magnesium Chloride Solution

HS-No.: 38220000

Storage: RT

Composition:

Magnesium chloride 600 g/L

Order-No.

A6920,0500

Quantity

500 ml

◆ Attention:

Please note that this supplement is part of the DIASALM Medium Base (A5718).

Comment:See Supplement for DIASALM Medium Base II (Selective Supplement) A6785 for detailed information.

Supplement for DIASALM Medium Base II (Selective Supplement)
C

DIASALM-MSRV Selective Supplement

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Novobiocin 10 mg/vial

Order-No.

A6785,0004

Quantity

4 ml

◆ Attention:

Please note that this supplement is part of the DIASALM Medium Base (A5718).

Comment:This freeze-dried supplement is applied in combination with a second supplement (magnesium chloride solution A6920) to complete a selective medium for the isolation of *Salmonella spp.*
Direction: Fill up 40 ml of DIASALM-MSRV Magnesium Chloride Solution (A6920) to 1 L with distilled water. Suspend 40 g of dehydrated DIASALM medium (A5718) and bring to boil with frequent agitation until the medium is dissolved completely. Cool to 50°C and aseptically add the contents of one vial of DIASALM-MSRV "Selective Supplement" (A6785) reconstituted with 4 ml of sterile distilled water. Mix gently before pouring. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. The prepared medium may be stored at 2-8°C, no longer than 7 days.

Supplement for Endo Agar Base
C

Endo Basic Fuchsin Solution

HS-No.: 32041300

Storage: RT

Composition:

Basic fuchsin 10 %

Class / PG:

3/III
UN1993
WGK: 1

Order-No.

A6786,0100

Quantity

100 ml

◆ Attention:

Please note that this supplement is part of the Endo Agar Base (A3955).

Comment:This basic fuchsin solution is used for the preparation of Endo media. This differential and slightly selective medium is suitable for the detection of coliform and other enteric bacteria.
Directions: Suspend 42 g of Endo Agar Base (A3955) in 1 L of distilled water. Add 5 ml of Endo Basic Fuchsin Solution (A6786). Boil the suspension until the medium is dissolved completely. Mix well before pouring. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C protected from light.

Supplement for Listeria Selective Agar Base, Oxford
C

Listeria Selective Supplement, Oxford

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Acriflavine 2.5 mg/vial
Cefotetan 1.0 mg/vial
Colistin 10.0 mg/vial
Cycloheximide 200.0 mg/vial
Phosphomycin 5.0 mg/vial

Order-No.

A6787,0004

Quantity

4 ml

◆ Attention:

Please note that this supplement is part of the Listeria Selective Agar Base, Oxford (A5776).

Comment:The freeze-dried mixture supplements the selective and differential medium for the detection of *Listeria monocytogenes*.
Directions: Suspend 29.5 g of the Listeria Selective Agar Base, Oxford (A5776) in 500 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of one vial "Listeria Selective Supplement, Oxford" (A6787) reconstituted with 4 ml of ethanol : sterile distilled water (1:1). Mix well before pouring. Store the prepared plates at 2-8°C.

Supplement for Listeria Selective Agar Base, Palcam
C

Listeria Selective Supplement, Palcam

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Acriflavine 2.5 mg/vial
Ceftazidime 10.0 mg/vial
Polymyxin B 5.0 mg/vial

Order-No.

A6788,0004

Quantity

4 ml

◆ Attention:

Please note that this supplement is part of the Listeria Selective Agar Base, Palcam (A5799).

Comment:The freeze-dried mixture is used to supplement the selective and differential medium for the detection of *Listeria monocytogenes*.
Directions: Suspend 36 g Listeria Selective Agar Base, Palcam (A5799) in 500 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of one vial "Listeria Selective Supplement, Palcam" (A6788) reconstituted with 4 ml of sterile distilled water. Mix well before pouring. Store the prepared plates protected from light at 2-8°C and use within 2 weeks.

Supplement for Oxytetracycline Glucose Yeast Extract Agar Base

C

OGYE Selective Supplement,
Oxytetracycline Dextrose Yeast Extract
Agar Base Supplement

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Oxytetracycline 50.0 mg/vial

Order-No.
A6790,0004

Quantity
4 ml

◆ **Attention:** Please note that this supplement is part of the Oxytetracycline Glucose Yeast Extract Agar Base (A5819).

Comment: The freeze-dried mixture is added to the selective medium for the enumeration of moulds and yeast.

Directions: Suspend 19 g of the dehydrated medium (A5819) in 500 ml of distilled water. Boil the suspension until the medium is dissolved completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of one vial of "OGYE Selective Supplement" (A6790). Mix well before pouring. Store the prepared medium at 2-8°C.

Supplement for Potato Dextrose Agar & Malt Extract Agar

C

Supplement for Malt Extract Agar &
Potato Dextrose Agar, Lactic Acid
Solution (Supplement)

HS-No.: 29181100

Storage: RT

Composition:

Lactic acid 10 %

Order-No.
A6789,0100

Quantity
100 ml

◆ **Attention:** Please note that this supplement is part of the Potato Dextrose Agar (A5838) and the Malt Extract Agar (A5789), respectively.

Comment: The lactic acid solution is used to prepare either Potato Dextrose Agar or Malt Extract Agar.

Direction for preparing Potato Dextrose Agar: Suspend 39 g of the dehydrated medium (A5838) in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 115°C for 10 minutes. If it is desired to adjust the reaction to pH 3.5, cool to 55°C and add Lactic acid Solution (A6789) to the agar in the quantity required (about 10 ml). **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Once acidified with lactic acid, the medium should not be re-heated. Store the prepared medium at 2-8°C.

Direction for preparing Malt Extract Agar: Suspend 50 g of the dehydrated medium (A5789) in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 115°C for 10 minutes. If it is desired to adjust the reaction to pH 3.5, cool to 55°C and add Lactic acid Solution (A6789) to the agar in the quantity required. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Once acidified with lactic acid, the medium should not be re-heated. Store the prepared medium at 2-8°C.

Supplement for Reinforced Clostridial (RCM-DRCM) Medium Base

C

DRCM Differential Supplement

HS-No.: 38220000

Storage: 2-8°C
protected from light

Composition:

Ferric citrate 350 mg/vial
Sodium sulfite 200 mg/vial

Order-No.
A6791,00025

Quantity
2.5 ml

◆ **Attention:** Please note that this supplement is part of the Reinforced Clostridial (RCM-DRCM) Medium Base (A5852).

Comment: This is a dehydrated mixture for supplementing the Reinforced Clostridial Medium. This semi-solid medium is used for the cultivation and enumeration of anaerobes, especially *Clostridium* species.

Directions for RCM medium: Suspend 38 g of Reinforced Clostridial Medium Base (A5852) in one litre of distilled water and boil to dissolve the medium completely. Distribute into final containers and sterilize by autoclaving at 121°C for 15 minutes.

Directions for DRCM medium: Suspend 19 g of Reinforced Clostridial Medium Base (A5852) in 500 ml of distilled water and boil to dissolve the medium completely. Distribute into final containers and sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C. Dissolve the content of one vial of "DRCM Differential Supplement" (A6791) with 2.5 ml of distilled water and add one drop (50 µl) to each 10 ml of the medium aseptically, through a sterile filter. To double-strength medium, use double quantity (2 drops/10 ml). Store the prepared RCM medium at 2-8°C. Use the DRCM medium freshly.

Supplement for Selenite Broth Base

C

Selenite Supplement

HS-No.: 28429010

Storage: 2-8°C
protected from light
LGK: 6.1 B
Disposal: 17

Class / PG: 6.1/I
UN2630
WGK: 2

Composition:

Sodium selenite 110 g

Order-No.
A6792,0110

Quantity
110 g

◆ **Attention:** Please note that this supplement is part of the Selenite Broth Base (A3924).

Comment: The sodium selenite powder is added to the enrichment media used to isolate *Salmonella* and some *Shigella* species

Direction: Dissolve 4 g of sodium biselenite supplement (A6792) in 1 L of distilled water, add 19 g of the dehydrated medium (A3924), heat gently to dissolve the medium. Mix well and distribute into final containers. If the broth is not used on the day of preparation, sterilize in a boiling water bath at 100°C for 10 min. Avoid excessive overheating and cool quickly. Do not sterilize by autoclaving - The medium is heat sensitive. Store the prepared medium at 2-8°C.

Supplement for Tetrathionate Broth Base

C

Tetrathionate Iodine Iodide Selective Supplement

HS-No.: 38220000

Storage: RT

Composition:
Iodine 3.0 g/vial
Potassium iodide 2.5 g/vial

Order-No.
A6793,0010

Quantity
10 ml

♦ **Attention:** Please note that this supplement is part of the Tetrathionate Bouillon Base (A3908).

Comment: This dehydrated mixture is a supplement to the medium for a selective enrichment for the isolation of *Salmonella typhi* and other salmonellae.
Direction: Suspend 23 g of the tetrathionate Broth Base (A3908) in 500 ml of distilled water and boil to dissolve the medium completely. Cool to 50°C and aseptically the contents of one vial of Tetrathionate Iodine-Iodide Selective Supplement (A6793) reconstituted with 10 ml of distilled water. Mix well and distribute aseptically into sterile test tubes. **Warning:** The medium is heat sensitive. Do not heat after the addition of the supplement. The complete medium should be used on the day of preparation.

Swainsonine

B

(1*S*,2*R*,8*R*,8*aR*)-1,2,8-Indolizidinetriol

$C_8H_{15}NO_3$
 $M = 173.21$ g/mol
CAS-No.: 72741-87-8
HS-No.: 29339980

Storage: 2-8°C
LGK: 10 - 13

Warning
H312-H332-H302
P280



Specification:
Assay min. 98 %

Order-No.
A2269,0002
A2269,0005

Quantity
2 mg
5 mg

Literature: (1) Dorling, P.R. *et al.* (1980) *Biochem. J.* **191**, 649-651
(2) Elbein, A.D. *et al.* (1981) *Proc. Natl. Acad. Sci. USA* **78**, 7393-7397
(3) Elbein, A.D. *et al.* (1982) *J. Biol. Chem.* **257**, 1573-1576
(4) Tulsiani, D.R.P. *et al.* (1982) *J. Biol. Chem.* **257**, 7936-7939
(5) Elbein, A.D. *et al.* (1983) *J. Cell. Physiol.* **115**, 265-275
(6) Kaushal, G.P. & Elbein, A. (1994) *Methods Enzymol.* **230**, 316-329
(7) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 17.10.7 (Suppl. 22) Greene Publishing & Wiley-Interscience, New York.

Inhibition of lysosomal α -Mannosidase by swainsonine, an indolizidine alkaloid isolated from *Swainsona canescens*.
Swainsonine: an inhibitor of glycoprotein processing.
Swainsonine prevents the processing of the oligosaccharide chains of Influenza virus Hemagglutinine.
Swainsonine inhibits the biosynthesis of complex glycoproteins by inhibition of Golgi Mannosidase II.
Effect of Swainsonine, an inhibitor of glycoprotein processing, on cultured mammalian cells.
Glycosidase inhibitors in study of glycoconjugates.

Comment: Swainsonine is an alkaloid derived from the plant *Swainsona canescens* (1). It reversibly, completely inhibits the lysosomal acidic α -mannosidase at a concentration of 20 μ M the neutral form at the same concentration just with 60 % (1). Mannosidase II from the Golgi-apparatus is inhibited at a concentration of 10 μ M (4). Swainsonine inhibits the formation of branched β 1-6GlcNAc structures.
According to ref. 7, a stock solution is prepared by dissolving 1 mg/ml Swainsonine in water. Filter-sterilize (0.22 μ m filter). Store at -20°C (stable indefinitely).

SYBR Green® staining reagent, DNA free

B

HS-No.: 38220000

Storage: -20°C
protected from light

Specification:
Bacterial DNA not detectable (min. 40 PCR cycle)
Concentration 10X concentrated solution

Order-No.
A8511,100625

Quantity
x 0,625 ml

*trademark of Molecular Probes Inc.

Synperonic® F-68 see Pluronic® F-68 Page 629
Syringaresinol-4',4'-O-bis- β -D-glucoside see Eleutheroside E HPLC grade Page 326
Syringin see Eleutheroside B für die HPLC Page 326
Syringoside see Eleutheroside B für die HPLC Page 326
T-2 Toxin see T2 Toxin BioChemica Page 789

T2 Toxin BioChemica

B

Fusariotoxin, Trichothecen, T-2 Toxin from Fusarium tricinctum

$C_{24}H_{34}O_9$
 $M = 466.53$ g/mol
CAS-No.: 21259-20-1
HS-No.: 29419000
EC-No.: 244-297-7

Storage: -20°C

Class / PG: 6.1/1
UN3462
Danger
H300-H330-H315-H310
P309+P311-P280-P302+P352



Specification:
Assay approx. 98 %
Solubility (5 mg/ml Dichloromethane)
..... clear, colorless

Order-No.
A7918,0001
A7918,0005
A7918,0025

Quantity
1 mg
5 mg
25 mg

Comment: T2-Toxin, a mycotoxin, belongs to the group of the Trichothecenes. It is found in *Fusarium* species, which contaminate crop. By activating several Caspases, T2-Toxin induces apoptosis (especially Caspase-2, -3 and -8). T2-Toxin is extremely heat-stable (inactivation above 200°C) and can be inactivated by sodium hypochlorite. The substance is hardly soluble in water, but freely soluble in ethanol or methanol.

T4 DNA Ligase

B

Ligase, T4 DNA
expressed in *E. coli*

HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

- supplied with reaction buffer (10X)

Specification:

Endo-/Exonucleases not detectable
Concentration (U/ml) 50000 - 100000

Order-No.	Quantity
A5188,2000	2000 U
A5188,10000	10000 U

Comment: T4 DNA Ligase catalyzes the formation of phosphodiester bonds between 5'-phosphate and 3'-hydroxyl termini in duplex DNA/RNA. This enzyme links blunt end and cohesive end termini, repairs single stranded nicks in duplex DNA, RNA, or DNA/RNA hybrids. This T4 DNA ligase has been purified from an *E. coli* strain harbouring a plasmid that directs the synthesis of the T4 DNA ligase.

Applications: Cloning of restriction fragments, linking linkers and adapters to blunt-ended DNA, gene (gene fragments) synthesis.

Cohesive End Ligation: For most cohesive end ligations, a 30 minute incubation at 20°C is sufficient. Incubations at 16°C for 4 - 16 hours are routinely used for the majority of applications.

Ligation of blunt ends and single-base pair overhang fragments requires more enzyme to achieve the same extent of ligation as cohesive end DNA fragments. Ligation may be enhanced by addition of PEG, or by reducing the rATP concentration. ATP is an essential cofactor for the reaction.

The storage buffer contains 50 mM KCl, 10 mM Tris · HCl (pH 7.8), 10 mM MgCl₂, 10 mM DTT, and 1 mM ATP

Unit definition: One unit is defined as the amount of enzyme required to give 50 % ligation of Hind III fragments of lambda DNA in 30 minutes at 16°C at a 5'-termini concentration of 0.12 µM (300 µg/ml). One Cohesive End Ligation Unit equals 0.015 Weiss units. One Weiss unit equals 67 Cohesive End Ligation Units. Each lot of T4 DNA ligase is tested for the absence of endonucleases/exonucleases and in a Blue/White cloning assay.

T4 Polynucleotide kinase

B

Polynucleotide kinase, T4, PNK

HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

- ◆ supplied with reaction buffer (10X)

◆ Application

- End-labeling DNA or RNA.
- addition of 5'-phosphates to oligonucleotides
- removal of 3' phosphoryl groups.

Specification:

Endo-/Exonucleases not detectable
Phosphatases, RNases not detectable
Concentration 5000 - 30000 U/ml

Order-No.	Quantity
A5213,0500	500 U
A5213,2500	2500 U

Comment: T4 polynucleotide kinase (PNK) catalyzes the transfer of terminal phosphate groups from the gamma position of rATP to the 5'-hydroxyl terminus of polynucleotides (double- and single-stranded DNA or RNA) and nucleoside 3'-monophosphates. PNK also catalyzes the exchange of 5'-terminal phosphates and exhibits 3'-phosphatase activity. The **Reaction Buffer (10X)** contains 100 mM Tris · HCl (pH 7.5), 10 mM MgCl₂ and 5 mM DTT. The efficiency of blunt and recessed 5'-end phosphorylation can be improved by heating to 70°C for 5 minutes, then chilling on ice prior to kinase addition. Since polynucleotide kinase is inhibited by ammonium ions, DNA should not be precipitated in the presence of ammonium ions prior to phosphorylation. The storage buffer is composed of 50 mM KCl, 10 mM Tris · HCl (pH 7.4), 0.1 mM EDTA, 1 mM dithiothreitol, 0.1 µM ATP and 50 % glycerol.

Unit Definition: One unit is the amount of enzyme catalyzing the transfer of 1 nmol of phosphate in 30 minutes at 37°C.

T4 RNA Ligase

B

Ligase, T4 RNA
expressed in *E. coli*

M = 43.5 kDa
HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

- ◆ supplied with reaction buffer (10X)

◆ Application

- Labeling of 3'-termini of RNA with 5'-[³²P] pCp.
- Inter- and intramolecular linking of RNA and DNA molecules.
- Synthesis of single-stranded oligodeoxyribonucleotides.
- Incorporation of unnatural amino acids into proteins .

Specification:

Endo-/Exonucleases not detectable
Concentration 50000 - 100000
Units/ml

Order-No.	Quantity
A5203,1000	1000 U
A5203,5000	5000 U

Comment: T4 RNA Ligase catalyzes the ATP-dependent ligation of single-stranded RNA or DNA to the 5'-phosphoryl termini of single-stranded RNA or DNA . Substrates include single-stranded RNA and DNA as well as dinucleoside pyrophosphates. The source of this purified enzyme is an *E. coli* strain containing the plasmid with the T4 ligase gene. The composition of the 1X T4 RNA Ligase buffer is 50 mM Tris · HCl (pH 7.8), 10 mM MgCl₂, 10 mM DTT and 1 mM ATP. Incubate at 37°C.

Unit Definition: One unit is defined as the amount of enzyme required to convert 1 pmol of AMP to an acid-insoluble form in 10 minutes at 25°C. T4 RNA Ligase may be heat-inactivated at either 65°C for 15 minutes or boiling for 2 minutes.

Tacrolimus see FK506 BioChemica Page 351

Tacrolimus see FK506 BioChemica Page 351

TAE buffer

Tris-Acetate-EDTA buffer

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

TAE buffer (50X) Molecular biology grade

50X concentrated aqueous solution		WGK: 1	
Composition: Acetic acid glacial (A3686) . 60.05 g/L (1 M) EDTA · Na ₂ · 2H ₂ O (A2937) . 18.61 g/L (0.05 M) Tris (A2264) . 242.30 g/L (2 M)		Specification: DNases/RNases/Proteases not detectable pH (20°C; H ₂ O) . 8.5 ± 0.2	
		Order-No. A4686,0500 A4686,1000	Quantity 500 ml 1 L

TAE buffer (50X)

50X concentrated aqueous solution		WGK: 1	
Composition: Acetic acid glacial (A3701) . 60.05 g/L (1 M) EDTA · Na ₂ · 2H ₂ O (A1104) . 18.61 g/L (0.05 M) Tris (A1086) . 242.28 g/L (2 M)		Specification: pH (20°C; H ₂ O) . 8.5 ± 0.2	
		Order-No. A1691,0500 A1691,1000 A1691,5000CT A1691,9010CT	Quantity 500 ml 1 L 5 L 10 L

TAE buffer (10X) Molecular biology grade

10X concentrated aqueous solution			
Composition: Acetic acid glacial (A3686) . 12.01 g/L (0.20 M) EDTA · Na ₂ · 2H ₂ O (A2937) . 3.72 g/L (0.01 M) Tris (A2264) . 48.46 g/L (0.40 M)		Specification: DNases/RNases/Proteases not detectable pH (20°C; H ₂ O) . 8.5 ± 0.2	
		Order-No. A4227,0500 A4227,1000 A4227,5000	Quantity 500 ml 1 L 5 L

TAE buffer (10X)

10X concentrated aqueous solution			
Composition: Acetic acid glacial (A3701) . 12.01 g/L (0.20 M) EDTA · Na ₂ · 2H ₂ O (A1104) . 3.72 g/L (0.01 M) Tris (A1086) . 48.46 g/L (0.40 M)		Specification: pH (20°C; H ₂ O) . 8.5 ± 0.2	
		Order-No. A1416,0500 A1416,1000 A1416,5000CT A1416,9010CT	Quantity 500 ml 1 L 5 L 10 L

Literature: (1) Loening, U.E. (1967) *Biochem. J.* **102**, 251-257

(2) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87

(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

The fractionation of high-molecular-weight Ribonucleic acid by polyacrylamide-gel electrophoresis.

Electrophoresis in agarose and acrylamide gels.

Comment: TAE buffer is the most commonly used electrophoresis buffer for agarose gels. Originally, it was developed for polyacrylamide gels with a slightly different composition (40 mM Tris; 20 mM NaOAc; 2 mM EDTA · Na₂; pH 7.8 at +5°C with acetic acid; ref. 1). Today, this buffer is used in a modified form (40 mM Tris acetate; 1 mM EDTA · Na₂; -pH 8.5). TAE has a lower buffer capacity than TBE, but double-stranded linear DNA migrates 10 % faster with the same resolution through TAE-containing agarose gels. The working concentration is 1X or 0.5X. Store TAE at room temperature.

D(-)-Tagatose BioChemica

Melting point 135°C	C ₆ H ₁₂ O ₆ M = 180.16 g/mol CAS-No.: 87-81-0 HS-No.: 29400000 EC-No.: 201-772-3	Storage: RT	
Specification: Assay min. 99 % α20°C/D; 5 %; H ₂ O -6.0' ± 2' Heavy metals (as Pb) max. 0.001 %		Loss on drying max. 0.5 % Sulfated ash max. 0.1 %	
		Order-No. A6891,0250 A6891,0001	Quantity 250 mg 1 g

Talc powdered, pure Ph. Eur., USP

C

Melting point	 approx. 800°C	3MgO · 4SiO ₂ · xH ₂ O CAS-No.: 14807-96-6 HS-No.: 25262000 EC-No.: 238-877-9	Storage: RT LGK: 10 - 13	WGK: nwg

Specification:

Absence of asbestos	 complies	pH	 7.0 - 9.0
Acidic/alkaline react. subst.	 complies	Al	 max. 2 %
Aerobic bacteria and fungi	 max. 100 CFU/g	Ca	 max. 0.9 %
Identity	 complies	Fe	 max. 0.25 %
Loss on ignition	 max. 7.0 %	Mg	 17.0 - 19.5 %
Water-soluble subst.	 max. 0.1 %	Pb	 max. 0.001 %

Order-No.	Quantity
A0620,1000	1 kg
A0620,10006	6 x 1 kg
A0620,5000	5 kg
A0620,9010	10 kg
A0620,9025	25 kg

D-(+)-Talose BioChemica

B

Melting point	 130°C	C ₆ H ₁₂ O ₆ M = 180.16 g/mol CAS-No.: 2595-98-4 HS-No.: 29400000 EC-No.: 219-996-5	Storage: RT

Specification:

Assay	 min. 99 %	Loss on drying	 max. 0.5 %
α20°C/D; 1 %, H ₂ O; 3 h	 +21.0° ± 1°	Sulfated ash	 max. 0.1 %
Heavy metals (as Pb)	 max. 0.001 %		

Order-No.	Quantity
A6900,0100	100 mg
A6900,0250	250 mg

Tannic acid pure Ph. Eur., USP

C

Solubility (20°C)	 250 g/L (H ₂ O)	CAS-No.: 1401-55-4 HS-No.: 32019090 EC-No.: 215-753-2	Storage: RT LGK: 10 - 13	WGK: 1

Specification:

Appearance of solution	 complies	Sulfated ash	 max. 0.1 %
Heavy metals (as Pb)	 max. 0.004 %	Dextrines, rubber, salts, sugar	 complies
Identity	 complies	As	 max. 0.0003 %
Loss on drying	 max. 12 %		
Organic vol. impurities	 complies		
Resinous matter	 complies		
Resins	 complies		

Order-No.	Quantity
A3619,0250	250 g
A3619,0500	500 g
A3619,1000	1 kg
A3619,10006	6 x 1 kg
A3619,5000	5 kg
A3619,9010	10 kg

TAPS

Melting point	 230 - 235°C (dec.)	C ₇ H ₁₇ NO ₆ S M = 243.28 g/mol CAS-No.: 29915-38-6 HS-No.: 29221985 EC-No.: 249-954-1	Storage: RT LGK: 10 - 13 Disposal: 3
Useful pH range	 pH 7.7 - 9.1		
pK _a (20°C)	 8.55		

TAPS Molecular biology grade

B

Specification:

DNases/RNases/Proteases	not detectable	A (1 cm/10 % in H ₂ O)	
Assay (titr.)	 min. 99 %	260 nm	 max. 0.05
Fe	 max. 0.0001 %	280 nm	 max. 0.03
Pb	 max. 0.001 %		

Order-No.	Quantity
A4740,0050	50 g
A4740,0100	100 g

TAPS Buffer grade

B

Specification:

Assay (titr.)	 min. 99 %	A (1 cm/10 % in H ₂ O)	
Heavy metals (as Pb)	 max. 0.001 %	260 nm	 max. 0.05
Loss on drying	 max. 1 %	280 nm	 max. 0.03

Order-No.	Quantity
A1082,0100	100 g
A1082,0250	250 g
A1082,0500	500 g
A1082,1000	1 kg

Literature: (1) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
(2) Ferguson, W.J. et al. (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers.
Hydrogen ion buffers for biological research.

TAPSO Buffer grade

B

N-[Tris-(hydroxymethyl)-methyl]-3-amino-2-hydroxypropanesulfonic acid

$C_7H_{17}NO_7S$
 $M = 259.28$ g/mol
CAS-No.: 68399-81-5
HS-No.: 29221985
EC-No.: 269-993-8

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point 225 - 230°C (dec.)
Useful pH range pH 7.0 - 8.2
 pK_a (20°C) 7.7

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 0.5 %
As max. 0.0001 %
Cu max. 0.0002 %
Fe max. 0.002 %

Mg max. 0.0002 %
Pb max. 0.0001 %

A (1 cm/0.1 M in H_2O)
260 nm max. 0.05
280 nm max. 0.01

Order-No.	Quantity
A1083,0025	25 g
A1083,0100	100 g
A1083,0250	250 g

Literature: (1) Ferguson, W.J. et al. (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers for biological research.

Taq DNA Polymerase

B

from *Thermus aquaticus*

HS-No.: 35079090

Storage: -20°C

- supplied with reaction buffer (10X)
- Unit definition: see comment.

Specification:

Concentration 5000 Units/ml

Order-No.	Quantity
A5186,0500	500 U
A5186,2500	2500 U
A5186,10000	10000 U

Literature: (1) Kaledin, A.S. et al. (1980) *Biokhimiya* **45**, 644 (Rus)

Comment: *Taq* DNA Polymerase is a thermostable enzyme of approximately 94 kDa isolated from the eubacterium *Thermus aquaticus* strain YT-1 (1). This unmodified enzyme replicates DNA at 72°C. The enzyme catalyzes the polymerization of nucleotides into duplex DNA in the 5' → 3' direction in the presence of magnesium ions. Besides it possesses a 5' → 3' exonuclease activity. The enzyme is highly purified and is free of nonspecific endo- or exonucleases. *Taq* DNA polymerase adds extra 3'-dA nucleotide(s) overhangs to their reaction products. For optimal performance, the enzyme may require a minimal concentration of DNA in the reaction mixture. Some of the template may be bound by inhibitors of the wall of the reaction tube. To prevent this, e.g. herring sperm DNA may be added to achieve a total DNA concentration of at least 40 pg/μl. The herring sperm DNA will block the surface and the template will be available for the polymerase.

The storage buffer is 10 mM Potassium phosphate (pH 7.4), 0.1 mM EDTA, 50 % glycerol, 0.1 % Triton® X-100 and 0.1 % Tween® 20. The **Reaction buffer (10X)** is supplied with the enzyme either incomplete (without Magnesium) 160 mM $(NH_4)_2SO_4$, 670 mM Tris · HCl (pH 8.8), 0.1 % Tween® 20 or complete with 25 mM $MgCl_2$. The recommended magnesium concentration is 1.5 mM - 6 mM. The enzyme is stable at room temperature for at least 3 days without any loss of activity.

Unit definition: One unit of activity is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble DNA fraction in 30 minutes at 72°C

Taq DNA Polymerase DNA-free

B

[E.C. 2.7.7.7]

HS-No.: 35079090

Storage: -20°C

from *Thermus aquaticus*, recombinant
(*E. coli*)

- supplied with reaction buffer (10X)
- Unit definition: see comment.

Specification:

Concentration 5000 Units/ml
Bacterial DNA not detectable (min.
40 PCR cycle)

Order-No.	Quantity
A5434,0100	100 U
A5434,0500	500 U

Comment: Performance and purity tests: All of the buffers and enzymes used are tested to be DNA-free. Tests for bacterial DNA are performed using universal 16S rDNA primers. In addition, performance and purity of all reagents used are tested with dilutions of a standard DNA template.

Unit definition: One unit of enzyme incorporates 10 nmoles of dNTPs into an acid-insoluble form in 30 min at 72°C under standard assay conditions, using a DNA template.

SuperHot Taq DNA Polymerase

B

HS-No.: 35079090

Storage: -20°C

- supplied with reaction buffer (10X)
- Unit definition: see comment
- testset for Real Time PCR

Specification:

Concentration 4500 - 5000 U/ml

Order-No.	Quantity
A5231,0200	200 U
A5231,1000	1000 U

Comment: SuperHot *Taq* DNA Polymerase is an optimized mixture of *Taq* DNA Polymerase and anti-*Taq* DNA polymerase monoclonal antibodies. The Antibodies block the polymerase activity during the set-up of the PCR reactions at room temperature (20 - 22°C). The inhibition of the *Taq* DNA polymerase is completely reversed when the temperature is above 70°C. The PCR products obtained with SuperHot *Taq* are free from nonspecific products and from primer-dimers. The recommended **Reaction Buffer (1X)** is 16 mM $(NH_4)_2SO_4$, 67 mM Tris · HCl (pH 8.8); 1.5 - 7 mM $MgCl_2$, 0.01 % Tween-20. The **Reaction buffer** supplied with the enzyme is a 10X concentrate of the recommended buffer. The storage buffer contains 10 mM Tris · HCl (pH 7.0); 50 mM KCl; 0.1 mM EDTA; 50 % glycerol.

Recommended PCR conditions: Use the PCR conditions optimized for *Taq* DNA polymerase. In case of low amount of DNA template, additional cycles may be used

Applications: Complex genomic or cDNA templates, low copy number targets, large numbers of thermal cycles, multiplex PCR.

Unit definition: One unit of activity is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble DNA fraction in 30 minutes at 72°C.

Taq DNA Polymerase Reaction buffer (10X) complete

B

HS-No.: 38220000

Storage: RT

Composition:

Ammonium sulfate	160 mM
Magnesium chloride	25 mM
Tris · HCl (pH 8.8)	670 mM
Tween® 20	0.1 % (w/v)

Order-No.	Quantity
A4942,0001	1 ml
A4942,0005	5 ml

Comment: This buffer for *Taq* DNA polymerase can be used for PCR, primer extension and other applications using *Taq* DNA polymerase, *Taq*-red DNA polymerase, *Taq*-T DNA polymerase, *Klein Taq* DNA polymerase, SuperHot *Taq* DNA Polymerase. The buffer can be stored at room temperature. Meanwhile, we recommend to store the buffer aliquoted, at -20°C.
Attention The buffer contains 25 mM MgCl₂!

Taq DNA Polymerase Reaction buffer (10X) incomplete

B

HS-No.: 38220000

Storage: RT

Composition:

Ammonium sulfate	160 mM
Tris · HCl (pH 8.8)	670 mM
Tween® 20	0.1 % (w/v)

Order-No.	Quantity
A4897,0001	1 ml
A4897,0005	5 ml

Comment: This buffer for *Taq* DNA polymerase can be used for PCR, primer extension and other applications using *Taq* DNA polymerase, *Taq*-red DNA polymerase, *Taq*-T DNA polymerase, *Klein Taq* DNA polymerase, SuperHot *Taq* DNA Polymerase. The buffer can be stored at room temperature. Meanwhile, we recommend to store the buffer aliquoted, at -20°C.
Attention The buffer does not contain MgCl₂! Add appropriate amount of MgCl₂ when setting-up the reaction.

SuperHot Taq-red DNA Polymerase

B

HS-No.: 35079090

Storage: -20°C

◆ *Taq* Polymerase for HotStart PCR with a dye additive.

- ◆ Application
- complex genomic or cDNA templates;
- low copy number targets
- many cycles
- multiplex PCR

◆ supplied with reaction buffers (10X)

Specification:

Concentration 5000 Units/ml

Order-No.	Quantity
A5244,0200	200 U

Comment: SuperHot *Taq*-red DNA Polymerase is a *Taq* DNA polymerase with a colour additive and anti-*Taq* antibodies designed for HotStart PCR. The dye in the solution of the enzyme facilitates the visual control of the reaction mixture preparation. The colour additive does not influence the performance of the enzyme. The mixture will be supplied in storage buffer with the composition 10 mM Tris · HCl (pH 7.0), 50 mM KCl, 0.1 mM EDTA, and 50 % glycerol. The product may be used under PCR conditions optimized for *Taq* DNA polymerase. In the case of low amount of DNA template, additional cycles may be used. SuperHot *Taq*-red DNA Polymerase may be applied in assays with complex genomic or cDNA templates, low copy number targets, large numbers of thermal cycles or multiplex PCR. Two **Reaction buffers (10X)** will be supplied: either 'complete' (160 mM (NH₄)₂SO₄, 670 mM Tris · HCl (pH8.8), 0.1 % Tween® 20, 25 mM MgCl₂) or 'incomplete' (160 mM (NH₄)₂SO₄, 670 mM Tris · HCl (pH8.8), 0.1 % Tween® 20).
Unit definition: One unit is defined as the amount of the enzyme required to incorporate 10 nmoles of dNTP into an acid-insoluble DNA fraction in 30 minutes at 72°C.

Klein Taq DNA Polymerase

B

HS-No.: 35079090

Storage: -20°C

Specification:

Endo-/Exonucleases, Nickases
..... not detectable
Concentration 5000 - 10000 U/ml

Order-No.	Quantity
A5209,0200	200 U
A5209,1000	1000 U

Comment: *Klein Taq* is a derivative of *Taq* DNA polymerase. It is a 5'-exo-minus N-terminally truncated *Thermus aquaticus* DNA polymerase. Expressed from a gene construct in *E. coli*, translation initiates at Met236, bypassing the 5'-3' exonuclease domain of the DNA polymerase-encoding gene. The enzyme reveals a highly active and even more heat-stable DNA polymerase activity in comparison with *Taq* DNA polymerase. The optimal range of the Mg²⁺ concentration for *Klein Taq* is broader than that for the majority of thermostable polymerases. This feature permits to optimize reaction conditions easier than for other polymerases. Repeated exposure to 98°C does not diminish the enzyme activity. Significant activity remains even after exposure to 99°C.
The mutation rate during polymerization is twofold lower for *Klein Taq* as compared to the full-length *Taq* DNA polymerase. *Klein Taq* has a very low 'background' ability to extend a mismatched 3'-oligonucleotide end making it suitable for mutation analysis with mutation-specific oligonucleotides. The storage buffer consists of 10 mM potassium phosphate (pH 7.0), 100 mM NaCl, 0.5 mM EDTA, 1 mM DTT, 0.01 % Tween® 20, and 50 % glycerol. The Reaction buffer (10X; without Mg²⁺) is 160 mM (NH₄)₂SO₄, 670 mM Tris · HCl (pH 8.8), 0.1 % Tween®-20. The product is tested for the absence of endonucleases/ nickases and exonucleases.
• **Unit definition:** One unit of activity is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble DNA fraction in 30 minutes at 72°C.

SuperHot Taq Master Mix "HotStart"

B

HS-No.: 38220000

Storage: -20°C

- Application:
- PCR
 - Primer extension
 - Multiplex PCR
 - Low-copy targets PCR
 - Real-time PCR

Specification:	Order-No.	Quantity
Endo-/Exodeoxyribonucleases	A5241,0100	100 Tests
..... not detectable	A5241,0500	500 Tests

Comment: The 2X SuperHot Taq Master Mix "HotStart" is an optimized ready-to-use PCR mixture of Taq DNA Polymerase, antibodies directed against Taq DNA polymerase, PCR buffer, MgCl₂ and dNTPs. This 2X PCR Master Mix contains all components for PCR, except DNA template and primers. The mixture was shown to be effective for Real Time PCR.

The 2X SuperHot Taq Master Mix "HotStart" is tested in the amplification of a single-copy gene of mouse genomic DNA. **Endodeoxyribonuclease assay:** No detectable conversion of covalently closed circular DNA to nicked DNA was observed after incubation of 25 µl of 2x SuperHot Taq Master Mix "HotStart" with 1 µg of pUC19 DNA in 50 µl for 4 hours neither at 37°C nor at 70°C. **Associated activities:** Endonuclease and exonuclease activities were not detectable after 2 hours incubation of the mixture with 0.22 mg of EcoR I digested lambda DNA at 72°C in the presence of 15 - 20 units of enzyme in SuperHot Taq Master Mix "HotStart".

Composition (2X buffer):

- Taq DNA Polymerase (recombinant) in reaction buffer: 0.05 units/µl
- Antibodies to Taq DNA polymerase, concentration adjusted for the effective inhibition of polymerase activity at 37°C
- 32 mM (NH₄)₂SO₄
- 130 mM Tris · HCl (pH 8.8) at 25°C
- 0.02 % Tween® 20
- 3 mM MgCl₂
- dNTPs (dATP, dCTP, dGTP, dTTP): 0.4 mM each.

Anti-Taq DNA Polymerase, monoclonal antibody

B

HS-No.: 35079090

Storage: -20°C
Shipment: wet ice

Unit/mg ratio: 2300 U of specific activity correspond to 1 mg of antibody.

Specification:	Order-No.	Quantity
Assay (SDS-PAGE) min. 95 %	A5192,00001	0.1 mg
Concentration 0.1 - 4.0 mg/ml	A5192,00005	0.5 mg

Comment: The monoclonal anti-Taq DNA Polymerase antibodies were derived from a hybridoma cell line. Anti-Taq antibodies are mouse IgG type. The storage buffer is 10 mM Tris · HCl (pH 7.0 at 22°C); 50 mM KCl; 0.1 mM EDTA; 50 % glycerol.

Associated activities: No conversion to the covalently closed circular DNA to the nicked or linear form was observed after incubation of 1 µg of pUC19 DNA with antibodies in a final concentration of 2.5 mg/ml in 20 µl of reaction mixture containing 25 mM Tris · HCl (pH 7.9); 100 mM NaCl; 10 mM MgCl₂ after 16 hours at 37°C.

Unit definition: One unit of activity is defined as the amount of antibody required to block 50 % of the activity of 1 µg Taq DNA polymerase at 37°C.

(2R,3R)-(+)-Tartaric acid see L(+)-Tartaric acid Page 795

L(+)-Tartaric acid

(2R,3R)-(+)-Tartaric acid

α20°C/D; 20 %, H₂O . +12° - +13°
Melting point 170°C
Solubility (20°C) 1390 g/L

C₄H₆O₆
M = 150.09 g/mol
CAS-No.: 87-69-4
HS-No.: 29181200
EC-No.: 201-766-0

Storage: RT
LGK: 10 - 13
Disposal: 4

WGK: 1
Warning
H319
P305+P351+P338

L(+)-Tartaric acid p. A.

C

Specification:	Order-No.	Quantity
Assay (titr.) min. 99.5 %	A2475,0250	250 g
Chloride max. 0.0005 %	A2475,0500	500 g
Oxalate max. 0.03 %	A2475,1000	1 kg
Phosphate max. 0.001 %	A2475,10006	6 x 1 kg
Sulfate max. 0.005 %	A2475,5000	5 kg
Ca max. 0.0005 %	A2475,9010	10 kg
Fe max. 0.0005 %	A2475,9025	25 kg
Pb max. 0.0005 %		

L(+)-Tartaric acid for racemic resolution

C

Specification:	Order-No.	Quantity
Assay (titr.) min. 99 %	A0465,0500	500 g
Chloride max. 0.001 %	A0465,1000	1 kg
Sulfate max. 0.005 %	A0465,10006	6 x 1 kg
Cu max. 0.0005 %	A0465,5000	5 kg
Fe max. 0.0005 %	A0465,9010	10 kg
Pb max. 0.0005 %		

L(+)-Tartaric acid pure Ph. Eur.

C

Specification:

Assay (titr.)	99.5 - 101.0 %	Oxalic acid	max. 0.035 %
α 20°C/D; 20 %, H ₂ O	+12.0' - +12.8'	Chloride	max. 0.01 %
Appearance of solution	complies	Sulfate	max. 0.015 %
Heavy metals (as Pb)	max. 0.001 %	Ca	max. 0.02 %
Identity	complies		
Loss on drying	max. 0.2 %		
Sulfated ash	max. 0.1 %		

Order-No.	Quantity
A2485,0500	500 g
A2485,1000	1 kg
A2485,10006	6 x 1 kg
A2485,5000	5 kg
A2485,9010	10 kg
A2485,9025	25 kg

L(+)-Tartaric acid - Solution 20 % p. A.

C

Density (d 20°C/4°C) .. 1.085 HS-No.: 29181200 Storage: RT

Composition:

Tartaric acid 200 g/L (in H₂O)

Specification:

Chloride	max. 0.0005 %	Fe	max. 0.0005 %
Oxalate	max. 0.02 %	Pb	max. 0.0005 %
Sulfate	max. 0.005 %		
Ca	max. 0.0005 %		

Order-No.	Quantity
A2101,0500	500 ml
A2101,1000	1 L
A2101,10006	6 x 1 L

Tartaric acid disodium salt dihydrate see d/-Sodium tartrate dihydrate Page 753

L(+)-Tartaric acid monosodium salt see Sodium hydrogen tartrate monohydrate pure Page 737

Taurine

AES, 2-Aminoethanesulfonic acid

C₂H₇NO₃S

Storage: RT

Melting point 316 - 320°C (dec.)

M = 125.15 g/mol

LGK: 10 - 13

Useful pH range pH 8.4 - 9.6

CAS-No.: 107-35-7

pK_a (20°C) 9.0

HS-No.: 29211999

EC-No.: 203-483-8

Taurine Cell culture grade

B

Specification:

Pyrogen test	complies	Sulfate	max. 0.01 %
Assay (titr.)	min. 99 %	As	max. 0.001 %
Ammonium	max. 0.02 %	Fe	max. 0.0001 %
Chloride	max. 0.01 %	Pb	max. 0.0001 %

Order-No.	Quantity
A4235,0100	100 g
A4235,0500	500 g
A4235,1000	1 kg

Taurine BioChemica

B

Specification:

Assay (titr.)	min. 99 %	Chloride	max. 0.01 %	A (1 cm/0.1 M in H ₂ O)	
Heavy metals (as Pb)	max. 0.001 %	Sulfate	max. 0.01 %	260 nm	max. 0.05
Loss on drying	max. 0.2 %	As	max. 0.0002 %	280 nm	max. 0.03
Residue on ignition	max. 0.1 %				
Ammonium	max. 0.02 %				

Order-No.	Quantity
A1141,0100	100 g
A1141,0500	500 g
A1141,1000	1 kg

Literature: (1) Wright, C.E. et al. (1986) Ann. Rev. Biochem. 55, 427-453

Taurine: biological update.

(+)-Taxifolin HPLC grade

Dihydroquercetin, Distylin
from *Pseudozuga menziesii*

C₁₅H₁₂O₇

Storage: 2-8°C

M = 304.24 g/mol

CAS-No.: 480-18-2

HS-No.: 29420000

LGK: 10 - 13

(+)-Taxifolin HPLC grade

B

Specification:

Assay min. 99 %

Order-No.	Quantity
A3422,0020	20 mg
A3422,0020DOC	20 mg
A3422,0050	50 mg
A3422,0050DOC	50 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

(+)-Taxifolin pure

B

Specification:

Assay min. 90 %

Order-No.	Quantity
A6910,0200	200 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Taxol BioChemica

B

Paclitaxel
from *Taxus brevifolia*

$C_{47}H_{51}NO_{14}$
 $M = 853.91 \text{ g/mol}$
CAS-No.: 33069-62-4
HS-No.: 29329900

Storage: -20°C
protected from light

Danger
H317-H312-H341-H373-H332-H334-
H335-H315-H318-H302-H361f
P262-P305+P351+P338-P280-
P342+P311-P260



Melting point 200 - 220°C (dec.)
Solubility (10 mg/ml MeOH)
..... clear, colorless

Specification:

Assay min. 95 %
 λ_{max} 227, 273 nm

Order-No.	Quantity
A4667,0005	5 mg
A4667,0010	10 mg
A4667,0025	25 mg

Comment: Taxol is an antineoplastic agent from the plant *Taxus brevifolia*. it stabilizes the assembly of microtubuli and inhibits the disassembly, leading to cell death. It is soluble in DMSO and ethanol.

TB see Thymol blue Page 815

TBA see Thiobarbituric acid BioChemica Page 812

TBE buffer

Tris-Borate-EDTA buffer

HS-No.: 38220000

Storage: RT

TBE buffer (10X) Molecular biology grade

B

10X concentrated aqueous solution

Composition:

Boric acid (A2940) 55.03 g/L (0.89 M)
EDTA- $\text{Na}_2 \cdot 2\text{H}_2\text{O}$ (A2937) .. 7.44 g/L (0.02 M)
Tris (A2264) 107.81 g/L (0.89 M)

Specification:

DNases/RNases/Proteases
..... not detectable
pH (20°C; H_2O) 8.3 ± 0.2

Order-No.	Quantity
A3945,0500	500 ml
A3945,1000	1 L

TBE buffer (10X) Fluorescence grade

B

10X concentrated aqueous solution

Composition:

Boric acid 55.03 g/L (0.89 M)
EDTA- $\text{Na}_2 \cdot 2\text{H}_2\text{O}$ 7.44 g/L (0.02 M)
Tris 107.81 g/L (0.89 M)

Specification:

pH (20°C; H_2O) 8.3 ± 0.2
A (1 cm/water HPLC grade)
450 nm max. 0.01

Order-No.	Quantity
A2534,0500	500 ml
A2534,1000	1 L

TBE buffer (10X)

B

10X concentrated aqueous solution

Composition:

Boric acid (A1097) 55.03 g/L (0.89 M)
EDTA- $\text{Na}_2 \cdot 2\text{H}_2\text{O}$ (A1104) .. 7.44 g/L (0.02 M)
Tris (A1086) 107.81 g/L (0.89 M)

Specification:

pH (20°C; H_2O) 8.3 ± 0.2

Order-No.	Quantity
A0972,0500	500 ml
A0972,1000	1 L
A0972,5000CT	5 L
A0972,5000PE	5 L
A0972,9010CT	10 L
A0972,9010PE	10 L

TBE buffer (5X) Molecular biology grade

B

5X concentrated aqueous solution

Composition:

Boric acid (A2940) 27.52 g/L (0.445 M)
EDTA- $\text{Na}_2 \cdot 2\text{H}_2\text{O}$ (A2937) .. 3.72 g/L (0.01 M)
Tris (A2264) 53.91 g/L (0.445 M)

Specification:

DNases/RNases/Proteases
..... not detectable
pH (20°C; H_2O) 8.3 ± 0.2

Order-No.	Quantity
A4228,1000	1 L
A4228,5000CT	5 L
A4228,5000PE	5 L

TBE buffer (5X)

B

5X concentrated aqueous solution

Composition:

Boric acid (A1097) 27.52 g/L (0.445 M)
EDTA-Na₂ · 2H₂O (A1104) . . 3.72 g/L (0.01 M)
Tris (A1086) 53.91 g/L (0.445 M)

Specification:

pH (20°C; H₂O) 8.3 ± 0.2

Order-No.

Quantity

A1417,1000 1 L
A1417,5000CT 5 L
A1417,5000PE 5 L
A1417,9010CT 10 L
A1417,9010PE 10 L

Literature: (1) Peacock, A.C. & Dingman, C.W. (1968) *Biochemistry* 7, 668-674

Molecular weight estimation and separation of ribonucleic acid by electrophoresis in Agarose-Acrylamide composite gels.

(2) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* 152, 61-87

Electrophoresis in agarose and acrylamide gels.

(3) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Page A1.17. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (2001) *Current Protocols in Molecular Biology*, page A.2.5 (Suppl. 40) Greene Publishing & Wiley-Interscience, New York.

Comment: TBE buffer is the electrophoresis buffer for polyacrylamide gels and agarose gels. TBE has a higher buffering capacity than TAE. Normally, it is applied in a concentration of 1X for polyacrylamide gels and 0.5X for agarose gels and 'band shifts' (gel mobility shift assay). The absorption spectrum of 1X TBE buffer shows no significant absorption in the wavelength range of SYBR® Green applications. TBE is prepared as a 10X or 5X concentrate and stored at room temperature. During long-term storage, a precipitate may form in the 10X concentrate. Filtration (0.22 µm) may slow down the formation of the precipitate.

TBE buffer powder

Tris-Borate-EDTA buffer

HS-No.: 38210000

Storage: RT

Warning
H315-H319



TBE buffer (10X) powder

B

Powder for 10X concentrated aqueous solution (170.28 g/L)

Composition:

Boric acid (A1097) 55.03 g/L (0.89 M)
EDTA-Na₂ · 2H₂O (A1104) . . 7.44 g/L (0.02 M)
Tris (A1086) 107.81 g/L (0.89 M)

Specification:

pH (20°C; H₂O) 8.3 ± 0.2

Order-No.

Quantity

A4348,1000 1 L
A4348,5000 5 L
A4348,9010 10 L

* Dissolve powder completely! Don't dissolve portions of the powder mixture.

TBE buffer (5X) powder

B

Powder for 5X concentrated aqueous solution (85.14 g/L)

Composition:

Boric acid (A1097) 27.52 g/L (0.445 M)
EDTA-Na₂ · 2H₂O (A1104) . . 3.72 g/L (0.01 M)
Tris (A1086) 53.91 g/L (0.445 M)

Specification:

pH (20°C; H₂O) 8.3 ± 0.2

Order-No.

Quantity

A4394,1000 1 L
A4394,5000 5 L
A4394,9010 10 L

* Dissolve powder completely! Don't dissolve portions of the powder mixture.

TBG see Thyroxin Binding Globulin (TBG), human Page 816

TB-Medium - Powder (Terrific Broth)

B

Powder for the preparation of liquid TB - Medium.

HS-No.: 38210000

Storage: RT

Composition:

Tryptone (A1553) 12 g/L
Yeast extract (A1552) 24 g/L

Order-No.

Quantity

A0974,0100G 100 g
A0974,0500G 500 g
A0974,1000KG 1 kg
A0974,2500KG 2.5 kg
A0974,1000 1 L
A0974,5000 5 L
A0974,9010 10 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of TB-Medium, 36 g of powder are dissolved.

Dissolve 36 g powder in 900 ml of water, then add 4 ml of glycerol (A1123) per liter and autoclave. Before inoculating bacteria, add 100 ml of sterile 10X TB-Phosphate solution (made from TB-Phosphate - Powder 10X Product-No. A0975) and an antibiotic, depending on the plasmid transformed. Autoclave the phosphates separately, because insoluble phosphates (calcium and magnesium) would precipitate. Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive.

TBPA see Prealbumin, human Page 662

TB - Phosphate - Powder (10X)

B

Powder for the preparation of phosphate solution for TB - Medium.

HS-No.: 38210000

Storage: RT

Composition:

K₂HPO₄ (A1042) 125.40 g/L (0.72 mol/L)
KH₂PO₄ (A1043) 23.10 g/L (0.17 mol/L)

Order-No.	Quantity
A0975,1000N	1 L
A0975,5000	5 L

* Dissolve powder completely! Don't dissolve portions of the powder mixture.

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

TBS (Tris-buffered saline) with Phenol red

aqueous solution, autoclaved, sterile

HS-No.: 38220000

Storage: RT

TBS (Tris-buffered saline, 10X) with Phenol red

B

Composition:

KCl (A2939) 2.0 g/L
NaCl (A4256) 80.0 g/L
Phenol red (A0680) 0.15 g/L
Tris (A1086) 30.0 g/L

Specification:

pH (20°C; adjusted with HCl)
..... 7.4 ± 0.2

Order-No.	Quantity
A7016,0500	500 ml
A7016,1000	1 L

TBS (Tris-buffered saline, 1X) with Phenol red

B

Composition:

KCl (A2939) 0.2 g/L
NaCl (A4256) 8 g/L
Phenol red (A0680) 0.015 g/L
Tris (A1086) 3 g/L

Specification:

pH (20°C; adjusted with HCl)
..... 7.4 ± 0.2

Order-No.	Quantity
A3836,0500	500 ml
A3836,1000	1 L

TBS (Tris-buffered saline) (20X) - Powder

B

Tris Buffered Saline (Powder)

HS-No.: 38210000

Storage: RT

Composition:

KCl (A2939) 4.0 g/L
NaCl (A4256) 160 g/L
Tris (A1086) 60 g/L

Order-No.	Quantity
A5001,1000	1 L
A5001,5000	5 L

* Dissolve powder completely! Don't dissolve portions of the powder mixture.

Comment: Dissolve the powder (224 g/L) in distilled water and adjust the pH value to 7.4 with Hydrochloric acid. This products does not contain phenol red.

TC 100 - Insect medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

TC 100 - Insect medium

B

without L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A2033,1000	1 L
A2033,5000	5 L
A2033,9010	10 L
A2033,9050	50 L

TC 100 - Insect medium

B

with L-Glutamine
without Sodium hydrogen carbonate

Order-No.	Quantity
A2017,1000	1 L
A2017,5000	5 L
A2017,9010	10 L
A2017,9050	50 L

TCA - Solution see Trichloroacetic acid - Solutions Page 829

TCEP · HCl see Tris-(2-carboxyethyl)-phosphine hydrochloride *BioChemica* Page 838

TEACl see Tetraethylammonium chloride Page 805

TEAF see Triethylammonium formate buffer pH 6.0 (1 M) Page 832

TEAP see Triethylammonium phosphate buffer pH 3.0 (1 M) Page 833

TE buffer

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

TE buffer (100X) pH 7.5

B

100X concentrated aqueous solution

Composition:

EDTA-Na₂ · 2H₂O (A1104) . . . 37.22 g/L (0.1 M)
Tris (A1086) 121.14 g/L (1 M)

Specification:

pH (20°C; adjusted with HCl)
. 7.5 ± 0.1

Order-No.
A6554,0500
A6554,1000
Quantity
500 ml
1 L

TE buffer (100X) pH 8.0

B

100X concentrated aqueous solution

Composition:

EDTA-Na₂ · 2H₂O (A1104) . . . 37.22 g/L (0.1 M)
Tris (A1086) 121.14 g/L (1 M)

Specification:

pH (20°C; adjusted with HCl)
. 8.0 ± 0.1

Order-No.
A0973,0500
A0973,1000
Quantity
500 ml
1 L

TE buffer (10X) pH 8.0



B

10X concentrated aqueous solution

Composition:

EDTA-Na₂ · 2H₂O (A1104) . . . 3.72 g/L (0.01 M)
Tris (A1086) 12.11 g/L (0.1 M)

Specification:

pH (20°C; adjusted with HCl)
. 8.0 ± 0.1

Order-No.
A8624,0500
A8624,1000
Quantity
500 ml
1 L

TE buffer (1X) pH 7.0

B

Composition:

EDTA · Na₂ · 2H₂O (A1104) . . . 0.372 g/L (1 mM)
Tris (A1086) 1.211 g/L (10 mM)

Specification:

pH (20°C; adjusted with HCl)
. 7.0 ± 0.1

Order-No.
A5180,1000
A5180,5000
Quantity
1 L
5 L

TE buffer (1X) pH 7.4

B

aqueous solution

Composition:

EDTA · Na₂ · 2H₂O (A1104) . . . 0.372 g/L (1 mM)
Tris (A1086) 1.211 g/L (10 mM)

Specification:

pH (20°C; adjusted with HCl)
. 7.4 ± 0.1

Order-No.
A3146,1000
A3146,5000
Quantity
1 L
5 L

TE buffer (1X) pH 7.5

B

aqueous solution

Composition:

EDTA-Na₂ · 2H₂O (A1104) . . . 0.372 g/L (1 mM)
Tris (A1086) 1.211 g/L (10 mM)

Specification:

pH (20°C; adjusted with HCl)
. 7.5 ± 0.1

Order-No.
A3837,1000
A3837,5000
Quantity
1 L
5 L

TE buffer (1X) pH 8.0 Molecular biology grade

B

Composition:

EDTA · Na₂ (A2937) 1 mM
Tris (A2264) 10 mM

Specification:

DNases/RNases/Proteases
. not detectable
pH (20°C; adjusted with HCl)
. 8.0 ± 0.1

Order-No.
A0386,0500
A0386,1000
A0386,10006
Quantity
500 ml
1 L
6 x 1 L

TE buffer (1X) pH 8.0

B

aqueous solution

Composition:

EDTA-Na₂ · 2H₂O (A1104) . . . 0.372 g/L (1 mM)
Tris (A1086) 1.211 g/L (10 mM)

Specification:

pH (20°C; adjusted with HCl)
. 8.0 ± 0.1

Order-No.
A2575,1000
A2575,5000
Quantity
1 L
5 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Page B.20. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: TE-Puffer (pH 8.0) is the standard buffer solution for dissolving and storage of plasmid DNA or oligonucleotides, because nucleic acids are largely protected from degradation.

TE buffer (1X) pH 8.0 low EDTA Molecular biology grade



B

TE buffer with reduced EDTA concentration

Composition:

EDTA · Na₂ (A2937) 0.1 mM
Tris (A2264) 10 mM

Specification:

DNases/RNases/Proteases
..... not detectable
pH (20°C; adjusted with HCl)
..... 8.0 ± 0.1

Order-No.	Quantity
A8569,0500	500 ml
A8569,1000	1 L
A8569,10006	6 x 1 L

TEMED

B

N,N,N',N'-Tetramethylethylenediamine,
TMEDA

C₆H₁₆N₂
M = 116.21 g/mol
CAS-No.: 110-18-9
HS-No.: 29212900
EC-No.: 203-744-6

Storage: 2-8°C
LGK: 3 A
Disposal: 5

Class / PG: 3/II
UN2372
WGK: 1
Danger
H314-H332-H225-H302
P280-P210-P233-P301+P330+P331-
P305+P351+P338



Boiling point 121°C
n 20°C/D 1.417

Specification:

Assay (HPLC) min. 99 %
Identity (IR) complies
Water (K.F.) max. 1 %

Order-No.	Quantity
A1148,0025	25 ml
A1148,0100	100 ml
A1148,0250	250 ml
A1148,0500	500 ml
A1148,1000	1 L

Literature: (1) Needles, H.L. (1970) *Anal. Biochem.* **35**, 533-537
(2) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87
(3) Gomes, A.V. & Barnes, J.A. (1998) *Anal. Biochem.* **260**, 106-108

Effect of solution components on large-pore polyacrylamide gel formation.
Electrophoresis in agarose and acrylamide gels.
Gel electrophoresis of mini gels.

Comment: TEMED was introduced as an enhancer of the polymerisation (cross-linking) of acrylamide and bisacrylamide in gel electrophoresis. It catalyzes the formation of free radicals of the initiator of the polymerisation, ammonium persulfate. If gels are degassed to remove oxygen, add the TEMED after degassing. The working concentration is 50 µl / 100 ml of gel solution. TEMED is stable (< two years), if it is protected from taking up water.

Caution: TEMED is harmful. Handle under a chemical fume hood. Do not breathe fumes!

TEN buffer

B

STE buffer
aqueous solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

EDTA-Na₂ · 2H₂O (A1104) ... 0.372 g/L (1 mM)
Sodium chloride (A1149) ... 8.766 g/L (15 mM)
Tris (A1086) 4.846 g/L (40 mM)

Specification:

pH (20°C; adjusted with HCl)
..... 7.5 ± 0.2

Order-No.	Quantity
A3970,0500	500 ml
A3970,1000	1 L

Comment: Used as lysis buffer for eucaryotic cells, especially in the alkaline lysis protocol for the M13 isolation.

Tentoxin BioChemica



B

Cycloleucyl-N-methylalanyl-glycyl-N-methyl dehydrophenylalanine
from *Alternaria alternata*

C₂₂H₃₀N₄O₄
M = 414.5 g/mol
CAS-No.: 28540-82-1
HS-No.: 29337900

Storage: 2-8°C

Melting point 175 - 180°C

Specification:

Assay (TLC) approx. 98 %
λ_{max} 205, 285 nm
Appearance off white to yellow

..... powder
Solubility (10 mg/ml MeOH; DMSO)
..... clear, colorless

Order-No.	Quantity
A8655,0001	1 mg
A8655,0005	5 mg

Comment: Tentoxin is soluble in Dichloromethane, DMSO.

Terminator removal see DNA Isolation Kits Page 294
2,6-Di-tert.-butyl-4-methylphenol see Butylated hydroxytoluene (BHT) Page 173

TES

B

N-[Tris-(hydroxymethyl)-methyl]-2-aminoethanesulfonic acid

$C_6H_{15}NO_6S$
 $M = 229.25$ g/mol
CAS-No.: 7365-44-8
HS-No.: 29221985
EC-No.: 230-906-3

Storage: RT
LGK: 10 - 13
Disposal: 28

Melting point 225 - 227°C (dec.)
Useful pH range pH 6.8 - 8.2
 pK_a (20°C) 7.5

Specification:

Assay (titr.)	 min. 99 %	A (1 cm/0.1 M in H_2O)
Heavy metals (as Pb)	 max. 0.0001 %	260 nm max. 0.05
Residue on ignition	 max. 0.1 %	
pH (1 %; H_2O)	 4.0 - 5.0	
Loss on drying	 max. 1 %	

Order-No.	Quantity
A1084,0025	25 g
A1084,0100	100 g
A1084,0500	500 g
A1084,1000	1 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
(2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
(3) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers for biological research.
Hydrogen ion buffers.
Hydrogen ion buffers for biological research.

Comment: TES does not interfere with the Folin protein assay.

TES sodium salt Buffer grade

B

N-[Tris-(hydroxymethyl)-methyl]-2-amino-ethanesulfonic acid sodium salt

$C_6H_{14}NNaO_6S$
 $M = 251.20$ g/mol
CAS-No.: 70331-82-7
HS-No.: 29221985
EC-No.: 230-906-3

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay (titr.)	 min. 99 %
Solubility (10 %; H_2O)	 clear, colorless
Loss on drying	 max. 8 %

Order-No.	Quantity
A3277,0025	25 g
A3277,0100	100 g

Testosterone

B

17 β -4-Hydroxyandrostene-3-on

$C_{19}H_{28}O_2$
 $M = 288.43$ g/mol
CAS-No.: 58-22-0
HS-No.: 29372300
EC-No.: 200-370-5

Storage: 2-8°C
LGK: 6.1 B
Disposal: 3

WGK: 1
Danger
H361d-H350
P308+P313-P280-P201



Melting point 153 - 156°C

Specification:

Assay	 min. 99 %
α 20°C/D; 1 %, EtOH	 +110' $\pm$ 2'
Loss on drying	 max. 1 %

Order-No.	Quantity
A0671,0005	5 g
A0671,0010	10 g

3,3',4,4'-Tetraaminobiphenyl tetrahydrochloride see 3,3'-Diaminobenzidine tetrahydrochloride *BioChemica* Page 273
3',3'',5',5''-Tetrabromo-m-cresolsulfonephthalein see Bromocresol green Page 159
2',4',5',7'-Tetrabromofluorescein disodium salt see Eosin Y (C.I. 45380) Page 328
3',3'',5',5''-Tetrabromophenolsulfonephthalein see Bromophenol blue Page 161
3',3'',5',5''-Tetrabromophenolsulfone-phthalein sodium salt see Bromophenol blue sodium salt Page 162
2',4',5',7'-Tetrabromo-4,5,6,7-tetrachlorofluorescein disodium salt see Phloxine B (C.I. 45410) *Microscopy grade* Page 622

Tetrabutylammonium dihydrogen phosphate

$C_{16}H_{38}NO_4P$
 $M = 339.46$ g/mol
CAS-No.: 5574-97-0
HS-No.: 29239000
EC-No.: 226-947-1

Storage: RT
LGK: 10 - 13

hygroscopic

Tetrabutylammonium dihydrogen phosphate HPLC grade

C

Specification:

Assay (titr.)	 min. 99 %	A (1 cm/0.005 M in H_2O)
pH (1 %; H_2O ; 20°C)	 3.0 - 4.5	210 nm max. 0.15
		230 nm max. 0.05
		260 nm max. 0.02

Order-No.	Quantity
A7428,0005	5 g
A7428,0025	25 g

Tetrabutylammonium dihydrogen phosphate

B

Specification:

Assay (titr.)	 min 99 %	Loss on drying	 max. 6 %
Solubility (2 %; H_2O)	 clear, colorless	Halogenide	 max. 0.1 %
pH (1 %; H_2O ; 20°C)	 3.0 - 5.0		

Order-No.	Quantity
A1947,0005	5 g
A1947,0025	25 g

Tetrabutylammonium hydrogen sulfate

Melting range 168 - 172°C

C₁₆H₃₇NO₄S
M = 339.54 g/mol
CAS-No.: 32503-27-8
HS-No.: 29239000
EC-No.: 251-068-5

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1
Warning
H315-H319
P305+P351+P338-P302+P352



Tetrabutylammonium hydrogen sulfate IPC grade

C

Specification:

Assay (titr.) min. 99 %
Solubility (10 %; H₂O) clear, colorless
A (1 cm/0.005 M in water HPLC grade)
220 nm max. 0.10
230 nm max. 0.05
260 nm max. 0.02

Order-No.	Quantity
A1118,0005	5 g
A1118,0010	10 g
A1118,0025	25 g

Literature: (1) Jost, W. et al. (1982) *Anal. Biochem.* **119**, 214-223

(2) Hoffman, N.E. & Liao, J.C. (1977) *Anal. Chem.* **49**, 2231-2234

Reverse-Phase Ion-Pair Chromatography of Polyvalent Ions Using Oligonucleotides as Model Substances.
Reversed Phase HPLC Separations of Nucleotides in the presence of Solvophobic Ions.

Tetrabutylammonium hydrogen sulfate pure

C

Specification:

Assay (titr.) min. 98 %
Insoluble matter max. 0.01 %

Order-No.	Quantity
A2878,0050	50 g
A2878,0100	100 g
A2878,0250	250 g

Tetrabutylammonium hydroxide - Solutions

EC-No.: 218-147-6

Storage: RT

Tetrabutylammonium hydroxide - Standard volumetric solution (1 M) in methanol

C

1 mol/L (1 N Solution)

HS-No.: 38220000

Class / PG: 3(6.1,8)/II
UN3286
Danger
H314-H301-H331-H311-H370-H225
P307+P311-P210-P280-P302+P352



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A0395,0250	250 ml
A0395,0500	500 ml
A0395,1000	1 L
A0395,10006	6 x 1 L

Tetrabutylammonium hydroxide - Standard volumetric solution (0.1 M) in methanol

C

0.1 mol/L (0.1 N Solution)

HS-No.: 38220000

Class / PG: 3(6.1,8)/II
UN3286
Danger
H370-H225-H315-H331
P302+P352-P307+P311-P210-P280



Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A7527,0250	250 ml
A7527,0500	500 ml
A7527,1000	1 L
A7527,10006	6 x 1 L

Tetrabutylammonium hydroxide - Solution 40 % in methanol

C

HS-No.: 38220000

LGK: 3 A
Disposal: 1

Class / PG: 3(6.1,8)/II
UN3286
WGK: 3
Danger
H311-H314-H331-H225-H301-H370
P280-P210-P302+P352-P307+P311



Specification:

Assay (titr.) min. 40 %
Density 0.87 - 0.88 g/cm³
Bromide max. 2 %

Order-No.	Quantity
A2047,0100	100 ml
A2047,0250	250 ml
A2047,0500	500 ml

Tetrabutylammonium hydroxide - Solution 40 % aqueous solution

HS-No.: 29239000

Class / PG: 8/II
UN3267
WGK: 3
Danger
H314
P305+P351+P338-P313



Specification:

Assay (titr.) approx. 40 %
Bromide max. 0.5 %
Sulfate max. 0.3 %

Order-No.	Quantity
A4232,0100	100 ml
A4232,0250	250 ml
A4232,0500	500 ml

◆ **Comment:** This Product may contain a precipitate which can be removed by heating.

Tetracaine hydrochloride *BioChemica*

B

4-(Butylamino)benzoic acid 2-
dimethylamino ethyl ester

C₁₅H₂₄N₂O₂ · HCl
M = 300.83 g/mol
CAS-No.: 136-47-0
HS-No.: 29224985

Storage: RT

Class / PG: 6.1/III
UN2811
Danger
H319-H301-H317
P301+P310-P305+P351+P338-P262-
P280-P260



Specification:

Assay min. 99 %

Order-No.	Quantity
A7714,0005	5 g
A7714,0025	25 g
A7714,0050	50 g
A7714,0100	100 g

Tetrachlorauric(III) acid trihydrate

C

Gold(III) chloride trihydrate

AuCl₄H · 3H₂O
M = 393.83 g/mol
CAS-No.: 16961-25-4
HS-No.: 28433000
EC-No.: 240-948-4

Storage: RT
LGK: 8 B
Disposal: 27

Class / PG: 6/II
UN3260
Danger
H302-H314
P305+P351+P338-P302+P352-
P301+P330+P331-P280



Specification:

Assay (Au) min. 49 %

Order-No.	Quantity
A1649,0500	500 mg
A1649,0001	1 g

Tetrachloroethene see Tetrachloroethylene pure Page 804

Tetrachloroethylene pure

C

Ethylene tetrachloride,
Perchloroethylene, Tetrachloroethene

C₂Cl₄
M = 165.83 g/mol
CAS-No.: 127-18-4
HS-No.: 29032300
EC-No.: 204-825-9

Storage: RT
protected from light
LGK: 10-13
Disposal: 2

Class / PG: 6.1/III
UN1897
WGK: 3
Warning
H351-H411
P281-P308+P313-P273



Specification:

Assay min. 99 %
Density (d 20°C/4°C) 1.621 - 1.623
Identity (IR) complies

Order-No.	Quantity
A4584,1000	1 L
A4584,10006	6 x 1 L
A4584,2500	2.5 L
A4584,25004	4 x 2.5 L
A4584,5000	5 L
A4584,9010	10 L
A4584,9025BK	25 L
A4584,9025PE	25 L

4,5,6,7-Tetrachloro-2',4',5',7'- tetraiodofluorescein see Rose Bengal (C.I. 45440) Page 691

Tetracycline hydrochloride

B

Achromycine hydrochloride

$C_{22}H_{24}N_2O_8 \cdot HCl$
 $M = 480.90$ g/mol
 CAS-No.: 64-75-5
 HS-No.: 29413000
 EC-No.: 200-593-8

Storage: RT
 protected from light
 LGK: 10 - 13

Warning
 H315-H319-H335
 P305+P351+P338



Melting point 215 - 220°C

Specification:

Assay (titr.) min. 95 %
 α 20°C/D: 1%, 0.01 M HCl ... -239° bis -250°
 Loss on drying max. 2 %
 Sulfated ash max. 0.5 %

pH (1 %; H_2O) 2.0 - 3.0

Order-No.	Quantity
A2228,0025	25 g
A2228,0050	50 g
A2228,0100	100 g

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
 (2) Gossen, M. & Bujard, H. (1992) *Proc. Natl. Acad. Sci. USA* **89**, 5547-5551
 (3) Gossen, M. et al. (1995) *Science* **268**, 1766-1769
 (4) Yin, D.X. et al. (1996) *Anal. Biochem.* **235**, 195-201
 (5) Freundlieb, S. et al. (1997) *Methods Enzymol.* **283**, 159-173

Tight control of gene expression in mammalian cells by tetracycline-responsive promoters.
 Transcriptional activation by Tetracyclines in mammalian cells.
 Tetracycline-controlled gene expression system achieves high-level and quantitative control of gene expression.
 Tetracyclin-controlled gene expression systems for investigations of the cell cycle.

Comment: Tetracycline was prepared first synthetically from chlorotetracycline, later it was isolated from *Streptomyces viridifaciens*. Tetracycline is active against gram positive and gram negative cocci and bacteria. The introduction of the tetracycline-controlled gene expression system brought a new application for the antibiotic molecular biology (2-4).

Stability: Tetracycline hydrochloride is stable if stored in a dry place and protected from light. It is water-soluble with approx. 11 mg/ml at 28°C. The stability in solutions is optimal at pH 3 - 5.2 (shelf life approx. 6 - 12 days). It may be stored between -20°C and 37°C. Since Tetracyclin is light-sensitive, solutions and agar plates containing TC should be protected from light. The recommended working concentration is 10 - 50 µg/ml, the stock solution e.g. 1.25 mg/ml. Magnesium ions antagonize with the activity of TC.

12-O-Tetradecanoylphorbol-13-acetate see Phorbol-12-myristate-13-acetate (PMA) Page 622
 N-Tetradecyl-dimethyl-3-ammonio-1-propanesulfonate see Sulfobetaine SB 14 Page 778

n-Tetradecyl-β-D-maltoside

B

$C_{26}H_{50}O_{11}$
 $M = 538.63$ g/mol
 CAS-No.: 18449-82-6
 HS-No.: 29389090

Storage: 2-8°C

Specification:

Assay min. 99 %
 Identity (IR) complies
 pH (1 %; H_2O) 6.0 - 7.5

Order-No.	Quantity
A4810,0250	250 mg
A4810,0001	1 g
A4810,0005	5 g

Tetraethylammonium chloride

B

TEACI

$C_8H_{20}ClN$
 $M = 183.73$ g/mol
 CAS-No.: 56-34-8
 HS-No.: 29239000
 EC-No.: 200-267-5

Storage: RT
 LGK: 10 - 13
 Disposal: 28

hygroscopic

Solubility (25°C) 1410 g/L (H_2O)

Specification:

Assay (titr.) min. 98 %
 IR-Spectrum complies
 Loss on drying max. 10 %

pH (5 %; H_2O ; 20°C) ... 6.0 - 9.0

Order-No.	Quantity
A3838,0025	25 g
A3838,0100	100 g

Literature: (1) Jost, W. et al. (1982) *Anal. Biochem.* **119**, 214-223

Reverse-Phase Ion-Pair Chromatography of Polyvalent Ions Using Oligonucleotides as Model Substances.

Tetraethylrhodamin see Rhodamine B (C.I. 45170) Page 686

Tetrafluoroboric acid - Solutions

HS-No.: 28111980

Storage: RT
 LGK: 3 B
 Disposal: 12

Class / PG: 8/II
 UN1775
 WGK: 1
 Danger
 H314
 P305+P351+P338-P280-P313



Tetrafluoroboric acid - Solution 50 % pure

C

Specification:

Assay (titr.) approx. 50 %
 Chloride max. 0.002 %
 Hexafluorosilicate max. 0.2 %
 Sulfate max. 0.02 %
 Fe max. 0.01 %

Ni max. 0.0005 %
 Zn max. 0.0005 %

Order-No.	Quantity
A4153,1000	1 L
A4153,10006	6 x 1 L
A4153,2500	2.5 L
A4153,5000	5 L

Tetrafluoroboric acid - Solution 32 % pure

C

Specification:

Assay (titr.)	approx. 32 %	Fe	max. 0.05 %
Heavy metals (as Pb)	max. 0.005 %		
Hexafluorosilicate	max. 0.2 %		
Sulfate	max. 0.02 %		

Order-No.	Quantity
A4372,1000	1 L
A4372,10006	6 x 1 L
A4372,2500	2.5 L

Tetrahydrobenzene see Cyclohexene for synthesis Page 252

Tetrahydrofuran

THF

Boiling point	66°C
Density (d 25°C/4°C)	0.889
Melting point	-89°C
n 20°C/D	1.4072

C ₄ H ₈ O
M = 72.11 g/mol
CAS-No.: 109-99-9
HS-No.: 29321100
EC-No.: 203-726-8

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN2056
WGK: 1
hygroscopic
Danger
EUH019-H319-H225-H335
P243-P233-P305+P351+P338-P210

**Tetrahydrofuran GPC grade**

C

non-stabilized

To be used in gel permeation
chromatography, filtered through 0.2 µm
filter.

Specification:

Assay (HPLC)	min. 99.8 %
Color	max. 10 APHA
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.02 %

Order-No.	Quantity
A2435,0500	500 ml
A2435,1000	1 L
A2435,10006	6 x 1 L
A2435,2500	2.5 L
A2435,25004	4 x 2.5 L

Tetrahydrofuran LC-MS grade

C

Specification:

Assay (HPLC)	min. 99.8 %
Acidity	max. 0.0005 meq/g
Non-volatile matter	max. 0.001 %
Loss on drying	max. 0.02 %
Ca	max. 0.1 ppm
K	max. 0.1 ppm
Mg	max. 0.1 ppm
Na	max. 0.1 ppm
GC/ECD individual signals (lindane standard)	max. 5 ng/L
GC/NPD individual signals (ethylparathion standard)	max. 10 ng/L

Order-No.	Quantity
A9020,1000	1 L
A9020,10006	6 x 1 L
A9020,2500	2.5 L
A9020,25004	4 x 2.5 L

Tetrahydrofuran HPLC grade

C

*non-stabilized***Specification:**

Assay (HPLC)	min. 99.9 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	240 nm max. 0.15
Non-volatile matter	max. 0.0005 %	250 nm max. 0.10
Peroxides	max. 0.01 %	260 nm max. 0.05
Water (K.F.)	max. 0.02 %	270 nm max. 0.01
		280 nm max. 0.005

Order-No.	Quantity
A1595,1000	1 L
A1595,10006	6 x 1 L
A1595,2500	2.5 L
A1595,25004	4 x 2.5 L

Tetrahydrofuran dried, p. A.

C

*stabilized with 200 - 300 ppm BHT***Specification:**

Assay (HPLC)	min. 99.8 %
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.01 %

Order-No.	Quantity
A0537,0500	500 ml
A0537,1000	1 L
A0537,10006	6 x 1 L
A0537,2500	2.5 L
A0537,25004	4 x 2.5 L

◆ This product contains molecular sieve as a drying agent!

Tetrahydrofuran p. A.

C

stabilized with 200 - 300 ppm BHT

Specification:

Assay (HPLC)	min. 99.5 %	K	max. 0.00005 %
Acidity/Alkalinity	max. 0.0002 meq/g	Na	max. 0.0001 %
Non-volatile matter	max. 0.0005 %	Pb	max. 0.000005 %
Total P	max. 0.00001 %	Zn	max. 0.00002 %
Total S	max. 0.00005 %		
Methyltetrahydrofuran	max. 0.1 %		
Peroxides	max. 0.005 %		
Water (K.F.)	max. 0.02 %		
Ca	max. 0.00005 %		
Cu	max. 0.000005 %		
Fe	max. 0.00001 %		

Order-No.	Quantity
A0639,0500	500 ml
A0639,1000	1 L
A0639,10006	6 x 1 L
A0639,2500	2.5 L
A0639,25004	4 x 2.5 L
A0639,5000	5 L
A0639,9010	10 L
A0639,9025BK	25 L
A0639,9025PE	25 L

Tetrahydrofuran pure

C

stabilized with 200 - 300 ppm BHT

Specification:

Assay (HPLC)	min. 99 %
Acidity/Alkalinity	max. 0.005 meq/g
Peroxides	max. 0.01 %
Water (K.F.)	max. 0.1 %

Order-No.	Quantity
A4031,0500	500 ml
A4031,1000	1 L
A4031,10006	6 x 1 L
A4031,2500	2.5 L
A4031,25004	4 x 2.5 L
A4031,5000	5 L
A4031,9010	10 L
A4031,9025BK	25 L
A4031,9025PE	25 L

Tetrahydrofuran Technical grade

C

stabilized with 200 - 300 ppm BHT

Specification:

Assay (HPLC)	min. 98 %
Peroxides	max. 0.01 %
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A4504,1000	1 L
A4504,10006	6 x 1 L
A4504,2500	2.5 L
A4504,25004	4 x 2.5 L
A4504,5000	5 L
A4504,9010	10 L
A4504,9025BK	25 L
A4504,9025PE	25 L

Tetrahydrofuran D₈

C

Boiling point	64°C
Density (d 20°C/4°C)	0.99
Melting point	-108°C

C ₄ D ₈ O
M = 80.16 g/mol
CAS-No.: 1693-74-9
HS-No.: 28459010
EC-No.: 216-898-4

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN2056
WGK: 1
hygroscopic
Danger
EUH019-H335-H319-H225
P233-P210-P305+P351+P338-P243



Specification:

Deuteration degree	min. 99.5 %

Order-No.	Quantity
DS-17,0001	1 ml
DS-17,0005	5 ml

Tetrahydro-2-methylfuran see 2-Methyltetrahydrofuran pure Page 543
3,4?,5,7-Tetrahydroxyflavone see Kaempferol Page 468
3',4',5,7-Tetrahydroxyflavone see Luteolin HPLC grade Page 498
3,4',5,7-Tetrahydroxyflavone see Kaempferol Page 468



**Chemicals from
AppliChem -
all over the world !**

Tetramethylammonium chloride (TMACl) BioChemica

B

TMACl	$C_4H_{12}ClN$	Storage: RT	Class / PG: 6.1/III
	$M = 109.60 \text{ g/mol}$	LGK: 6.1 B	UN2811
	CAS-No.: 75-57-0	Disposal: 9	WGK: 2
	HS-No.: 29239000		hygroscopic
	EC-No.: 200-880-8		Danger
			H311-H300
			P280-P302+P352


Specification:

Assay (titr.) min. 98 %
 IR-Spectrum complies
 Solubility (H_2O ; 20°C) readily soluble

Order-No.	Quantity
A3839,0050	50 g
A3839,0100	100 g
A3839,0500	500 g

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Page 6.4.7 (Suppl. 9). Greene Publishing & Wiley-Interscience, New York.

Comment: To prepare a 6 M stock solution (according to ref. 1): Dissolve 657.6 g TMACl in water and bring to 1 liter. Filter the solution through e.g. Whatman No. 1 filter paper and determine the precise concentration of the solution by measuring the refractive index (n) of a 3-fold diluted solution. The molarity (M) of the diluted solution = $55.6 (n - 1.331)$ and the molarity of the stock solution = $3 \times M$. TMACl can be stored at room temperature in brown bottles (protected from light).

Caution: Use TMACl with adequate ventilation in a fume hood.

Tetramethylammonium chloride - Solution (approx. 6 M) Molecular biology grade

B

HS-No.: 29239000	Storage: RT	Class / PG: 6.1/III
	LGK: 6.1 B	UN2810
	Disposal: 9	WGK: 3*
		Danger
		H300-H311
		P280-P332+P313+P362-P301+P310


Composition:

TMACl (A3839) approx. 657 g/L

Specification:

DNases/RNases/Proteases
 not detectable

Order-No.	Quantity
A5456,0250	250 ml
A5456,0500	500 ml

Tetramethylammonium hydroxide - Solution 25 %

C

Boiling point approx. 100°C	HS-No.: 29239000	Storage: RT	Class / PG: 8/II
		LGK: 6.1 B	UN1835
		Disposal: 28	WGK: 1
			Danger
			H314-H301
			P305+P351+P338-P313


Specification:

Assay min. 25 %
 Heavy metals (as Pb) max. 0.001 %
 pH (20°C) approx. 13
 Chloride max. 0.1 %
 Sulfate max. 0.05 %

Order-No.	Quantity
A4186,0250	250 ml
A4186,0500	500 ml
A4186,1000	1 L
A4186,10006	6 x 1 L

3,3',5,5'-Tetramethylbenzidine BioChemica

B

TMB	$C_{16}H_{20}N_2$	Storage: RT	WGK: 3*
	$M = 240.35 \text{ g/mol}$	LGK: 10 - 13	Warning
Melting point 166 - 170°C	CAS-No.: 54827-17-7	Disposal: 3	H335-H319-H315
Solubility (20°C) insoluble (H_2O)	HS-No.: 29215990		P305+P351+P338-P261
	EC-No.: 259-364-6		


Specification:

Assay (titr.) min. 98 %
 Loss on drying max. 0.5 %
 Residue on ignition max. 0.2 %

Order-No.	Quantity
A3840,0001	1 g
A3840,0005	5 g
A3840,0025	25 g

Literature: (1) Volpe, G. et al. (1998) *Analyst* **123**, 1303-1307

TMB as electrochemical substrate for horseradish peroxidase based immunoassays. A comparative study.

(2) Schütz, A.J. et al. (1997) *SPIE Proc.* **3105**, 332-340

Stabilization of Horseradish Peroxidase (HRP) for the Use in Immunochemical Sensors.

Comment: Tetramethylbenzidine (TMB) is used as a chromogenic substrate for the detection of horseradish peroxidase, especially applied in Enzyme Immunoassays (e. g. ELISA). It is more sensitive than o-phenylene diamine or ABTS and more stable and less toxic than diaminobenzidine. TMB has been classified as nontoxic. The color development is generally completed after 10 - 30 minutes at room temperature. The blue color turns to yellow when the reaction is stopped by the addition of 1 M sulfuric acid and the color development is measured at 450 nm.

Solubility: TMB is soluble in DMSO, acetone, chloroform, toluene (100 mg/ml) or ethanol 96 % (~30 mg/ml). It is insoluble in water unless TMB forms the dihydrochloride. Stock solutions can be prepared e.g. as 0.01 M solutions (0.24 g/100 ml) up to 1.5 % (1.5 g/100 ml). Solutions are stored at 2-8°C.

N,N'-(Tetramethylene)dimalleimide see BMB Page 150

Tetramethylene glycol see 1,4-Butanediol for synthesis Page 170

N,N,N',N'-Tetramethylethylenediamine see TEMED Page 801

N,N,N',N'-Tetramethyl-p-phenylenediamine dihydrochloride BioChemica

B

Melting point	 227 - 230°C (dec.)	$C_{10}H_{16}N_2 \cdot 2HCl$ $M = 237.17$ g/mol CAS-No.: 637-01-4 HS-No.: 29215190 EC-No.: 211-274-8	Storage: RT LGK: 10 - 13 Disposal: 3

Specification:

Assay (titr.)	 min. 99 %
Appearance of solution	... clear to very slightly hazy

Order-No.	Quantity
A8073,0010	10 g
A8073,0025	25 g

Tetramisole hydrochloride see Levamisole hydrochloride Page 488
2,4,5,6-Tetraoxypyrimidine see Alloxan monohydrate Page 81

Tetrapropylammonium hydroxide - Solution 40 % p. A.

C

aqueous solution (40 %)	CAS-No.: 4499-86-9 HS-No.: 29239000 EC-No.: 224-800-6	Storage: RT LGK: 8 B Disposal: 13	Class / PG: 8/II UN3267 WGK: 3 Danger H314 P305+P351+P338-P313
Density (d 20°C/4°C)	... 0.99		


Specification:

Assay	 approx. 40 %	K	 max. 0.001 %
Bromide	 max. 0.05 %	Na	 max. 0.05 %
Sulfate	 max. 0.05 %	Pb	 max. 0.0005 %
Fe	 max. 0.001 %		

Order-No.	Quantity
A0943,0100	100 ml
A0943,0250	250 ml
A0943,0500	500 ml

Tetrathionate Broth Base

B

HS-No.: 38220000	Storage: RT

Composition:

Bile salts	 1.0 g/L
Calcium carbonate	 10.0 g/L
Peptones	 5.0 g/L
Sodium thiosulfate	 30.0 g/L

Specification:

pH before autoclaving	... approx. 8.2 (20°C)

Order-No.	Quantity
A3908,0500	500 g
A3908,5000	5 kg

♦ **Attention:** Please note that a supplement (A6793) exists for this agar. Please order separately.

Literature: (1) Mueller (1923) *C. R. Soc. Biol. Paris* **89**, 434

Comment: This medium is a selective enrichment medium for the isolation of *Salmonella typhi* and other salmonellae.

Direction: Suspend 23 g in 500 ml of distilled water and boil to dissolve the medium completely. Cool to 50°C and aseptically the contents of one vial of Tetrathionate Iodine-Iodide Selective Supplement (A6793) reconstituted with 10 ml of distilled water. Mix well and distribute aseptically into sterile test tubes. **Warning:** The medium is heat sensitive. Do not heat after the addition of the supplement. The complete medium should be used on the day of preparation.

Tetrathionate Iodine Iodide Selective Supplement see Supplements for Microbiological Media Page 786

Tetrazolium blue chloride

B

3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride), BTC, Blue tetrazolium chloride, 3,3'-(3,3'-Dimethoxy[1,1'-biphenyl]-4,4'-diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride	$C_{40}H_{32}Cl_2N_8O_2$ $M = 727.66$ g/mol CAS-No.: 1871-22-3 HS-No.: 29339980 EC-No.: 217-488-8	Storage: RT LGK: 10 - 13	WGK: 2

Solubility (20°C)	 3 g/L (H ₂ O)
Thermal dec.	 265 - 270°C

Specification:

Assay (titr.)	 min. 95 %	Sulfated ash	 max. 0.1 %
Appearance	 light yellow powder		
E (1 %; 1 cm; 252 nm; EtOH)	min. 650		
Solubility (0.5 %; EtOH)	 clear		

Order-No.	Quantity
A6245,0001	1 g
A6245,0005	5 g
A6245,0010	10 g

Tetrazolium red

B

TPTZ, 2,3,5-Triphenyltetrazolium chloride, TTZ	$C_{19}H_{15}ClN_4$ $M = 334.80$ g/mol CAS-No.: 298-96-4 HS-No.: 29339980 EC-No.: 206-071-6	Storage: RT LGK: 10 - 13	Warning H335-H315-H319 P261-P305+P351+P338
Melting range (dec.)	... min. 235°C		


Specification:

Assay (titr.)	 min. 98.5 %	Loss on drying (120°C)	... max. 0.5 %
λ_{max}	 243 - 251 nm	Solubility (5 %; H ₂ O)	... clear
Appearance	 faint yellow powder	Sulfated ash	 max. 0.2 %
E (1 %; 1 cm; λ_{max} ; EtOH)	... min. 670		

Order-No.	Quantity
A6246,0005	5 g
A6246,0010	10 g
A6246,0025	25 g

TFA see Trifluoroacetic acid Page 833
TFA - Solution see Trifluoroacetic acid - Solution 25 % Page 833

TFCS

B

N-(*ε*-Trifluoroacetylcaproyloxy)
succinimide ester

C₁₂H₁₅F₃N₂O₅
M = 324.26 g/mol
HS-No.: 29280090

Storage: 2-8°C

Melting point 80 - 82°C

Specification:

Assay min. 97 %
Identity (NMR) complies

Order-No.	Quantity
A7956,0050	50 mg
A7956,0100	100 mg
A7956,0250	250 mg

Comment:TFCS is an amine-reactive heterobifunctional reagent with a protected primary amino group. It is a non-cleavable, water-insoluble reagent and used to extend biomolecules side chains to reduce steric hindrance. The NHS amine-reactive group reacts with primary amines at pH 7 - 9. The trifluoroacetyl protecting group can be removed in borate or phosphate buffer at pH 7.5 - 8.0.

Tg see Thyroglobulin, human Page 816
TG buffer see Tris-Glycine buffers Page 838

rHu TGF-β3



B

recombinant Human Transforming
Growth Factor-β 3

M = 25.45 kDa
HS-No.: 29371900

Storage: -20°C

The protein solution (0.25 mg/ml)
contains 20 % ethanol and 0.12 %
acetic acid.
from *E. coli*

Specification:

Assay (HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8313,0002	2 µg
A8313,0010	10 µg
A8313,0100	100 µg

Comment:Transforming growth factor-betas (TGF-β) are multifunctional peptides that regulate growth and differentiation in a variety of cells. The TGF-β family of growth modulators play critical roles in tissue development and maintenance. Recent data suggest that individual TGF-β isoforms (TGF-β 1, -β 2 and -β 3) have overlapping yet distinct biological actions and target cell specificities, both in developing and adult tissues. TGF-β 3 is a new isoform of the TGF-β superfamily and is presumed to play an important role in wound repair and scarring. TGF-β 3 is believed to be involved in osteoblast proliferation, chemotaxis, and collagen synthesis. Recombinant Human TGF-β 3 produced in *E. coli* is a disulfide-linked homodimeric, non-glycosylated, polypeptide chain containing 112 amino acids and having a molecular mass of 25.45 kDa.

TGS buffer see SDS-Tris-Glycine buffer BioChemica Page 707
THAM see Tris Page 835

Thapsigargin

B

C₃₄H₅₀O₁₂
M = 650.76 g/mol
CAS-No.: 67526-95-8
HS-No.: 29419000

Storage: -20°C
protected from light
LGK: 6.1 B

Danger
H335-H319-H315-H334
P305+P351+P338-P261-P342+P311



Specification:

Assay min. 90 %

Order-No.	Quantity
A2229,0001	1 mg
A2229,0005	5 mg

- Literature:** (1) Takemura, H. *et al.* (1989) *J. Biol. Chem.* **264**, 12266-12271
(2) Thastrup, O. *et al.* (1990) *Proc. Natl. Acad. Sci. USA* **87**, 2466-2470
(3) Sagara, Y. & Inesi, G. (1991) *J. Biol. Chem.* **266**, 13503-13506
(4) Vercesi, A.E. *et al.* (1993) *J. Biol. Chem.* **268**, 8564-8568
(5) Wong, W.L. *et al.* (1993) *Biochem. J.* **289**, 71-79

Activation of Calcium entry by the tumor promoter Thapsigargin in parotid acinar cells. Thapsigargin, a tumor promoter, discharges intracellular Ca²⁺ stores by specific inhibition of the endoplasmic reticulum Ca²⁺-ATPase. Inhibition of the sarcoplasmic reticulum Ca²⁺ transport ATPase by Thapsigargin at subnanomolar concentrations. Thapsigargin causes a Ca²⁺ release and collapse of the membrane potential of *Trypanosoma brucei* mitochondria *in situ* and of isolated rat liver mitochondria. Inhibition of protein synthesis and early protein processing by Thapsigargin in cultured cells.

Comment:Thapsigargin is a plant-derived sesquiterpene lactone from *Thapsia garganica*. It acts as a tumor promoter by releasing intracellular calcium independent of the formation of inositol phosphate and induces the influx of extracellular calcium (concentration 2 µM, ref. 1). It specifically inhibits the Ca²⁺-ATPase of the endoplasmic reticulum (IC₅₀ = 30 nM, Ref. 2) and of the sarcoplasmic reticulum (10 µM, Ref. 3). At high doses (10 µM), calcium will be released from mitochondria too (4). The protein synthesis and the early processing of proteins are inhibited by Thapsigargin, independent of the intracellular calcium concentration (2 nM and 1 µM, respectively, ref. 5). Thapsigargin is soluble in DMSO or ethanol. Store protected from light. It is stable at room temperature for at least 10 days.

Thermolabile Antigen A see Enolase, Neuron-specific human Page 327
Thermozomycin see Myricin BioChemica Page 556
THF see Tetrahydrofuran Page 806
Thiactin see Thiostrepton BioChemica Page 813
Thiamine chloride see Thiamine hydrochloride Page 811

Thiamine hydrochloride

Solubility (20°C) 1 g/ml (H₂O)

C₁₂H₁₇ClN₄OS · HCl
M = 337.23 g/mol
CAS-No.: 67-03-8
HS-No.: 29362200
EC-No.: 200-641-8

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Thiamine hydrochloride *BioChemica*

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 5 %
Pb max. 0.001 %

Order-No.	Quantity
A0955,0050	50 g
A0955,0100	100 g
A0955,0250	250 g

Literature: (1) Krampitz, L.O. (1982) *Ann. N.Y. Acad. Sci.* **378**, 1-6

Thiamine; this issue (Vol. 378) reviews the knowledge about Thiamine.

Thiamine hydrochloride pure Ph. Eur.

Specification:

Assay (titr., calc. on dried substance) 98.5 - 101.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.002 %

Identity complies
Related subst. complies
Sulfated ash max. 0.1 %
Water (K.F.) max. 5 %

pH (5 %; H₂O) .. 2.7 - 3.3
Sulfate max. 0.03 %

Order-No.	Quantity
A8094,0050	50 g
A8094,0100	100 g
A8094,0250	250 g

Thiamine monophosphate chloride dihydrate *BioChemica*

Aneurine monophosphate chloride

C₁₂H₁₈ClN₄O₄PS · 2H₂O
M = 416.82 g/mol
CAS-No.: 532-40-1
HS-No.: 29362200
EC-No.: 208-536-9

Storage: 2-8°C
LGK: 10 - 13

WGK: 1

Melting point (dec.) ... 193°C
Solubility (20°C) 240 g/ml (H₂O)

Specification:

Assay min. 99 %
Heavy metals (as Pb) max. 0.0005 %
Sulfate max. 0.005 %
Fe max. 0.0005 %

Order-No.	Quantity
A5476,0001	1 g
A5476,0005	5 g
A5476,0025	25 g

Thiamine pyrophosphate

Cocarboxylase, Thiamine pyrophosphate
chloride, Aneurinepyrophosphoric acid

C₁₂H₁₉ClN₄O₇P₂S
M = 460.77 g/mol
CAS-No.: 154-87-0
HS-No.: 29362200
EC-No.: 205-230-7

Storage: 2-8°C

Specification:

Assay (TLC) min. 97 %
Water (K.F.) max. 2 %

Order-No.	Quantity
A4653,0005	5 g
A4653,0025	25 g
A4653,0100	100 g

Thiamine pyrophosphate chloride see Thiamine pyrophosphate Page 811

Thiazol yellow G see Titan yellow (C.I. 19540) Page 818

Thiazolyl blue tetrazolium bromide *BioChemica*

3-(4,5-Dimethyl-2-thiazolyl)-2,5-
diphenyl-2H-tetrazolium bromide, MTT

C₁₈H₁₆BrN₅S
M = 414.33 g/mol
CAS-No.: 298-93-1
HS-No.: 29341000
EC-No.: 206-069-5

Storage: 2-8°C
protected from light

Melting range 190 - 210°C

Specification:

Assay (titr.) min. 98 %
λ_{max} 239 - 247 nm
Solubility (5 %; MeOH) clear

Order-No.	Quantity
A2231,0001	1 g
A2231,0005	5 g
A2231,0010	10 g

Literature: (1) Mosmann, T. (1983) *J. Immunol. Methods* **65**, 55-63

Rapid colorimetric assay for cellular growth and survival: Application to proliferation and cytotoxicity assays.

Use of MTT colorimetric assay to measure cell activation.

Re-examination and further development of a precise and rapid dye method for measuring cell growth / cell kill.

(2) Gerlier, D. & Thomasset, N. (1986) *J. Immunol. Methods* **94**, 57-63

(3) Hansen, M.B. et al. (1989) *J. Immunol. Methods* **119**, 203-210

Thimerosal BioChemica

B

Sodium ethylmercurithiosalicylate,
Merthiolate, 2-(Ethylmercury-mercapto)-
benzoic acid sodium salt

C₉H₉HgNaO₂S
M = 404.82 g/mol
CAS-No.: 54-64-8
HS-No.: 28520000
EC-No.: 200-210-4

Storage: RT
protected from light
LGK: 6.1 B
Disposal: 9

Class / PG: 6.1/II
UN2025
WGK: 3
Danger
H373-H410-H310-H300-H330
P304+P340-P280-P273-P302+P352

**Specification:**

Assay min. 98 %
Ether-soluble matter max. 0.8 %
Identity complies
Loss on drying max. 0.5 %

Order-No.	Quantity
A1278,0010	10 g
A1278,0025	25 g
A1278,0100	100 g

Literature: (1) Swann, K. (1991) *FEBS Lett.* **278**, 175-178

(2) Miyazaki, S.-i. et al. (1992) *FEBS Lett.* **309**, 180-184

(3) Sayers, L.G. et al. (1993) *Biochem. J.* **289**, 883-887

(4) Missiaen, L. et al. (1991) *Nature* **352**, 241-244

(5) Hecker, M. et al. (1989) *Biochem. Biophys. Res. Com.* **159**, 961-968

Thimerosal causes calcium oscillations and sensitizes calcium-induced calcium release in unfertilized hamster eggs.

Antibody to the inositol trisphosphate receptor blocks thimerosal-enhanced Ca²⁺-induced Ca²⁺ release and Ca²⁺ oscillation in hamster eggs.

The effects of thimerosal on calcium uptake and inositol 1,4,5-trisphosphate-induced calcium release in cerebellar microsomes.

Spontaneous calcium-release from inositol trisphosphate-sensitive calcium stores.

The sulphydryl reagent thimerosal elicits human platelet aggregation by mobilization of intracellular calcium and secondary prostaglandin endoperoxide formation.

Thioacetamide p. A., ACS

C

Ethanethioamide

C₂H₅NS
M = 75.13 g/mol
CAS-No.: 62-55-5
HS-No.: 29309099
EC-No.: 200-541-4

Storage: RT
LGK: 6.1 B
Disposal: 6

WGK: 3
Danger
H302-H315-H412-H350-H319
P305+P351+P338-P308+P313-
P302+P352-P273-P201



Melting point 111 - 114°C

Specification:

Assay (argentometr.) min. 99 %
Heavy metals max. 0.001 %
Infrared spectrometry complies

Residue on ignition max. 0.05 %

Order-No.	Quantity
A7606,0050	50 g
A7606,0250	250 g

Thiobarbituric acid BioChemica

B

4,6-Dihydroxypyrimidine-2-thiol, 4,6-
Dihydroxy-2-mercaptopyrimidine, TBA

C₄H₄N₂O₂S
M = 144.15 g/mol
CAS-No.: 504-17-6
HS-No.: 29335400
EC-No.: 207-985-8

Storage: RT

WGK: 2

Melting point 245°C (dec.)

Specification:

Assay (titr.) min. 99 %
Loss on drying max. 2 %
Sulfated ash max. 0.5 %

Order-No.	Quantity
A4670,0025	25 g
A4670,0100	100 g
A4670,0250	250 g

Thiocarbamide see Thiourea Page 814

DL-6,8-Thioctic acid see DL-α-Lipoic acid BioChemica Page 490

Thioglycolate Medium

C

HS-No.: 38210000

Storage: RT
LGK: 10 - 13

Composition:

Agar 0.75 g/L
Glucose monohydrate 5.5 g/L
L-Cystine 0.5 g/L
Pancreatic digest of casein 15.25 g/L
Resazurin 0.001 g/L

Sodium chloride 2.5 g/L
Sodium thioglycollate 0.5 g/L
Yeast extract 5.0 g/L

Specification:

pH before autoclaving
..... approx. 7.1 (20°C)

Order-No.	Quantity
A3869,0500	500 g
A3869,5000	5 kg

Literature: (1) US Pharmacopoeia XXI. (1985) Sterility Testing

Comment: This medium is used for cultivation of both aerobic and anaerobic organism, especially in the performance of sterility tests.

Direction: Suspend 30 g in 1 L of distilled water and boil to dissolve the medium completely. Distribute into final containers and sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium protected from light at 2-8°C.

Thioglycolic acid

Mercaptoacetic acid

Boiling range (8 hPa) .. 104 - 106°C
Density (d 20°C/4°C) .. 1.33
Melting point -17°C

$C_2H_4O_2S$
 $M = 92.12$ g/mol
CAS-No.: 68-11-1
HS-No.: 29309099
EC-No.: 200-677-4

Storage: <15°C
LGK: 6.1 A
Disposal: 6

Class / PG: 8/II
UN1940
WGK: 1
Danger
H301-H331-H314-H311
P302+P352-P280-P301+P330+P331-
P304+P340



Thioglycolic acid p. A.

C

Specification:

Assay (titr.) min. 99 %
Organic chlorine max. 0.01 %
Sulfated ash max. 0.05 %
Fe max. 0.0005 %

Order-No.	Quantity
A3150,0100	100 ml
A3150,0250	250 ml
A3150,0500	500 ml
A3150,1000	1 L
A3150,10006	6 x 1 L

Thioglycolic acid pure

C

Specification:

Assay (titr.) min. 98 %
Identity complies

Order-No.	Quantity
A3533,0250	250 ml
A3533,0500	500 ml
A3533,1000	1 L
A3533,10006	6 x 1 L

Thioglycolic acid - Solution 80 % pure

C

Density (d 20°C/4°C) .. 1.27
Melting point -15°C

CAS-No.: 68-11-1
HS-No.: 29309099
EC-No.: 200-677-4

Storage: RT
LGK: 6.1 A
Disposal: 6

Class / PG: 8/II
UN1940
WGK: 1
Danger
H311-H301-H314-H331
P280-P305+P351+P338-P302+P352



Specification:

Assay (titr.) min. 80 %
Organic chlorine max. 0.01 %
Sulfated ash max. 0.05 %
Fe max. 0.005 %

Order-No.	Quantity
A3154,0500	500 ml
A3154,1000	1 L
A3154,10006	6 x 1 L
A3154,2500	2.5 L

6-Thiohypoxanthine see Mercaptopurine monohydrate BioChemica Page 529

Thiolutin BioChemica

B

Propiopythione, Acetopyrrothin,
Farcinidin
from *Streptomyces luteosporus*

$C_9H_8N_2O_2S_2$
 $M = 228.29$ g/mol
CAS-No.: 87-11-6
HS-No.: 29419000

Storage: 2-8°C
protected from light
Shipment: wet ice

Class / PG: 6.1/II
UN2811
Danger
H300
P264-P301+P310



Specification:

Assay approx. 98 %
 λ_{max} 207, 244, 312, 390 nm

Solubility (1 mg/ml DMSO)
..... clear, orange

Order-No.	Quantity
A7880,0001	1 mg
A7880,0005	5 mg

Thionicotinamide adenine dinucleotide see Thio-NAD Page 557

Thionicotinamide-DPN see Thio-NAD Page 557

Thiostrepton BioChemica



B

Alaninamide, Bryamicin, Thiactin
from *Streptomyces* sp.

$C_{72}H_{85}N_{19}O_{18}S_5$
 $M = 1664.89$ g/mol
CAS-No.: 1393-48-2
HS-No.: 29419000

Storage: -20°C

Melting point 246 - 256°C
(Decomposition)

Specification:

Assay approx. 97 %
 λ_{max} No clear UV maxima
Appearance white to off white powder

Order-No.	Quantity
A8671,0001	1 g
A8671,0005	5 g

Comment: Thiostrepton is soluble in Chloroform, Dichloromethane, Dioxane, Pyridine, glacial acetic acid, DMF. Practically insoluble in water, the lower alcohols, nonpolar organic solvents, diluted aqueous acids and bases. Working solution of 1 % in DMSO is unstable and should be freshly prepared and protected from light.

Thiourea

Thiocarbamide

Melting range 174 - 177°C
Solubility (20°C) 137 g/L (H₂O)

CH₄N₂S
M = 76.11 g/mol
CAS-No.: 62-56-6
HS-No.: 29309099
EC-No.: 200-543-5

Storage: RT
LGK: 10 - 13
Disposal: 3

Class / PG: 9/III
UN3077
WGK: 2
Warning
H361d-H351-H411-H302
P273-P308+P313-P281



Thiourea p. A.

Specification:

Assay min. 99 %
Insoluble matter max. 0.01 %
Loss on drying max. 0.5 % (105°C)
Sulfated ash (800°C) max. 0.05 %
Sulfate max. 0.01 %
Fe max. 0.0005 %

Order-No.	Quantity
A2535,0250	250 g
A2535,0500	500 g
A2535,1000	1 kg
A2535,10006	6 x 1 kg

Thiourea for synthesis

Specification:

Assay min. 98 %
Fe max. 0.001 %

Order-No.	Quantity
A3568,0500	500 g
A3568,1000	1 kg
A3568,10006	6 x 1 kg
A3568,5000	5 kg
A3568,9010	10 kg
A3568,9025	25 kg

THP A see Hydroxyectoine Page 425
THP B see Ectoine Page 312

L-Threonine

L-2-Amino-3-hydroxybutyric acid

Solubility (25°C) 90 g/L (H₂O)

C₄H₉NO₃
M = 119.12 g/mol
CAS-No.: 72-19-5
HS-No.: 29225000
EC-No.: 200-774-1

Storage: RT
LGK: 10 - 13

L-Threonine Cell culture grade

Specification:

Pyrogen test complies
Assay (titr.) min. 99 %
α20°C/D; 6 %, H₂O -27.6° - -29.0°
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.02 %
As max. 0.0001 %
Fe max. 0.001 %
Pb max. 0.001 %

Order-No.	Quantity
A3946,0025	25 g
A3946,0100	100 g
A3946,0250	250 g
A3946,0500	500 g
A3946,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Threonine BioChemica

Specification:

Assay (titr.) min. 99 %
α20°C/D; 6 %, H₂O -27.6° - -29.0°
Heavy metals (as Pb) max. 0.001 %
Insoluble matter complies
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.02 %

Order-No.	Quantity
A3969,0025	25 g
A3969,0100	100 g
A3969,0250	250 g
A3969,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Threonine pure Ph. Eur., USP

Specification:

Assay (titr.) 99.0 - 101.0 %
α20°C/D; 6 %, H₂O -27.6° - -29.0°
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity (IR) complies
Loss on drying max. 0.2 %
Residue on ignition max. 0.1 %
pH (2.5 %; H₂O) 5.0 - 6.5
Other amino acids max. 0.5 %
Ammonium max. 0.02 %
Chloride max. 0.02 %
Sulfate max. 0.03 %
Fe max. 0.001 %

Order-No.	Quantity
A1419,0025	25 g
A1419,0100	100 g
A1419,0250	250 g
A1419,0500	500 g
A1419,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

recombinant Mouse Thrombopoietin see rM TPO Page 824

Thymidine see 2'-Deoxythymidine *BioChemica* Page 267

Thymidine 5'-triphosphate trisodium salt see 2'-Deoxythymidine 5'-triphosphoric acid trisodium salt *BioChemica* Page 268

Thymine

B

2,4-Dihydroxy-5-methylpyrimidine

 $C_5H_6N_2O_2$

Storage: RT

 $M = 126.11 \text{ g/mol}$

LGK: 10 - 13

CAS-No.: 65-71-4

Disposal: 3

HS-No.: 29335995

EC-No.: 200-616-1

Melting point 316 - 317°C (dec.)

 pK_1 (25°C) 0

 pK_2 (25°C) 9.9

 pK_3 (25°C) > 13

Specification:

Assay min. 97 %

E 1 %/1 cm, 265 nm; pH 7 613 - 626

Heavy metals max. 0.001 %

Order-No.

A0670,0005

A0670,0010

A0670,0025

Quantity

5 g

10 g

25 g

Thymine deoxyriboside see 2'-Deoxythymidine BioChemica Page 267

Thymineose see 2-Deoxy-D-ribose BioChemica Page 267

Thymol pure Ph. Eur

C

5-Methyl-2-(1-methylethyl)-phenol

 $C_{10}H_{14}O$

Storage: RT

 $M = 150.24 \text{ g/mol}$

LGK: 8 B

CAS-No.: 89-83-8

HS-No.: 29071990

EC-No.: 201-944-8

Density (20°C) 0.97 g/cm³

Melting point 49 - 51°C

Class / PG: 8/III

UN1759

WGK: 2

Danger

H302-H314-H411

P301+P330+P331-P273-

P305+P351+P338



Specification:

Acidic reacting subst. complies

Appearance of solution complies

Identity complies

Non-volatile matter max. 0.05 %

Related subst. complies

Order-No.

A4054,0100

A4054,0500

A4054,1000

A4054,10006

Quantity

100 g

500 g

1 kg

6 x 1 kg

Thymol blue

C

TB, Thymolsulfonephthalein

 $C_{27}H_{30}O_5S$

Storage: RT

 $M = 466.60 \text{ g/mol}$

LGK: 10 - 13

CAS-No.: 76-61-9

Disposal: 3

HS-No.: 29349990

EC-No.: 200-973-3

1. Transition interval ... pH 1.2 - 2.8 (violet - brownish)

2. Transition interval ... pH 7.8 - 9.5 (green-yellowish - blue)

Melting range 283 - 285°C (dec.)

Specification:

Ash max. 0.1 %

Loss on drying (110°C) max. 5 %

UV/VIS spectrum complies to standard

Order-No.

A0462,0005

A0462,0010

A0462,0025

Quantity

5 g

10 g

25 g

Thymol blue - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000

EC-No.: 200-973-3

Storage: RT

LGK: 10 - 13

Disposal: 1

Composition:

Thymol blue (A0462) 0.04 %

Order-No.

A0529,0100

A0529,0500

Quantity

100 ml

500 ml

Thymol blue sodium salt water-soluble

C

Thymolsulfonephthalein sodium salt

 $C_{27}H_{29}NaO_5S$

Storage: RT

 $M = 488.58 \text{ g/mol}$

LGK: 10 - 13

CAS-No.: 62625-21-2

Disposal: 3

HS-No.: 29349990

EC-No.: 263-650-6

1. Transition interval ... pH 1.2 - 2.8 (violet - brownish)

2. Transition interval ... pH 7.8 - 9.5 (green-yellowish - blue)

Melting range 283 - 285°C (dec.)

Specification:

Loss on drying max. 5 %

UV/VIS spectrum complies to standard

Order-No.

A2436,0005

A2436,0010

A2436,0025

Quantity

5 g

10 g

25 g

Thymolphthalein

C

Melting range 251 - 253°C
Transition interval pH 9.0 - 10.5
(colorless-blue)

$C_{28}H_{30}O_4$
 $M = 430.55$ g/mol
CAS-No.: 125-20-2
HS-No.: 29322985
EC-No.: 204-729-7

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3*

Specification:

λ_{max} (0.1 M NaOH) 592 - 596 nm
Identity complies
Loss on drying max. 1 %

Order-No.	Quantity
A1738,0005	5 g
A1738,0010	10 g
A1738,0025	25 g

Thymolphthalein - Solution

C

Ready-to-use indicator solution in 50 %
ethanol

HS-No.: 38220000
EC-No.: 204-729-7

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1993
Danger
H225
P233-P210



Composition:

Thymolphthalein (A1738) ... 0.1 %

Order-No.	Quantity
A0467,0100	100 ml
A0467,0500	500 ml
A0467,1000	1 L

Thymolsulfonephthalein see Thymol blue Page 815

Thymolsulfonephthalein sodium salt see Thymol blue sodium salt water-soluble Page 815

Thyroglobulin, human

B

Tg
lyophilized from 20 mM NH_4HCO_3
from human thyroids

HS-No.: 38220000

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A6986,0100	100 µg
A6986,0001	1 mg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION. For reconstitution, use of phosphate buffer (pH > 7.0) containing 150 mM NaCl is recommended.

Thyroid-Peroxidase (TPO), human

B

TPO
supplied liquified
from human thyroids

HS-No.: 38220000

Storage: -20°C

Specification:

Protein min. 0.1 mg/ml

Order-No.	Quantity
A6988,0010	10 µg
A6988,0100	100 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Thyroxin Binding Globulin (TBG), human

B

TBG
lyophilized from 20 mM NH_4CO_3
from human serum

HS-No.: 38220000

Storage: 2-8°C

Specification:

Assay (SDS-PAGE) min. 70 %

Order-No.	Quantity
A6993,0100	100 µg
A6993,0001	1 mg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Thyroxin Binding Prealbumin see Prealbumin, human Page 662

Tiamulin see Myco-1 Page 554

Tin(II) chloride dihydrate

Cl₂Sn · 2H₂O
M = 225.63 g/mol
CAS-No.: 10025-69-1
HS-No.: 28273910

Storage: RT
LGK: 10 - 13
Disposal: 15

WGK: 1
Warning
H319-H335-H302-H317-H315
P302+P352-P280-P305+P351+P338



Tin(II) chloride dihydrate p. A.

C

Specification:

Assay (titr.) min. 99 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.01 %
Identity complies
Ammonium max. 0.005 %

Sulfate max. 0.005 %
As max. 0.0002 %
Ca max. 0.005 %
Cu max. 0.001 %
Fe max. 0.002 %
K max. 0.005 %

Order-No.	Quantity
A5181,0100	100 g
A5181,0250	250 g
A5181,1000	1 kg
A5181,10006	6 x 1 kg

Tin(II) chloride dihydrate pure Ph. Eur.

C

Specification:

Assay (titr.) 98.0 - 102.0 %
Appearance of solution complies
Heavy metals (as Pb) max. 0.005 %
Identity complies
Subst. not precip. by thioacetamide

Sulfate max. 0.2 %
Fe max. 0.05 %
Fe max. 0.01 %

Order-No.	Quantity
A4815,0100	100 g
A4815,0500	500 g
A4815,1000	1 kg
A4815,10006	6 x 1 kg

Tin(II) chloride dihydrate Technical grade

C

Specification:

Assay (titr.) min. 96 %

Order-No.	Quantity
A5183,0250	250 g
A5183,0500	500 g
A5183,1000	1 kg
A5183,10006	6 x 1 kg

Tin(IV) oxide pure

C

Melting point 1630°C

SnO₂
M = 150.69 g/mol
CAS-No.: 18282-10-5
HS-No.: 28259085
EC-No.: 242-159-0

Storage: RT
LGK: 10 - 13

WGK: nwg

Specification:

Assay (RFA) min. 99 %
Acid-soluble Fe max. 0.01 %
Acid-soluble Pb max. 0.05 %
Acid-soluble subst. max. 0.2 %
Loss on ignition (900°C) max. 0.2 %

Order-No.	Quantity
A2594,0250	250 g
A2594,0500	500 g
A2594,1000	1 kg
A2594,10006	6 x 1 kg

Tin(II) sulfate pure

C

Decomposition temp. 378°C

O₄SSn
M = 214.77 g/mol
CAS-No.: 7488-55-3
HS-No.: 28332980
EC-No.: 231-302-2

Storage: RT
LGK: 10 - 13
Disposal: 15

WGK: 1

Specification:

Assay (titr.) min. 96 %
Insoluble matter (dil. HCl) max. 0.5 %
Chloride max. 0.1 %
Fe max. 0.01 %
Sb max. 0.2 %

Order-No.	Quantity
A2593,0100	100 g
A2593,0250	250 g
A2593,1000	1 kg
A2593,10006	6 x 1 kg

TiO₂ see Titanium(IV) oxide pure Page 818

TISAB - Solutions for detection of fluoride

"Total Ionic Strength Adjustment Buffer" Solution

HS-No.: 38220000

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

TISAB - Solution for detection of fluoride

C

Composition:

CDTA min. 3.6 g/L
NaCl min. 58 g/L

Specification:

pH (H₂O; 20°C) 5.0 - 6.0
Fluoride max. 0.1 ppm

Order-No.	Quantity
A1749,0100	100 ml
A1749,0500	500 ml
A1749,1000	1 L
A1749,10006	6 x 1 L

CDTA = 1,2-Cyclohexane dinitriilotetraacetic acid monohydrate

TISAB III - Solution for detection of fluoride

C

Composition:

CDTA 18.0 - 20.0 g/L
 NH₄Cl 128.0 - 132.0 g/L

Specification:

pH (H₂O; 20°C) 5.0 - 5.5
 Fluoride max. 0.1 ppm

Order-No.
A6572,0100
A6572,0250
A6572,0500

Quantity
 100 ml
 250 ml
 500 ml

CDTA = 1,2-Cyclohexane dinitrilotetraacetic acid monohydrate

Titan acid anhydride see Titanium(IV) oxide pure Page 818

Titanium dioxide see Titanium(IV) oxide pure Page 818

Titanium(IV) oxide pure

C

Titan acid anhydride, TiO₂, Titanium dioxide

O₂Ti
M = 79.90 g/mol
 CAS-No.: 13463-67-7
 HS-No.: 28230000
 EC-No.: 236-675-5

Storage: RT
 LGK: 10 - 13
 Disposal: 14

WGK: nwg
 P360

Boiling point 2900°C
 Melting point 1855°C

Specification:

Assay (titr.) min. 99 %
 HCl-soluble matter max. 0.5 %
 Loss on drying max. 0.5 %
 Loss on ignition max. 0.5 %
 Sulfate max. 0.05 %

As max. 0.0005 %
 Fe max. 0.005 %
 Pb max. 0.005 %

Order-No.
A1900,0500
A1900,1000
A1900,10006
A1900,5000

Quantity
 500 g
 1 kg
 6 x 1 kg
 5 kg

Titanium(III) sulfate - Solution 15 % pure

C

HS-No.: 28332980

Storage: RT

Class / PG: 8/II
 UN3264
 Danger
 H314
 P305+P351+P338-P313

**Specification:**

Assay (titr.) min. 15 %
 Sulfuric acid min. 1.5 %

Order-No.
A3131,0500
A3131,1000
A3131,2500

Quantity
 500 ml
 1 L
 2.5 L

Titan yellow (C.I. 19540)

C

Naphthamine G, Thiazol yellow G, Azidin yellow 5 G

C₂₈H₁₉N₅Na₂O₆S₄
M = 695.73 g/mol
 CAS-No.: 1829-00-1
 HS-No.: 32041900
 EC-No.: 217-377-4

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 3*

Transition interval pH 12.0 - 13.0
 (yellow - red)

Specification:

λ_{max} (buffer pH 7.0) 398 - 402 nm
 E 1 %/1 cm, λ_{max} (buffer pH 7.0)
 min. 350
 Loss on drying max. 10 %

Order-No.
A2437,0010
A2437,0025
A2437,0100

Quantity
 10 g
 25 g
 100 g

Titan yellow - Solution

C

ready-to-use indicator solution in diluted ethanol

HS-No.: 38220000
 EC-No.: 217-377-4

Storage: RT
 LGK: 10 - 13
 Disposal: 1

Composition:

Titan yellow (A2437) 0.1 %

Order-No.
A0528,0100
A0528,0500

Quantity
 100 ml
 500 ml

TLCK see N_ε-Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) BioChemica Page 823**TLE buffer**

B

HS-No.: 38220000

Storage: RT

Composition:

EDTA (A1103) 1.46 g/L (0.005 M)
 Lithium chloride (A0958) ... 4.24 g/L (0.1 M)
 Tris (A1086) 24.23 g/L (0.2 M)

Specification:

pH (20°C) 8.2 ± 0.1

Order-No.
A4573,0500
A4573,1000
A4573,5000

Quantity
 500 ml
 1 L
 5 L

Tli Inorganic Pyrophosphatase

B

from *Thermococcus litoralis*

HS-No.: 35079090

Storage: -20°C

◆ supplied with 1X reaction buffer

◆ Application

- increasing the yield of products during PCR reactions.
- reducing the background in sequencing reactions.

Specification:

Concentration 1000 Units/ml

Order-No.	Quantity
A7448,0020	20 U
A7448,0100	100 U

Comment: *Tli* Inorganic Pyrophosphatase (PPase) catalyzes the hydrolysis of inorganic pyrophosphate to form orthophosphate $P_2O_7^{4-} + H_2O \rightarrow 2HPO_4^{2-}$. This enzyme has been purified from the extreme thermophile *Thermococcus litoralis*. The enzyme has been expressed and purified from an *E. coli* strain that carries the cloned Inorganic Pyrophosphatase gene from *Thermococcus litoralis*.

Unit definition: One unit is the amount of enzyme that will generate 40 nmoles of phosphate per minute from pyrophosphate under standard reaction conditions (50 mM Tris - HCl (pH 8.5), 1 mM $MgCl_2$, 0.32 mM PP) at 75°C.

Tli pyrophosphatase is an archaeal protein which exhibits extreme high thermostability and maintains 100 % of its activity after being incubated at 100°C in the absence of Mg^{2+} for 4 hours. Its optimal temperature is 75°C. *Tth* pyrophosphatase is another prokaryotic enzyme and is less thermostable in comparison to *Tli*. Its optimal temperature is 65°C. Both enzymes may be used in a number of reactions where pyrophosphate is an inhibiting compound. You may choose one of them according to the temperature of the reaction.

TMACl see Tetramethylammonium chloride (TMACl) *BioChemica* Page 808

TMB see 3,3',5,5'-Tetramethylbenzidine *BioChemica* Page 808

TMCS see Trimethylchlorosilane Page 834

TMEDA see TEMED Page 801

TMSDEA see Trimethylsilyldiethylamine Page 834

TMSIM see 1-Trimethylsilylimidazole Page 834

rHu TNF-α bioconfident grade



B

recombinant Human Tumor Necrosis Factor-α

M = 19.6 kDa

HS-No.: 29371900

Storage: -20°C

Avoid repeated freeze-thaw cycles.

Sterile filtered through a 0.2 μm filter.

Lyophilized from PBS, pH 7.2.

from *Hordeum vulgare*

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:

Endotoxin (LAL test) max. 0.05 EU/μg

Pyrogen test (MAT) complies

Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8871,0010	10 μg
A8871,0050	50 μg
A8871,0100	100 μg
A8871,1000	1 mg

Comment: Recombinant human TNF-α is a 19.6 kDa protein containing 158 amino acids residues and contains a 16 amino acid Histidine-based tag for a total length of 174 amino acids. The recombinant protein migrates as two bands with an apparent molecular mass of 21 and 23 kDa, respectively, in SDS-PAGE.

rHu TNF-α



B

recombinant Human Tumor Necrosis Factor-α

M = 17.48 kDa

HS-No.: 29371900

Storage: -20°C

Lyophilized from a sterile solution containing 10 mM sodium phosphate and 20 mM sodium chloride, (pH 8.0).
from *E. coli*

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Endotoxin max. 0.1 EU/μg

Assay (HPLC) min. 98 %

Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8324,0010	10 μg
A8324,0050	50 μg
A8324,1000	1 mg

Comment: Recombinant Human Tumor Necrosis Factor-α (rHu TNF-α) is secreted by macrophages, monocytes, neutrophils, T-cells, NK-cells following their stimulation by bacterial LPS. Cells expressing CD4 secrete TNF-α while CD8 cells secrete little or no TNF-α. The synthesis of TNF-α is induced by many different stimuli including interferons, IL2, and GM-CSF. rHu TNF-α, produced in *E. coli* is a single, non-glycosylated, polypeptide chain that contains 158 amino acids and has a molecular mass of 17.48 kDa.

rM TNF- α

B

recombinant Mouse Tumor Necrosis
Factor- α
Each mg contains 50 mM Tris * HCl, pH
8 and 20 mM NaCl.
from *Streptomyces lividans*

$M = 17.30$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Assay (HPLC) min. 98 %
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A8297,0005	5 μ g
A8297,0020	20 μ g
A8297,0100	100 μ g

Comment: Recombinant Mouse TNF- α produced in *S. lividans* is a single, non-glycosylated, polypeptide chain containing 156 amino acids and having a molecular mass of 17.30 kDa.

rR TNF- α

B

recombinant Rat Tumor Necrosis Factor-
 α
lyophilized without additives
from *E. coli*

$M = 17.34$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Assay (HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8320,0005	5 μ g
A8320,0020	20 μ g
A8320,0100	100 μ g

Comment: TNF is secreted by macrophages, monocytes, neutrophils, T-cells, NK-cells following their stimulation by bacterial LPS. Cells expressing CD4 secrete TNF- α while CD8 cells secrete little or no TNF- α . The synthesis of TNF- α is induced by many different stimuli including interferons, IL2, GM-CSF. Recombinant Rat TNF- α produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 157 amino acids and having a molecular mass of 17.34 kDa.

rHu TNF- β bioconfident grade

B

recombinant Human Tumor Necrosis
Factor- β
Sterile filtered through a 0.2 μ m filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

$M = 20.8$ kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
Endotoxin (LAL test) max. 0.05 EU/ μ g
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8875,0010	10 μ g
A8875,0050	50 μ g
A8875,0100	100 μ g
A8875,1000	1 mg

Comment: Recombinant human TNF- β contains 171 amino acids and a 16 amino acid Histidine-based tag for a total length of 187 amino acids and has a predicted molecular mass of 20.8 kDa. As a result of glycosylation, the recombinant protein migrates as three bands with an apparent molecular mass of 20, 23 and 27 kDa, respectively, in SDS-PAGE.

rHu TNFSF11 see rHu RANKL Page 682
rM TNFSF11 see rM RANKL Page 683
Tn-I see Troponin I, human Page 841

TNM-FH - Insect medium (modified Grace's Insect medium)

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

TNM-FH - Insect medium (modified Grace's Insect medium)

B

modified Grace's Insect medium
without L-Glutamine
with Lactalbumin hydrolysate
without Sodium hydrogen carbonate

Order-No.	Quantity
A2037,1000	1 L
A2037,5000	5 L
A2037,9010	10 L
A2037,9050	50 L

TNM-FH - Insect medium (modified Grace's Insect medium)

B

with L-Glutamine
with Lactalbumin hydrolysate
without Sodium hydrogen carbonate

Order-No.	Quantity
A1570,1000	1 L
A1570,5000	5 L
A1570,9010	10 L
A1570,9050	50 L

Tn-T see Troponin T, human Page 841

DL-α-Tocopherol *BioChemica*

B

Vitamin E alcohol

C₂₉H₅₀O₂
M = 430.72 g/mol
CAS-No.: 10191-41-0
HS-No.: 29362800
EC-No.: 233-466-0

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: nwg

Specification:

Assay (HPLC) min. 98 %
E 1 %/1 cm, λ₂₉₂ nm, EtOH . 73 - 76
Heavy metals max. 0.002 %

Order-No.	Quantity
A2232,0050	50 g
A2232,0100	100 g
A2232,0250	250 g

DL-α-Tocopherol acetate

Vitamin E acetate

C₃₁H₅₂O₃
M = 472.76 g/mol
CAS-No.: 7695-91-2
HS-No.: 29362800
EC-No.: 231-710-0

Storage: 2-8°C
LGK: 10 - 13
Disposal: 3

WGK: 1

Boiling point > 300°C
Density 0.96 g/cm³
Melting point -275°C

DL-α-Tocopherol acetate *BioChemica*

B

Specification:

Assay min. 97 %
E 1 %/1 cm, λ₂₉₄ nm, EtOH . 42 - 45
Heavy metals max. 0.002 %
Tocopherol max. 1.0 %

Order-No.	Quantity
A2230,0050	50 g
A2230,0100	100 g
A2230,0500	500 g

DL-α-Tocopherol acetate pure Ph. Eur.

C

Specification:

Assay 96.5 - 101.0 %
Appearance clear, colorless to faintly greenish yellow, viscous liquid
Identity complies
Related subst. complies

Order-No.	Quantity
A6420,0025	25 g
A6420,0100	100 g
A6420,0250	250 g

Tolonium chloride see Toluidine blue (C.I. 52040) Page 823

Toluene

Methylbenzene

C₇H₈
M = 92.14 g/mol
CAS-No.: 108-88-3
HS-No.: 29023000
EC-No.: 203-625-9

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1294
WGK: 2
Danger
H373-H361-H315-H336-H304-H225
P331-P301+P310-P210-P302+P352



Boiling point 111°C
Density (d 20°C/4°C) .. 0.867
Melting point -95°C
n 20°C/D 1.4961

Toluene ultrapure

C

Specification:

Assay (HPLC) min. 99.9 %
Non-volatile matter max. 0.0002 %
Total P max. 0.02 ppm
Total S max. 0.1 ppm
Total Si max. 0.02 ppm
Benzene max. 0.02 %

m-Xylene	 max. 0.02 %	K	 max. 0.05 ppm
Water (K.F.)	 max. 0.01 %	Mg	 max. 0.02 ppm
Ca	 max. 0.05 ppm	Na	 max. 0.2 ppm
Cr	 max. 0.005 ppm	Ni	 max. 0.005 ppm
Cu	 max. 0.01 ppm	Pb	 max. 0.005 ppm
Fe	 max. 0.05 ppm	Zn	 max. 0.01 ppm

Order-No.	Quantity
A3966,0250	250 ml
A3966,0500	500 ml
A3966,1000	1 L
A3966,2500	2.5 L
A3966,25004	4 x 2,5 L

Toluene Residue analysis grade

C

Specification:

Assay (HPLC) min. 99.8 %
Acidity/Alkalinity max. 0.0005 meq/g
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.02 %
GC/ECD (retention range lindane to DDT) individual signals (lindane standard) max. 5 ng/L
GC/PND (retention range parathion to coumaphos) individual signals (ethylparathion standard) max. 10 ng/L

Order-No.	Quantity
A1597,2500	2.5 L
A1597,25004	4 x 2,5 L

Toluene GPC grade

C

To be used in gel permeation chromatography, filtered through 0.2 μm filter.

Specification:

Assay (HPLC) min. 99.8 %
Color max. 10 APHA
Non-volatile matter max. 0.0005 %
Water (K.F.) max. 0.01 %

Order-No.	Quantity
A2474,0500	500 ml
A2474,1000	1 L
A2474,2500	2.5 L

Toluene HPLC grade

C

Specification:

Assay (HPLC)	min. 99.8 %	A (1 cm/water HPLC grade)
Acidity/Alkalinity	max. 0.0005 meq/g	290 nm max. 0.25
Non-volatile matter	max. 0.0005 %	300 nm max. 0.10
Water (K.F.)	max. 0.01 %	310 nm max. 0.05
		330 nm max. 0.01
		350 nm max. 0.005

Order-No.	Quantity
A1599,1000	1 L
A1599,10006	6 x 1 L
A1599,2500	2.5 L
A1599,25004	4 x 2,5 L

Toluene dried, p. A.

C

Specification:

Assay (HPLC)	min. 99.8 %
Non-volatile matter	max. 0.0005 %
Water (K.F.)	max. 0.005 %

Order-No.	Quantity
A0527,0500	500 ml
A0527,1000	1 L
A0527,10006	6 x 1 L
A0527,2500	2.5 L
A0527,25004	4 x 2,5 L

◆ This product contains molecular sieve as a drying agent!

Toluene p. A.

C

Specification:

Assay (HPLC)	min. 99.8 %	K	max. 0.00005 %
Non-volatile matter	max. 0.001 %	Mg	max. 0.00001 %
Total P	max. 0.00001 %	Na	max. 0.0001 %
Total S	max. 0.003 %	Pb	max. 0.00001 %
Total Si	max. 0.000005 %	Zn	max. 0.00001 %
Benzene	max. 0.05 %		
Xylene	max. 0.05 %		
Water (K.F.)	max. 0.03 %		
Ca	max. 0.0005 %		
Cu	max. 0.000002 %		
Fe	max. 0.00001 %		

Order-No.	Quantity
A1732,0500	500 ml
A1732,1000	1 L
A1732,10006	6 x 1 L
A1732,2500	2.5 L
A1732,25004	4 x 2,5 L
A1732,5000	5 L
A1732,9010	10 L
A1732,9025BK	25 L
A1732,9025PE	25 L

Toluene pure

C

Specification:

Assay (HPLC)	min. 99 %
Free acid	max. 0.002 %
Water (K.F.)	max. 0.1 %
Cu	max. 0.0001 %
Fe	max. 0.0001 %
Pb	max. 0.0001 %

Order-No.	Quantity
A1159,1000	1 L
A1159,10006	6 x 1 L
A1159,2500	2.5 L
A1159,25004	4 x 2,5 L
A1159,5000	5 L
A1159,9010	10 L
A1159,9025BK	25 L
A1159,9025PE	25 L

Toluene Technical grade

C

Specification:

Assay (HPLC)	min. 98 %
Water (K.F.)	max. 0.25 %
Fe	max. 0.01 %
Pb	max. 0.01 %

Order-No.	Quantity
A3393,2500	2.5 L
A3393,25004	4 x 2,5 L
A3393,5000	5 L
A3393,9010	10 L
A3393,9025BK	25 L
A3393,9025PE	25 L

Toluene D₈

C

Boiling point	110°C
Density (d 20°C/4°C)	0.94
Melting point	-85°C

C ₇ D ₈
M = 100.19 g/mol
CAS-No.: 2037-26-5
HS-No.: 28459010
EC-No.: 218-009-5

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1294
WGK: 2
Danger
H225-H304-H336-H361-H315-H373
P331-P301+P310-P210-P302+P352



Specification:

Deuteration degree	min. 99.5 %

Order-No.	Quantity
DS-18,0005	5 ml
DS-18,0025	25 ml

Toluene-4-sulfonechloramide sodium see Chloramine T trihydrate Page 200

Toluidine blue (C.I. 52040)

B

Toluidine blue-O zinc chloride double salt, Tolonium chloride

$C_{30}H_{32}Cl_2N_6S_2 \cdot ZnCl_2$
 $M = 747.96$ g/mol
 CAS-No.: 92-31-9
 HS-No.: 32041300
 EC-No.: 202-146-2

Storage: RT
 LGK: 10 - 13

WGK: 3*

Solubility (25°C) 20 g/L (H₂O)

Specification:

Assay min. 85 %
 λ_{max} (H₂O) 623 - 633 nm
 Identity (UV/VIS) complies

Loss on drying max. 8 %

Order-No.	Quantity
A3842,0005	5 g
A3842,0010	10 g

Literature: (1) Feder, N. & Wolf, M.K. (1965) *J. Cell Biol.* **27**, 327-336

(2) Ehrig, T. *et al.* (2001) *J. Mol. Diag.* **3**, 22-25

(3) Sarli, G. *et al.* (1999) *Biotechnic & Histochem.* **74**, 64-76

Metachromatic and Orthochromatic Staining by Toluidine blue of Nucleic Acids in Tissue Sections.
 Quantitative Amplification of Genomic DNA from Histological Tissue Sections after Staining with Nucleic Dyes and Laser Capture Microdissection.
 Evaluating Mitotic Activity in Canine and Feline Solid Tumors: Standardizing the Parameter.

Comment: Paraffin-embedded and frozen tissue sections were stained with different nuclear dyes. Nucleic acids isolated from these samples were amplified in PCR reactions. Staining of Paraffin-embedded section was carried out for 2 minutes in an aqueous 0.01 % Toluidine blue solution, while frozen samples were stained for 30 seconds in 0.1 % Toluidine blue (2). Toluidine blue will stain DNA blue-green while RNA is stained purple (1). The dye is soluble in water (3.82 g/100 ml).

Toluidine blue-O zinc chloride double salt see Toluidine blue (C.I. 52040) Page 823

Toluylene red see Neutral red (C.I. 50040) Page 564

Tornatin see α -Solanine HPLC grade Page 757

TOOS BioChemica

B

3-(N-Ethyl-3-methylanilino)-2-hydroxypropanesulfonic acid sodium salt

$C_{12}H_{18}NNaO_4S$
 $M = 295.33$ g/mol
 CAS-No.: 82692-93-1
 HS-No.: 29213099

Storage: RT

Specification:

Assay (titr.) min. 98 % (calculated on anhydrous substance)

Water (K.F.) max. 2 %

Order-No.	Quantity
A1496,0001	1 g
A1496,0005	5 g

Literature: (1) Tamaoku, K. *et al.* (1982) *Chem. Pharm. Bull.* **30**, 2492-2497

New water-soluble hydrogen donors for the enzymatic photometric determination of Hydrogen peroxide. II. *N*-Ethyl-*N*-(2-hydroxy-3-sulfopropyl)aniline derivatives.

Comment: TOOS is a water-soluble hydrogen donor for the enzymatic, photometric determination of H₂O₂ with peroxidase. The color reaction (λ_{max} 555 nm) is based on the oxidative condensation of TOOS with 4-aminoantipyrin. The water solubility is 11 % at +5°C (1).

Toronto-Starch see Starch Page 772

N α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) BioChemica

B

N α -Tosyl-L-lysyl-chloromethane hydrochloride, (3S)-7-Amino-1-chloro-3-tosylamino-2-heptanone hydrochloride, TLCK

$C_{14}H_{21}ClIN_2O_5S \cdot HCl$
 $M = 369.31$ g/mol
 CAS-No.: 4272-74-6
 HS-No.: 29420000
 EC-No.: 224-266-4

Storage: -20°C
 LGK: 10 - 13
 Disposal: 3

Melting point 163 - 165°C

Specification:

Assay (titr.) min. 99 %
 α 24°C/D; 5 %, H₂O -9° - -10°

Order-No.	Quantity
A1799,0100	100 mg
A1799,0250	250 mg
A1799,0500	500 mg
A1799,0001	1 g

Literature: (1) Shaw, E. *et al.* (1965) *Biochemistry* **4**, 2219-2224

(2) Mumford, R. *et al.* (1981) *Biochem Biophys. Res. Com.* **103**, 565-572

(3) Solomon, D.H. *et al.* (1985) *FEBS. Lett.* **190**, 342-344

(4) Marrakchi, N. *et al.* (1995) *Biochim. Biophys. Acta* **1244**, 147-156

(5) Kupfer, A. *et al.* (1979) *Proc. Natl. Acad. Sci. USA* **76**, 3073-3077

Evidence for an active center histidine in trypsin through use of a specific reagent, 1-Chloro-3-tosylamido-7-amino-2-heptanone, the Chloromethyl ketone from N α -Tosyl-L-lysine.
 Protease activity present in wheat germ and rabbit reticulocytes lysates.
 N α -tosyl-L-lysine chloromethyl ketone and N α -tosyl-L-phenylalanine chloromethyl ketone inhibit protein kinase C.
 Cerastocytin, a new thrombin-like platelet activator from the venom of the tunisian viper *Cerastes cerastes*.
 Affinity labeling of the catalytic subunit of cyclic AMP-dependent protein kinase by N α -tosyl-L-lysine chloromethyl ketone.

N α -Tosyl-L-lysyl-chloromethane hydrochloride see N α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) BioChemica Page 823

Tosyl-L-phenylalanine chloromethyl ketone (TPCK)

B

N-Tosyl-L-phenylalanylchloromethane,
TPCK

C₁₇H₁₈ClNO₃S
M = 351.85 g/mol
CAS-No.: 402-71-1
HS-No.: 29350090
EC-No.: 206-954-6

Storage: -20°C
LGK: 10 - 13
Disposal: 3

Danger
H315-H335-H318
P305+P351+P338



Melting point 105 - 108°C

Specification:

Assay (from C) min. 99 %
α20°C/D; 1 %, EtOH -86 - -90°

Order-No.	Quantity
A1801,0250	250 mg
A1801,0500	500 mg
A1801,0001	1 g

Literature: (1) Schoellmann, G. & Shaw, E. (1963) *Biochemistry* **2**, 252-255
(2) Ong, B.E. et al. (1965) *J. Biol. Chem.* **240**, 694-698
(3) Goldberg, A.L. et al. (1961) *Methods Enzymol.* **80**, 680-702

Direct evidence for the presence of histidine in the active center of chymotrypsin.
The identification of the histidine residue at the active center of chymotrypsin.
Proteases in *Escherichia coli*.

N-Tosyl-L-phenylalanylchloromethane see Tosyl-L-phenylalanine chloromethyl ketone (TPCK) Page 824
Total Ionic Strength Adjustment Buffer Solution see TISAB - Solutions for detection of fluoride Page 817
Toxin F2 see Zearalenone *BioChemica* Page 874
TPA see Phorbol-12-myristate-13-acetate (PMA) Page 622
TPCK see Tosyl-L-phenylalanine chloromethyl ketone (TPCK) Page 824

TPE buffer

Tris-Phosphate-EDTA buffer
Electrophoresis buffer for DNA

HS-No.: 38220000

Storage: RT

TPE buffer (10X)

B

Composition:

EDTA 0.5 M (pH 8.0) 40 mL/L
Phosphoric acid 85 % 15.5 mL/L
Tris 108 g/L

Specification:

pH (20°C) 7.5 - 7.8

Order-No.	Quantity
A3843,0500	500 ml
A3843,1000	1 L
A3843,5000	5 L

TPE buffer (1X)

B

Composition:

EDTA 0.5 M (pH 8.0) 4 mL/L
Phosphoric acid 85 % 1.55 mL/L
Tris 10.8 g/L

Specification:

pH (20°C) 7.5 - 7.8

Order-No.	Quantity
A3435,1000	1 L
A3435,5000	5 L
A3435,9010	10 L

Literature: (1) Sambrook, J. & Russell, D.W. (2001) *Molecular Cloning: A Laboratory Manual*, 3rd Edition. Seite 5.8 und A1.17. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.
(2) Li, T.-K. et al. (2003) *Cancer Res.* **63**, 8400-8407
Characterization of ARC-111 as a Novel Topoisomerase I-Targeting Anticancer Drug.

Comment: The final concentration of the 1X buffer is for Tris 90 mM and for EDTA 2 mM.

TPO see Thyroid-Peroxidase (TPO), human Page 816

rM TPO



B

recombinant Mouse Thrombopoietin
lyophilized without additives
from *E. coli*

M = 18.7 kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8541,0002	2 µg
A8541,0010	10 µg

Comment: We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted into other aqueous solutions.

TPTZ see Tetrazolium red Page 809
rM TRANCE see rM RANKL Page 683
Transfection reagent AppliFect see AppliFect Page 114
Transfection reagent for mammalian cells with siRNA or miRNA see Electrophoresis Size Marker/Standard Protein Page 325
Transfection reagent for very sensitive cells see AppliFect LowTox Page 115
Transfection reagent optimized for insect cells see AppliFect Insect Page 115

Transfer Membranes: Nitrocellulose, Nylon, PVDF

Storage: RT

Reprobe Nitrocellulose supported 0.22 µm Transfer Membrane

B

Nitrocellulose - Transfer membrane

HS-No.: 39207990

◆ Application

- Southern and Northern blots; Dot/Slot blots
- Multiple Reprobing
- Colony lifts, Plaque lifts

◆ Features and Benefits

- Supported: Has added strength and durability allowing multiple reprobing
- Greatest binding capacity of nitrocellulose with 100 µg/cm²

Specification:

Nucleic Acid Binding 100 µg/cm²

Pore size 0.22 µm

supplied as sheets (20 cm x 20 cm), as discs (82 mm diameter) or as a roll (30 cm x 3 m)

Order-No.

A5237,2020S5

A5237,8250D

A5237,3030R

Quantity

5 Sheet

50 Disc

1 Roll

Comment: Reprobe Nitrocellulose Supported Transfer Membrane - is an internally supported nitrocellulose membrane that combines the binding characteristics of nitrocellulose with the strength of nylon. Reprobe Nitrocellulose - supported is ideal for applications where nitrocellulose has been used in the past such as DNA / RNA / Protein transfers. However, it outperforms unsupported nitrocellulose when extensive handling is required such as reprobing or colony and plaque lifts. Due to a unique process of impregnating pure nitrocellulose polymer onto an inert polyester web produces a very strong, dimensionally stable hybridization membrane. The inert web provides dimensional strength to prevent curling, cracking and tearing even after baking. This ensures the highest binding nitrocellulose membrane, approximately 100 µg/cm². There is nothing to lower the binding capacity such as cellulose acetate or other additives. This combination is especially important in colony and plaque lifts and multiple reprobing or any other procedure requiring rigorous handling. Membrane breakage is eliminated, reducing the cost due to wasted time, materials, and lost data. Many researchers have reprobed Reprobe Nitrocellulose Supported Transfer Membrane as many as five times. In all protocols using nitrocellulose, Reprobe Nitrocellulose - supported may be substituted without making any changes in the protocol while maintaining the same high signal and low backgrounds. All membranes are Triton free and do not contain any other cytotoxins.

Reprobe Nitrocellulose supported 0.45 µm Transfer Membrane

B

HS-No.: 39207990

◆ Application

- Southern and Northern blots; Dot/Slot blots
- Multiple Reprobing
- Colony lifts, Plaque lifts

◆ Features and Benefits

- Supported: Has added strength and durability allowing multiple reprobing
- Greatest binding capacity of nitrocellulose with 100 µg/cm²

Specification:

Nucleic Acid Binding 100 µg/cm²

Pore size 0.45 µm

supplied as sheets (20 cm x 20 cm), as discs (82 mm or 137 mm diameter) or as rolls (15 cm or 20 cm or 30 cm x 3 m)

Order-No.

A5242,2020S5

A5242,8250D

A5242,13750D

A5242,3015R

A5242,3020R

A5242,3030R

Quantity

5 Sheet

50 Disc

50 Disc

1 Roll

1 Roll

1 Roll

Comment: For further informations please see comments for A5237.

Pure Nitrocellulose unsupported 0.22 µm Transfer Membrane

B

HS-No.: 39207990

◆ Application

- Southern and Northern blots; Dot/Slot blots
- Western blots
- Immunoblotting

◆ Features and Benefits

- Low background, Easily blocked
- Cellulose acetate free - assuring high binding and sensitivity

Specification:

Nucleic Acid Binding 100 µg/cm²

Pore size 0.22 µm

supplied as sheets (20 cm x 20 cm) or as a roll (30 cm x 3 m)

Order-No.

A5250,2020S5

A5250,3030R

Quantity

5 Sheet

1 Roll

Comment: Pure Nitrocellulose Unsupported Transfer membrane - is a pure unsupported nitrocellulose and is the membrane of choice for all protein or immunoblotting applications. Pure Nitrocellulose Unsupported Transfer membrane does not contain cellulose acetate, a low binding polymer. This assures the highest binding and sensitivity (100 µg/cm²). Nitrocellulose exhibits the highest sensitivity with very low backgrounds in all transfers, especially in protein blotting. Unlike PVDF, nitrocellulose wets out naturally, does not require methanol, and will not turn hydrophobic during the transfer process. Nitrocellulose is very easily blocked and does not need the many blocking steps required with PVDF. Excellent results will be obtained with all detection systems: antibody/antigen, radiolabelled, biotinylated, and chemiluminescent, giving you a great amount of flexibility in designing your procedure.

Pure Nitrocellulose unsupported 0.45 µm Transfer Membrane

B

HS-No.: 39207990

◆ Application

- Southern and Northern blots; Dot/Slot blots
- Western blots
- Immunoblotting

◆ Features and Benefits

- Low background, Easily blocked
- Cellulose acetate free - assuring high binding and sensitivity

Specification:

Nucleic Acid Binding 100 µg/cm²

Pore size 0.45 µm

supplied as sheets (20 cm x 20 cm or 30 cm x 50 cm), as discs (82 mm diameter) or as rolls (15 cm or 20 cm or 30 cm x 3 m)

Order-No. Quantity

A5239,2020S5 5 Sheet

A5239,3050S5 5 Sheet

A5239,8250D 50 Disc

A5239,3015R 1 Roll

A5239,3020R 1 Roll

A5239,3030R 1 Roll

Comment: For further informations please see comments for A5250.

Pure Nylon Neutral Transfer Membrane 0,22 µm (30 cm x 3 m)

B

Nylon - Transfer membrane

HS-No.: 39207990

◆ Application

- Southern-, Northern-, alkaline blots; Micro and Macro arrays; Dot/Slot blots
- Radiolabeled detection and chemiluminescent systems
- Colony lifts, Plaque lifts, Library screening

◆ Features and Benefits

- Supported: Has added strength and durability preventing distortion or contamination in multiple reprobing
- Greater binding capacity: With a binding capacity of 350 µg/cm², this membrane can bind a wide range of fragment sizes, increasing the efficiency of transfers
- Hydrophilic: Eliminates the need for wetting agents that can potentially interfere with biological processes

Specification:

Max. operating temperature 180°C

Thickness 65 - 125 µm

Nucleic Acid Binding 350 µg/cm²

Pore size 0.22 µm

Order-No. Quantity

A4399,3030R 1 Roll

Comment: This membrane is due to its tight pore size suited for the binding of lower base pairs, while the same type of Nylon membrane with a loose pore size of 0.45 µm is well suited for standard transfers.

Pure Nylon Neutral Transfer Membrane 0.45 µm

B

HS-No.: 39207990

◆ Application

- Southern-, Northern-, alkaline blots; Micro and Macro arrays; Dot/Slot blots
- Radiolabeled detection and chemiluminescent systems
- Colony lifts, Plaque lifts, Library screening

◆ Features and Benefits

- Supported: Has added strength and durability preventing distortion or contamination in multiple reprobing
- Greater binding capacity: With a binding capacity of 350 µg/cm², this membrane can bind a wide range of fragment sizes, increasing the efficiency of transfers
- Hydrophilic: Eliminates the need for wetting agents that can potentially interfere with biological processes

Specification:

Max. operating temp. 180°C

Nucleic Acid Binding 350 µg/cm²

Pore size 0.45 µm

Thickness 65 - 125 µm

supplied as discs (82 mm or 137 mm diameter) or as a roll (30 cm x 3 m)

Order-No. Quantity

A5248,8250D 50 Disc

A5248,13750D 50 Disc

A5248,3030R 1 Roll

Comment: The Pure Nylon Neutral Transfer Membrane, a supported nylon membrane, is optimal for all traditional DNA and RNA transfers. Pure Nylon has a higher binding capacity (approx. 350 µg/cm²) than nitrocellulose membrane and binds a greater range of fragment sizes. Pure Nylon membrane is naturally hydrophilic, eliminating the need for wetting agents that can potentially interfere with biological processes. Pure Nylon membrane wets out quickly and evenly and will never turn hydrophobic during hybridization, UV crosslinking Pure Nylon is an excellent way to attach nucleic acids. By exposing a nylon membrane to a UV source, a covalent bond forms between the membrane and the DNA or RNA, which maximizes signal retention after reprobing. Due to a unique impregnation process, Pure Nylon has many advantages. Nylon is impregnated onto an integral polyester support web giving the nylon added dimensional strength, which prevents cracking, tearing, curling, and breaking. This is essential to protocols requiring aggressive handling, such as colony and plaque lifts and multiple reprobings. Using Pure Nylon by avoiding membrane breakage can save a significant amount of time and money.

Reprobe Nylon Positively Charged Transfer Membrane 0.45 µm (30 cm x 3 m)

B

Size: Roll 30 cm wide, 3 m long

HS-No.: 39207990

◆ Application

- Southern-, Northern-, alkaline blots; Micro and Macro arrays
- Radiolabeled detection and chemiluminescent systems
- multiple reprobing

◆ Features and Benefits

- Inherently charged: Enhances nucleic acid binding - even under alkaline conditions
- Supported: Has added strength and durability preventing distortion or contamination in multiple reprobing
- Greater binding capacity: With a binding capacity of 450 µg/cm², this membrane can bind a wide range of fragment sizes and can still be easily blocked for low background
- Hydrophilic: Eliminates the need for wetting agents that can potentially interfere with biological processes
- Excellent signal: Better retains DNA resulting in a strong signal using smaller quantities of DNA

Specification:

Nucleic Acid Binding 450 µg/cm² (BSA)
 Thickness 65 - 125 µm
 Pore size: optimized for DNA Binding

Order-No. Quantity
A5255,3030R 1 Roll

Comment: The Reprobe Nylon transfer membrane is an inherently charged nylon membrane, specifically designed to allow for numerous reprobing. Reprobe Nylon has been tested to provide consistent results through 12 or more reprobing. The high binding capacity of 450 µg/cm² makes Reprobe Nylon ideal for all Southern and Northern applications, including alkaline blotting. Reprobe Nylon is ideally suited for all probes both radioactive and non-radioactive, including chemiluminescent and biotinylated detection systems. Reprobe Nylon offers significantly increased binding, maximum "lot-to-lot" consistency, and excellent signal retention. The inherent charge on this nylon membrane along with its hydrophilic nature make consistent repeatable results a reality for researchers. After 12 rounds of reprobing, Reprobe Nylon has a lower background and higher signal.

PVDF-Star Transfer Membrane 0.45 µm

B

Blotting membranes, Polyvinylidene
 fluoride transfermembran, PVDF -
 Transfer membran

HS-No.: 39209953

◆ Application

- Western blots
- Immunoblotting
- Amino acid and protein analysis

◆ Features and Benefits

- Superior strength: Can withstand aggressive handling or be used with automated equipment without breaking or tearing.
- Exceptional sensitivity: Detects low-level components
- Hydrophobic: Resists water
- High binding capacity: Binds a wide range of fragment sizes
- High range of chemical compatibility: Resistant to most commonly used chemicals and chemically aggressive solvents

Specification:

Pore size 0.45 µm
 Protein binding 125 µg/cm²
 Thickness 140 - 250 µm
 supplied as sheets (20 cm x 20 cm) or as a roll (30 cm x 3 m)

Order-No. Quantity
A5243,2020S 5 Sheet
A5243,3030R 1 Roll

Comment: PVDF-Star is a naturally hydrophobic, unsupported polyvinylidene fluoride transfer membrane, designed to deliver the highest binding capacity combined with low backgrounds in western transfer, amino acid analysis and protein sequencing applications. Exceptional quality control procedures throughout the manufacturing process eliminates "lot-to-lot" variation and greatly minimizes "bald spot" problems. PVDF assures reproducible results with maximum sensitivity.

Protein can be electroblotted from a variety of gel matrices onto PVDF-Star. Because of its high sensitivity and strong binding affinity, protein will not pass through the membrane. The broad chemical compatibility of PVDF-Star allows the use of all commonly used stains such as: Amido Black, Colloidal Gold, Coomassie Blue, India Ink and Ponceau-S. PVDF-Star will not degrade, distort or shrink when using high concentrations of methanol for destaining. The exceptional tensile strength allows for multiple reprobing and easy removal of target bands without concern for the membrane tearing, fracturing or curling.

The appearance of a membrane, soaked in organic solvents: Due to the hydrophobic nature of PVDF membranes, such membranes have to be soaked in organic solvents during the blotting procedure. The whole surface is rapidly wetted in methanol or ethanol directly or by capillary forces. Our PVDF membrane is composed of a smooth lower layer and a rough upper surface. Wetting leads to a milky appearance of the membrane. While the wet lower layer appears transparent, the rough upper surface looks opaque due to the light refraction. The rough upper surface is placed on the gel, because it has the larger surface and therefore a higher binding capacity for proteins.

To assure you of the highest binding and to eliminate sample "blow through", regardless of how small your peptides may be, AppliChem will offer other pore size ratings on request. As standard product, AppliChem offers the 0.45 micron pore size.

PVDF-Star exhibits efficient transfer of proteins in a wide range of molecular weights, from 5 kDaltons to 700 kDaltons. The binding capacity averages 125 µg/cm² for larger globular proteins such as immunoglobulins and higher binding capacities for small peptides.

apo-Transferrin, human

B

M = ~77000 g/mol
 CAS-No.: 11096-37-0
 HS-No.: 30021095
 EC-No.: 309-222-5

Storage: 2-8°C

Specification:

Assay min. 95 %
 Loss on drying max. 5 %
 pH (1 %; H₂O; 20°C) 6.5 - 7.5
 Fe/g protein max. 50 µg

Order-No. Quantity
A3008,0100 100 mg
A3008,0250 250 mg
A3008,0001 1 g

holo-Transferrin, human

B

$M = \sim 80000 \text{ g/mol}$
 CAS-No.: 11096-37-0
 HS-No.: 30021095
 EC-No.: 309-222-5

Storage: 2-8°C

Specification:

Assay min. 95 %
 Loss on drying max. 5 %
 pH (1 %; H_2O) 6.5 - 7.5 (20°C)
 Fe/g protein min. 1000 µg

Order-No.	Quantity
A3124,0100	100 mg
A3124,0250	250 mg
A3124,0001	1 g

apo-Transferrin, bovine

B

HS-No.: 30021099
 EC-No.: 234-318-8

Storage: 2-8°C

Specification:

Bioburden max. 100 cfu/g
 Endotoxin max. 1.0 EU/mg

Mycoplasma test complies
 Assay (Protein) 96.0 - 104.0 %
 pH 7.0 - 8.0
 Fe/g protein ca. 40.0 µg

Order-No.	Quantity
A8227,0100	100 mg

holo-Transferrin, bovine

B

Solubility 200 g/L (H_2O)

HS-No.: 30021099
 EC-No.: 234-318-8

Storage: 2-8°C

Specification:

Bioburden max. 100cfu/g
 Endotoxins max. 1.0 EU/mg
 Assay (Protein) min. 95 %
 Loss on drying max. 5 %
 Mycoplasma test complies

pH 7.0 - 8.0
 Fe/g protein min. 1200 µg

Order-No.	Quantity
A8204,0050	50 mg
A8204,0100	100 mg
A8204,0500	500 mg
A8204,1000	1 g

recombinant Human Transforming Growth Factor- β 3 see rHu TGF- β 3 Page 810
 Transthyretin see Prealbumin, human Page 662
 Trasylol® see Aprotinin BioChemica Page 116

D(+)-Trehalose dihydrate BioChemica

B

α -D-Glucopyranosyl- α -D-glucopyranoside, Mycose

$\text{C}_{12}\text{H}_{22}\text{O}_{11} \cdot 2\text{H}_2\text{O}$
 $M = 378.34 \text{ g/mol}$
 CAS-No.: 6138-23-4
 HS-No.: 29400000
 EC-No.: 202-739-6

Storage: RT
 LGK: 10 - 13

Specification:

Assay min. 99 %
 α 20°C/D; 7 %, H_2O +176 - +180°
 Residue on ignition max. 0.1 %
 Solubility (5 %; H_2O) clear, colorless

Order-No.	Quantity
A1742,0025	25 g
A1742,0050	50 g
A1742,0100	100 g
A1742,0250	250 g

Tremortin A see Penitrem A BioChemica Page 602
 Tretinoin see Retinoic acid pure Ph. Eur. Page 685
 Triacetin see Glycerol triacetate Page 386

Triacin C BioChemica

B

WS1228A, 2,4,7-Undecatrienal
 nitrosohydrazone, 2E,4E,7E-
 Undecatriene-1-triazene

$\text{C}_{11}\text{H}_{17}\text{N}_3\text{O}$
 $M = 207.27 \text{ g/mol}$
 CAS-No.: 76896-80-5
 HS-No.: 29419000

Storage: -20°C
 protected from light
 Shipment: wet ice

Specification:

Assay approx. 94 %
 Solubility (25 mg/ml in DMSO) clear

Order-No.	Quantity
A7828,0001	1 mg

Triacylglycerol acylhydrolase see Lipase, human Page 490
 Triacylglycerol lipase see Lipase from porcine pancreas Page 490

Tributyryn BioChemica

B

Glyceryl tributyrat, 1,2,3-
 Tributyrin/glycerol

$\text{C}_{15}\text{H}_{26}\text{O}_6$
 $M = 302.37 \text{ g/mol}$
 CAS-No.: 60-01-5
 HS-No.: 29156019
 EC-No.: 200-451-5

Storage: RT
 WGK: 1

Boiling point 287 - 288°C

Specification:

Assay (HPLC) min. 98 %
 Density (d 25°C) 1.027 - 1.037 g/cm³
 Heavy metals (as Pb) max. 0.001 %
 Identity (IR) complies

Order-No.	Quantity
A8574,0025	25 ml
A8574,0100	100 ml

1,2,3-Tributyrylglycerol see Tributyrin *BioChemica* Page 828
 Tricaine methanesulfonate salt see 3-Aminobenzoic acid ethyl ester methanesulfonate *BioChemica* Page 87
 Tricalcium citrate see *tri*-Calcium dicitrate tetrahydrate pure Page 180
 Trichloroacetaldehyde hydrate see Chloral hydrate pure Ph. Eur. Page 200
 3 % Trichloroacetic acid in dichloromethane see Detritylation - Solution DNA synthesis grade Page 269

Trichloroacetic acid (TCA)

Melting point 52 - 58°C
 Solubility (20°C) 1600 g/L (H₂O)

C₂HCl₃O₂
M = 163.39 g/mol
 CAS-No.: 76-03-9
 HS-No.: 29154000
 EC-No.: 200-927-2

Storage: RT
 LGK: 8 B
 Disposal: 4

Class / PG: 8/II
 UN1839
 WGK: 2
 hygroscopic
 Danger
 H335-H314-H410
 P280-P305+P351+P338-P273-
 P301+P330+P331



Trichloroacetic acid (TCA) *BioChemica*

B

Specification:

Assay (titr.) min. 99 %
 Sulfated ash max. 0.1 %
 Loss on drying max. 0.3 %
 Fe max. 0.005 %

Order-No.	Quantity
A1431,0250	250 g
A1431,0500	500 g
A1431,1000	1 kg

Literature: (1) Polacheck, I. & Cabib, E. (1981) *Anal. Biochem.* **117**, 311-314

(2) Cabib, E. & Polacheck, I. (1984) *Methods Enzymol.* **104**, 415-416

A simple procedure for protein determination by the Lowry method in dilute solutions and in the presence of interfering substances.
 Protein assay for dilute solutions.

Comment: Protein-containing solutions with less than 25-50 µg protein / ml have to be concentrated for the application in the Lowry assay. Therefore, proteins are precipitated with trichloroacetic acid (TCA, 10 % solution) and RNA as a carrier. In addition, this enables to remove substances, that interfere with the Lowry assay (e. g. Triton® X-100, ref. 1).

Trichloroacetic acid (TCA) pure Ph. Eur.

C

Specification:

Assay 98.0 - 100.5 %
 Appearance of solution complies
 Chloride max. 0.01 %
 Identity complies
 Sulfated ash max. 0.1 %

Order-No.	Quantity
A5055,0500	500 g
A5055,1000	1 kg
A5055,10006	6 x 1 kg

Trichloroacetic acid - Solutions

TCA - Solution
 aqueous solution

HS-No.: 29154000

Storage: RT
 LGK: 8 B
 Disposal: 4

Class / PG: 8/II
 UN2564
 WGK: 2

Trichloroacetic acid - Solution 20 % *BioChemica*

B

Danger
 H335-H411-H314
 P301+P330+P331-P305+P351+P338-
 P273-P280



Specification:

Assay (titr.) 19.95 - 20.05 %
 pH (20°C) <1.0

Order-No.	Quantity
A0590,0500	500 ml
A0590,1000	1 L
A0590,5000	5 L

Trichloroacetic acid - Solution 10 % *BioChemica*

B

Danger
 H411-H314
 P301+P330+P331-P305+P351+P338-
 P273-P280



Specification:

Assay (titr.) 9.95 - 10.05 %
 pH (20°C) <1.0

Order-No.	Quantity
A3844,0500	500 ml
A3844,1000	1 L
A3844,5000	5 L

1,2,4-Trichlorobenzene GPC grade

C

To be used in gel permeation chromatography, filtered through 0.2 µm filter.

$C_6H_3Cl_3$
 $M = 181.45$ g/mol
 CAS-No.: 120-82-1
 HS-No.: 29036990
 EC-No.: 204-428-0

Storage: RT
 LGK: 10 - 13
 Disposal: 2

Class / PG: 6.1/III
 UN2321
 WGK: 3
 Warning
 H302-H410-H315
 P273-P302+P352



Boiling point 213°C
 Density (d 20°C/4°C) .. 1.45
 Melting point 17°C
 n 20°C/D 1.5707

Specification:

Assay (HPLC) min. 99 %
 Color max. 10 APHA
 Non-volatile matter max. 10 ppm
 Water (K.F.) max. 0.02 %

Order-No.	Quantity
A0526,0500	500 ml
A0526,1000	1 L
A0526,10006	6 x 1 L
A0526,2500	2.5 L
A0526,25004	4 x 2,5 L

1,1,2-Trichloroethene see Trichloroethylene Page 830

Trichloroethylene

Ethylene trichloride, 1,1,2-Trichloroethene

C_2HCl_3
 $M = 131.39$ g/mol
 CAS-No.: 79-01-6
 HS-No.: 29032200
 EC-No.: 201-167-4

Storage: RT
 protected from light
 LGK: 10 - 13
 Disposal: 2

Class / PG: 6.1/III
 UN1710
 WGK: 3
 Danger
 H315-H319-H341-H412-H350-H336
 P273-P201-P305+P351+P338-
 P302+P352-P308+P313



Boiling point 87°C
 Melting point -86°C
 Solubility (20°C) 0.4 g/L (H₂O)

Trichloroethylene p. A.

C

Specification:

Assay (HPLC) min. 99.0 %
 Free chlorine max. 0.00005 %
 Water (K.F.) max. 0.01 %
 Al max. 0.00005 %
 Co max. 0.000002 %
 Cr max. 0.000002 %
 Cu max. 0.000002 %

Fe max. 0.00001 %
 Mn max. 0.000002 %
 Ni max. 0.000002 %
 Pb max. 0.00001 %
 Zn max. 0.00001 %

Order-No.	Quantity
A2719,0500	500 ml
A2719,1000	1 L
A2719,10006	6 x 1 L
A2719,2500	2.5 L
A2719,25004	4 x 2,5 L
A2719,5000	5 L

Trichloroethylene pure

C

Specification:

Assay (HPLC) min. 99 %
 Non-volatile matter max. 0.001 %
 Loss on drying max. 0.01 %
 Chloride max. 0.0001 %

Order-No.	Quantity
A2724,1000	1 L
A2724,10006	6 x 1 L
A2724,2500	2.5 L
A2724,25004	4 x 2,5 L
A2724,5000	5 L
A2724,9010	10 L
A2724,9025	25 L

Trichloroethylene for synthesis

C

Specification:

Assay (HPLC) min. 99 %

Order-No.	Quantity
A2516,1000	1 L
A2516,10006	6 x 1 L
A2516,2500	2.5 L
A2516,25004	4 x 2,5 L
A2516,5000	5 L
A2516,9010	10 L
A2516,9025	25 L

Trichloromethane see Chloroform Page 204

Trichostatin A BioChemica

B

Antibiotic A300
 from *Streptomyces platensis*

$C_{17}H_{22}N_2O_3$
 $M = 302,37$ g/mol
 CAS-No.: 58880-19-6
 HS-No.: 29280090

Storage: -20°C

Warning
 H332-H317-H315-H312-H319-H335-
 H302
 P305+P351+P338-P280-P261



Melting point 141 - 143°C

Specification:

Assay approx. 97 %
 λ_{max} 265, 340 nm
 Solubility DMSO, EtOH

Order-No.	Quantity
A7812,0001	1 mg
A7812,0005	5 mg

Trichothecen see T2 Toxin BioChemica Page 789

Tricine

<i>N</i> -[Tris-(hydroxymethyl)-methyl]-glycine	C ₆ H ₁₃ NO ₅ <i>M</i> = 179.17 g/mol CAS-No.: 5704-04-1 HS-No.: 29225000 EC-No.: 227-193-6	Storage: RT LGK: 10 - 13 Disposal: 28
Melting point	186 - 188°C (dec.)	
Useful pH range	pH 7.4 - 8.8	
pK _a (20°C)	8.15	

Tricine Molecular biology grade

B

Specification:	Order-No.	Quantity
DNases/RNases/Proteases not detectable	A3954,0100	100 g
Assay (titr.) min. 99.5 %	A3954,0250	250 g
Loss on drying max. 0.3 %	A3954,0500	500 g
Chloride max. 0.1 %	A3954,1000	1 kg
Sulfate max. 0.005 %		

Tricine Cell culture grade

B

Specification:	Order-No.	Quantity
Pyrogen test complies	A4807,0100	100 g
Assay (titr.) min. 99.5 %	A4807,0250	250 g
Loss on drying max. 0.3 %	A4807,0500	500 g
Chloride max. 0.1 %	A4807,1000	1 kg
Sulfate max. 0.005 %		

Tricine BioChemica

B

Specification:	Order-No.	Quantity
Assay (titr.) min. 99 %	A1085,0100	100 g
IR spectrum complies	A1085,0250	250 g
pH (1 %; H ₂ O; 25°C) 4.6 - 5.6	A1085,0500	500 g
Loss on drying max. 0.3 %	A1085,1000	1 kg
Chloride max. 0.1 %	A1085,5000	5 kg
Sulfate max. 0.005 %		

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
 (2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
 (3) Ferguson, W.J. *et al.* (1980) *Anal. Biochem.* **104**, 300-310

Hydrogen ion buffers for biological research.
 Hydrogen ion buffers.
 Hydrogen ion buffers for biological research.

Comment: Tricine may substitute Tris in many assay systems, even with some advantages (2). Tricine weakly binds Mg²⁺, Ca²⁺ and Mn²⁺ stronger and Cu²⁺ strongly. If Cu²⁺ is added to the Folin protein assay, it does not interfere.

n-Tridecyl-β-D-maltoside Crystallography grade

B

Aggregation No. (N ₀) .105	C ₂₅ H ₄₈ O ₁₁ <i>M</i> = 524.64 g/mol HS-No.: 29389090	Storage: 2-8°C
CMC (25°C) .0.033 mM		
Classification: nonionic detergent		

Specification:	Order-No.	Quantity
Assay min. 99.5 %	A6771,0001	1 g
α20°C/D; 1 %, H ₂ O +45° ± 2°	A6771,0005	5 g
Solubility (10 %; H ₂ O; 21°C) clear, colorless	A6771,0010	10 g
Thermal transition (isotropic) 250 - 260°C		

Thermal transition (smectic A) A (1 cm/1 %, water HPLC grade)
 108 - 114°C 260 nm max. 0.04
 α-Isomere (HPLC) max. 0.01 %
n-Tridecanol (HPLC) max. 0.001 %

Triethanolamine

2,2',2''-Nitrilotriethanol, Tris-(2-hydroxyethyl)-amine	C ₆ H ₁₅ NO ₃ <i>M</i> = 149.19 g/mol CAS-No.: 102-71-6 HS-No.: 29221310 EC-No.: 203-049-8	Storage: RT LGK: 10 - 13 Disposal: 1	WGK: 1
Melting point	20 - 22°C		
Useful pH range	pH 7.0 - 8.3		
n 20°C/D	1.481 - 1.486		
pK _a (25°C)	7.76		

Triethanolamine BioChemica

B

Specification:	Order-No.	Quantity
Assay (HPLC) min. 99 %	A1423,1000	1 L
Diethanolamine max. 0.5 %	A1423,2500	2.5 L
Ethanolamine max. 0.1 %	A1423,5000	5 L
Chloride max. 0.0001 %		

Triethanolamine pure

C

Specification:

Assay (titr.)	min. 99 %
Heavy metals (as Pb)	max. 0.001 %
Diethanolamine	max. 0.5 %
Ethanolamine	max. 0.1 %
Water (K.F.)	max. 0.5 %
Chloride	max. 0.01 %
Sulfate	max. 0.005 %

Order-No.	Quantity
A5932,1000	1 L
A5932,10006	6 x 1 L
A5932,2500	2.5 L
A5932,25004	4 x 2,5 L
A5932,5000	5 L
A5932,9010	10 L

Triethanolamine hydrochloride BioChemica

B

Tris-(2-hydroxyethyl)-ammonium chloride

$C_6H_{15}NO_3 \cdot HCl$
 $M = 185.65 \text{ g/mol}$
 CAS-No.: 637-39-8
 HS-No.: 29221390
 EC-No.: 211-284-2

Storage: RT
 LGK: 10 - 13
 Disposal: 3

Melting point 176 - 180°C
 Useful pH range pH 7.0 - 8.3
 pK_a (25°C) 7.76

Specification:

Assay (titr.)	min. 99 %
Fe	max. 0.0005 %
Pb	max. 0.0005 %

Order-No.	Quantity
A1424,0100	100 g
A1424,0500	500 g
A1424,1000	1 kg

Triethylamine

N,N-Diethylethylamine

$C_6H_{15}N$
 $M = 101.19 \text{ g/mol}$
 CAS-No.: 121-44-8
 HS-No.: 29211999
 EC-No.: 204-469-4

Storage: RT
 LGK: 3 A
 Disposal: 5

Class / PG: 3(8)/II
 UN1296
 WGK: 1
 Danger
 H302-H335-H225-H332-H312-H314
 P305+P351+P338-P210-P280-
 P301+P330+P331-P302+P352



Boiling point 88 - 90°C
 Density (20°C) 0.73 g/cm³
 Melting point -115°C

Triethylamine BioChemica

B

Specification:

Assay (HPLC)	min. 99 %
IR-Spectrum	complies
Non-volatile matter	max. 0.005 %
Water (K.F.)	max. 0.2 %

Order-No.	Quantity
A3845,0025	25 ml
A3845,0100	100 ml
A3845,0500	500 ml

Triethylamine pure

C

Specification:

Assay (HPLC)	min. 99 %
Boiling point	88 - 89°C
Refractive index (20°C)	1.395 - 1.405
Water (K.F.)	max. 0.5 %

Order-No.	Quantity
A4038,1000	1 L
A4038,10006	6 x 1 L
A4038,2500	2.5 L
A4038,25004	4 x 2,5 L
A4038,5000	5 L

Triethylammonium acetate buffer pH 7.0 (1 M)

B

Purification of oligonucleotides

$C_6H_{15}N \cdot CH_3COOH$
 $M = 161.25 \text{ g/mol}$
 CAS-No.: 5204-74-0
 HS-No.: 29211100
 EC-No.: 225-995-0

Storage: RT
 LGK: 10 - 13

WGK: 1

Density (d 20°C/4°C) .. 1.001

Specification:

Non-volatile matter	max. 0.01 %
pH	6.9 - 7.1

Order-No.	Quantity
A3846,0100	100 ml
A3846,0500	500 ml
A3846,1000	1 L

Literature: (1) Usher, D.A. (1979) *Nucleic Acids Res.* **6**, 2289-2306

- (2) Mellis, S.J. & Baenziger, J.U. (1983) *Anal. Biochem.* **134**, 442-449
 (3) Eriksson, S. et al. (1986) *J. Chromatogr.* **359**, 265-274

Reverse-Phase HPLC von DNA-Restriktionsfragmenten und Ribooligonukleotiden an unbeschichtetem K₁₈-F - Pulver.
 Size Fractionation of Anionic Oligosaccharides and Glycopeptides by HPLC.
 Separation of DNA Restriction Fragments by Ion-Pair Chromatography.

Triethylammonium formate buffer pH 6.0 (1 M)

B

TEAF
 limited shelf life!

$C_6H_{15}N \cdot HCOOH$
 $M = 147.22 \text{ g/mol}$
 CAS-No.: 585-29-5
 HS-No.: 38220000

Storage: RT
 LGK: 10 - 13
 Disposal: 3

WGK: 1
 volatile

Specification:

Residue after evaporation	max. 0.01 %
pH (1 M)	5.9 - 6.1

Order-No.	Quantity
A3100,0100	100 ml
A3100,0500	500 ml
A3100,1000	1 L

Triethylammonium phosphate buffer pH 3.0 (1 M)

B

TEAP

HS-No.: 38220000
EC-No.: 233-389-2

Storage: RT
LGK: 10 - 13
Disposal: 3

Specification:

Assay 1 M
Heavy metals max. 0.0005 %
Insoluble matter complies
pH (25°C) 2.9 - 3.1

A (1 cm/water HPLC grade)
260 nm max. 0.04
280 nm max. 0.03

Order-No. Quantity
A3120,0100 100 ml
A3120,0500 500 ml
A3120,1000 1 L

Triethyl citrate pure Ph. Eur., NF

C

Citric acid triethyl ester

C₁₂H₂₀O₇
M = 276.29 g/mol
CAS-No.: 77-93-0
HS-No.: 29181500
EC-No.: 201-070-7

Storage: RT
LGK: 10
Disposal: 1

WGK: 1

Boiling point 294°C (1013 hPa)

Specification:

Assay (GC; calc. dry subst.) 99.0 - 100.5 %
Assay (titr., calc. on dried substance) 98.5 - 101.0 %
Acidity complies
Appearance clear, colorless li-
quid

Density (d 25°C/25°C) .. 1.135 - 1.139
Heavy metals (as Pb) .. max. 0.0005 %
Identity (IR) complies
Related subst. complies
Sulfated ash (600°C) ... max. 0.1 %
n 20°C/D 1.440 - 1.446
n 25°C/D 1.439 - 1.441
Residual solvents complies
Water (K.F.) max. 0.25 %

Order-No. Quantity
A6925,0500 500 ml
A6925,1000 1 L

Trifluoroacetic acid

Boiling point 72°C
Density (20°C) 1.487 - 1.489 g/
cm³
Melting point -15°C

C₂HF₃O₂
M = 114.02 g/mol
CAS-No.: 76-05-1
HS-No.: 29159000
EC-No.: 200-929-3

Storage: RT
LGK: 8 B
Disposal: 4

Class / PG: 8/1
UN2699
WGK: 2
Danger
H332-H314-H412
P273-P305+P351+P338-P271-
P301+P330+P331


Trifluoroacetic acid Spectroscopy grade

C

Specification:

Assay (titr.) min. 99.9 %
Non-volatile matter max. 0.005 %
Water (K.F.) max. 0.05 %

A (1 cm/water HPLC grade)
280 nm max. 0.05
300 nm max. 0.03
320 nm max. 0.025

Order-No. Quantity
A2038,0025 25 ml
A2038,0100 100 ml
A2038,0250 250 ml

Trifluoroacetic acid HPLC grade

C

Specification:

Assay (titr.) min. 99.9 %
Non-volatile matter max. 0.005 %
Water (K.F.) max. 0.05 %

A (1 cm/water HPLC grade)
260 nm max. 0.9
280 nm max. 0.05
300 nm max. 0.03
320 nm max. 0.025

Order-No. Quantity
A5540,0005 5 ml
A5540,0010 10 ml
A5540,0025 25 ml

Trifluoroacetic acid BioChemica

B

Specification:

Assay (titr.) min. 99.5 %
Loss on drying max. 0.1 %
Chloride max. 0.001 %
Fluoride max. 0.005 %

Sulfate max. 0.001 %

Order-No. Quantity
A0697,0025 25 ml
A0697,0100 100 ml
A0697,0250 250 ml

Trifluoroacetic acid for synthesis

C

Specification:

Assay (titr.) min. 99 %
Identity complies

Order-No. Quantity
A7421,0100 100 ml
A7421,0250 250 ml

Trifluoroacetic acid - Solution 25 %

B

TFA - Solution

HS-No.: 29159000

Storage: RT
LGK: 8 B
Disposal: 4

Class / PG: 8/1
UN2699
WGK: 2
Danger
H332-H412-H314
P273-P271-P301+P330+P331-
P305+P351+P338


Density (d 20°C/4°C) .. 1.12

Composition:

Trifluoroacetic acid (A0697) . 250 g/L

Order-No. Quantity
A0669,0050 50 ml
A0669,0100 100 ml

N-(ϵ -Trifluoroacetylcaproyloxy) succinimide ester see TFCS Page 810
2,2,2-Trifluoro-N,O-bis-(trimethylsilyl)-acetamide see Bis-(trimethylsilyl)-trifluoroacetamide Page 147
Trifolitin see Isoquercitrin Page 466

Trifolirhizin HPLC grade

B

from *Baptisia tinctoria*

$C_{22}H_{22}O_{10}$
 $M = 446.40$ g/mol
CAS-No.: 6807-83-6
HS-No.: 29420000

Storage: 2-8°C

Specification:

Assay min. 96 %

Order-No.
A7971,0020

Quantity
20 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Trifolitin see Kaempferol Page 468
1,2,3-Trihydroxybenzene see Pyrogallol pure Page 678
3,4,5-Trihydroxybenzoic acid propyl ester see n-Propyl gallate pure Ph. Eur. Page 670
3 α ,7 α ,12 α -Trihydroxy-5 β -cholic acid see Cholic acid *BioChemica* Page 209
3,4,5-Trihydroxy-1-cyclohexenecarboxylic acid see Shikimic acid pure Page 711
4',5,7-Trihydroxyflavone see Apigenin Page 112
5,6,7-Trihydroxyflavone see Baicalein Page 125
4',5,7-Trihydroxyisoflavone see Genistein *BioChemica* Page 372
11 β ,17 α ,21-Trihydroxyprogesterone see Hydrocortisone *BioChemica* Page 420
2,6,8-Trihydroxypurine see Uric acid *BioChemica* Page 851
Triiodomethane see Iodoform pure Page 456
3-(Trimethoxysilyl)propyl methacrylate see 3-Methacryloxypropyl trimethoxysilane Page 532
P'-[2-(Trimethylammonioethyl)]-ester cytidine 5'-(trihydrogen diphosphate) inner salt see Citicoline sodium salt *BioChemica* Page 213

Trimethylchlorosilane

C

Chlorotrimethylsilane, *TMCS*

C_3H_9ClSi
 $M = 108.64$ g/mol
CAS-No.: 75-77-4
HS-No.: 29310099
EC-No.: 200-900-5

Storage: RT
LGK: 3 A
Disposal: 24

Class / PG: 3(8)/II
UN1298
WGK: 1
Danger
EUH014-H225-H314-H335
P210-P305+P351+P338-
P301+P330+P331-P403+P235-P280



Boiling point 57°C
Melting point -58°C
n 20°C/D 0.856

Specification:

Assay (HPLC) min. 99 %

Order-No.
A1658,0025
A1658,0100
A1658,0250

Quantity
25 ml
100 ml
250 ml

Comment: Mild silylating agent, moisture sensitive.

2,2,4-Trimethylpentane see Isooctane Page 464

Trimethylsilyldiethylamine

C

TMSDEA

$C_7H_{19}NSi$
 $M = 145.33$ g/mol
CAS-No.: 996-50-9
HS-No.: 29310099
EC-No.: 213-637-6

Storage: RT
LGK: 3 A
Disposal: 5

Class / PG: 3/II
UN1993
WGK: 1
Danger
H225-H314
P305+P351+P338-P280-
P301+P330+P331-P403+P235-P210



Boiling point 125°C

Specification:

Assay (HPLC) min. 97 %

Order-No.
A1661,0005
A1661,0010
A1661,0025

Quantity
5 ml
10 ml
25 ml

Comment: Strongly basic silylating agent; Formation of a volatile reaction product.

1-Trimethylsilylimidazole

C

TMSIM

$C_6H_{12}N_2Si$
 $M = 140.26$ g/mol
CAS-No.: 18156-74-6
HS-No.: 29332990
EC-No.: 242-040-3

Storage: RT
LGK: 10 - 13
Disposal: 24

WGK: 1

Boiling point 93 - 94°C/14 mm
Melting point -42°C
n 20°C/D 1.4751

Specification:

Assay (HPLC) min. 97 %

Order-No.
A1659,0005
A1659,0010
A1659,0025

Quantity
5 ml
10 ml
25 ml

Comment: Strong silylating agent, which does not react with amines. Fast reactions with carboxylic acids and hydroxy-compounds.

N,N,N'-Trimethylthionin see Azure B (C.I. 52010) Page 124
 2,4,6-Trinitrophenol - Solution, saturated see Pikric acid - Solution 1.2 % Page 628
 Trioxohydrindene hydrate see Ninhydrin p. A. Page 567
 2,3,5-Triphenyltetrazolium chloride see Tetrazolium red Page 809

Tris

Tris base, Tromethamine, THAM, Tris-
 (hydroxymethyl)-aminomethane, 2-
 Amino-2-(hydroxymethyl)-propane-1,3-
 diol, Trometamol

$C_4H_{11}NO_3$
 $M = 121.14$ g/mol
 CAS-No.: 77-86-1
 HS-No.: 29221985
 EC-No.: 201-064-4

Storage: RT
 LGK: 10 - 13
 Disposal: 28

WGK: 2
 Warning
 H315-H319
 P305+P351+P338-P302+P352



Tris Molecular biology grade

B

Melting point 168 - 173°C
 Solubility (20°C) 800 g/L (H₂O)
 Useful pH range pH 7.2 - 9.0
 pK_a (20°C) 8.3

Specification:

DNases/RNases/Proteases not detectable
 Assay (titr.) min. 99.9 %
 pH (1 M; H₂O) 10.5 - 11.5 (20°C)
 Loss on drying max. 0.2 %
 Cu max. 0.0001 %
 Fe max. 0.0001 %

Pb max. 0.0001 %

A (1 cm/1 M in H₂O)
 260 nm max. 0.03
 280 nm max. 0.02
 430 nm max. 0.004

Order-No.	Quantity
A2264,0250	250 g
A2264,0500	500 g
A2264,1000	1 kg
A2264,5000	5 kg

Tris ultrapure

B

Melting point 168 - 173°C
 Solubility (20°C) 800 g/L (H₂O)
 Useful pH range pH 7.2 - 9.0
 pK_a (20°C) 8.3

Specification:

Assay (titr.) min. 99.9 %
 pH (1 M; H₂O; 20°C) 10.5 - 11.5
 Loss on drying max. 0.2 %
 Cu max. 0.0001 %
 Fe max. 0.0001 %
 Pb max. 0.0001 %

A (1 cm/1 M in H₂O)
 260 nm max. 0.03
 280 nm max. 0.02
 430 nm max. 0.004

Order-No.	Quantity
A1086,0500	500 g
A1086,1000	1 kg
A1086,10006	6 x 1 kg
A1086,5000	5 kg
A1086,9010	10 kg

Tris pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.001 %
 Identity complies
 Loss on drying max. 0.5 %
 Melting range 168 - 172°C
 Related subst. complies

Sulfated ash max. 0.1 %
 pH (5 %; H₂O) 10.0 - 11.5
 Chloride max. 0.01 %
 Fe max. 0.001 %

Order-No.	Quantity
A2756,0500	500 g
A2756,1000	1 kg
A2756,10006	6 x 1 kg
A2756,5000	5 kg
A2756,9010	10 kg
A2756,9025	25 kg

Tris Buffer grade

B

Melting point 168 - 173°C
 Solubility (20°C) 800 g/L (H₂O)
 Useful pH range pH 7.2 - 9.0
 pK_a (20°C) 8.3

Specification:

Assay (titr.) min. 99.3 %
 Heavy metals (as Pb) max. 0.001 %
 pH (1 M; H₂O; 20°C) 10.5 - 12.0
 Loss on drying max. 0.5 %

Order-No.	Quantity
A1379,0500	500 g
A1379,1000	1 kg
A1379,10006	6 x 1 kg
A1379,5000	5 kg
A1379,9010	10 kg
A1379,9025	25 kg

Literature: (1) Good, N.E. *et al.* (1966) *Biochemistry* **5**, 467-477
 (2) Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68
 (3) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87

Hydrogen ion buffers for biological research.
 Hydrogen ion buffers.
 Electrophoresis in agarose and acrylamide gels.

Comment: Tris is the most commonly used buffer in biological research. One of the most important applications is the use as electrophoresis buffer such as TBE (see A1417 and A0972) or TAE (see A1416 and A1691) for polyacrylamide and agarose gel electrophoresis, respectively. Tris should not be used at pH values below pH 7.2 or above pH 9.0. The pH value of a Tris buffer strongly depends on the temperature. Therefore, Tris buffers should be prepared at the temperature where it is used. Besides, dilution of concentrated Tris buffers will result in a decrease in the pH value of 0.1 pH units per tenfold dilution. Please take into account when preparing RNase-free reagents by DEPC-treatment that Tris will inactivate DEPC. In addition, Tris may form Schiff bases with aldehydes and ketones.

Tris Technical grade

C

Melting point 168 - 173°C
Solubility (20°C) 800 g/L (H₂O)
Useful pH range pH 7.2 - 9.0
pK_a (20°C) 8.3

Specification:

Assay (titr.) min. 98 %
Loss on drying max. 1 %

Order-No.	Quantity
A7455,0500	500 g
A7455,1000	1 kg
A7455,10006	6 x 1 kg
A7455,5000	5 kg
A7455,9010	10 kg
A7455,9025	25 kg

Tris buffer (1 M)

aqueous Solution

HS-No.: 38220000

Storage: RT

Tris buffer pH 6.8 (1 M)

B

Composition:

Tris (A1086) 121.14 g/L (1 M)

Specification:

pH (20°C; adjusted with HCl)
..... 6.8 ± 0.2

Order-No.	Quantity
A4987,0500	500 ml
A4987,1000	1 L
A4987,5000	5 L

Tris buffer pH 7.0 (1 M) Molecular biology grade

B

Composition:

Tris (A2264) 121.14 g/L (1 M)

Specification:

DNases/RNases/Proteases not detectable
pH (20°C; adjusted with HCl)
..... 7.0 ± 0.2

Order-No.	Quantity
A5247,0500	500 ml
A5247,1000	1 L

Tris buffer pH 7.4 (1 M) Molecular biology grade

B

Composition:

Tris (A2264) 121.14 g/L (1 M)

Specification:

DNases/RNases/Proteases not detectable
pH (20°C; adjusted with HCl)
..... 7.4 ± 0.1

Order-No.	Quantity
A3981,0500	500 ml
A3981,1000	1 L

Tris buffer pH 7.4 (1 M)

B

Composition:

Tris (A1086) 121.14 g/L (1 M)

Specification:

pH (20°C; adjusted with HCl)
..... 7.4 ± 0.2

Order-No.	Quantity
A3148,0500	500 ml
A3148,1000	1 L
A3148,5000	5 L

Tris buffer pH 7.5 (1 M) Molecular biology grade

B

Composition:

Tris (A2264) 121.14 g/L (1 M)

Specification:

DNases/RNases/Proteases not detectable
pH (20°C; adjusted with HCl)
..... 7.5 ± 0.2

Order-No.	Quantity
A4263,0500	500 ml
A4263,1000	1 L

Tris buffer pH 7.6 (1 M) Molecular biology grade

B

Composition:

Tris (A2264) 121.14 g/L (1 M)

Specification:

DNases/RNases/Proteases not detectable
pH (20°C; adjusted with HCl)
..... 7.6 ± 0.1

Order-No.	Quantity
A3991,0500	500 ml
A3991,1000	1 L

Tris buffer pH 8.0 (1 M) Molecular biology grade

B

Composition:

Tris (A2264) 121.14 g/L (1 M)

Specification:

DNases/RNases/Proteases not detectable
pH (20°C; adjusted with HCl)
..... 8.0 ± 0.1

Order-No.	Quantity
A4577,0500	500 ml
A4577,1000	1 L

Tris buffer pH 8.0 (1 M)

B

Composition:

Tris (A1086) 121.14 g/L (1 M)

Specification:

pH (20°C; adjusted with HCl)
..... 8.0 ± 0.2

Order-No.	Quantity
A3403,0500	500 ml
A3403,1000	1 L
A3403,5000	5 L

Tris buffer pH 8.4 (1 M) Molecular biology grade

B

Composition:		Specification:		Order-No.	Quantity
Tris (A2264)	121.14 g/L (1 M)	DNases/RNases/Proteases	pH (20°C; adjusted with HCl)	A4281,0500	500 ml
		not detectable	8.4 ± 0.2	A4281,1000	1 L

Tris buffer pH 8.8 (1 M) Molecular biology grade

B

Composition:		Specification:		Order-No.	Quantity
Tris (A2264)	121.14 g/L (1 M)	DNases/RNases/Proteases	pH (20°C; adjusted with HCl)	A4265,0500	500 ml
		not detectable	8.8 ± 0.2	A4265,1000	1 L

Tris buffer (0.5 M)

aqueous Solution

HS-No.: 38220000

Storage: RT

Tris buffer pH 8.2 (0.5 M)

B

Composition:		Specification:		Order-No.	Quantity
Tris (A1086)	60.57 g/L (0.5 M)	pH (20°C; adjusted with HCl)		A6318,0500	500 ml
		8.2 ± 0.2		A6318,1000	1 L

Tris buffer pH 8.8 (0.5 M)

B

Composition:		Specification:		Order-No.	Quantity
Tris (A1086)	60.57 g/L (0.5 M)	pH (20°C; adjusted with HCl)		A6316,0500	500 ml
		8.8 ± 0.2		A6316,1000	1 L

Tris hydrochloride

Tris-(hydroxymethyl)-aminomethane hydrochloride, Tris - HCl	C ₄ H ₁₁ NO ₃ · HCl M = 157.60 g/mol CAS-No.: 1185-53-1	Storage: RT LGK: 10 - 13 Disposal: 3
Melting point	148 - 150°C (dec.)	HS-No.: 29221985
pK _a (20°C)	8.3	EC-No.: 214-684-5

Tris hydrochloride Molecular biology grade

B

Specification:			Order-No.	Quantity
DNases/RNases/Proteases	not detectable	Cd	A3452,0250	250 g
Assay (titr.)	min. 99 %	Cu	A3452,0500	500 g
pH (0.5 M; H ₂ O)	3.5 - 5.0 (25°C)	Fe	A3452,1000	1 kg
Loss on drying	max. 0.5 %	Mn	A3452,10006	6 x 1 kg
As	max. 0.0001 %	Pb		
Ba	max. 0.0001 %	Zn		

Tris hydrochloride Buffer grade

B

Specification:		Order-No.	Quantity
Assay (titr.)	min. 99 %	A1087,0250	250 g
Heavy metals (as Pb)	max. 0.001 %	A1087,0500	500 g
pH (0.5 M; H ₂ O; 25°C)	3.5 - 5.0	A1087,1000	1 kg
Loss on drying	max. 0.5 %	A1087,10006	6 x 1 kg
		A1087,5000	5 kg

Tris : Tris · HCl - Mixture (pH 8.8)

B

HS-No.: 29221985		Storage: RT	
Specification:		Order-No.	Quantity
Weight (g/L)	6.36	A4725,0100	100 g
pH (for 6.36 g/L)	8.8 ± 0.2	A4725,0250	250 g
		A4725,0500	500 g

Comment: Dissolve 6.36 g/L in distilled water to receive a 50 mM Tris buffer solution with a pH value of 8.8.

Tris acetate Buffer grade

B

Tris-(hydroxymethyl)-aminomethane acetate

$C_4H_{11}NO_3 \cdot C_2H_4O_2$
 $M = 181.19 \text{ g/mol}$
 CAS-No.: 6850-28-8
 HS-No.: 29221985
 EC-No.: 229-939-6

Storage: RT
 LGK: 10 - 13

Melting point 120 - 121°C

Specification:

Assay (titr.) min. 99 %
 Loss on drying max. 3 %
 Solubility (0.5 M; H_2O) clear, colorless
 pH (0.5 M; H_2O) 6.0 - 7.0 (20°C)

Chloride max. 0.005 %
 Sulfate max. 0.005 %
 Cu max. 0.0005 %
 Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.	Quantity
A2234,0025	25 g
A2234,0100	100 g
A2234,0250	250 g

Tris-Acetate-EDTA buffer see TAE buffer Page 791

Tris base see Tris Page 835

Tris-Borate-EDTA buffer see TBE buffer Page 797

Tris Buffered Saline (Powder) see TBS (Tris-buffered saline) (20X) - Powder Page 799

Tris-(2-carboxyethyl)-phosphine hydrochloride BioChemica

B

TCEP · HCl

$C_9H_{16}ClO_3P$
 $M = 286.70 \text{ g/mol}$
 CAS-No.: 51805-45-9
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Class / PG: 8/II
 UN3261
 Danger
 H314
 P305+P351+P338-P280-P310



Melting point 174 - 178°C

Specification:

^{31}P -NMR complies to standard (min. 98 %)
 Loss on drying max. 1 %

Order-No.	Quantity
A2233,0001	1 g
A2233,0005	5 g

- Literature:** (1) Burns, J.A. *et al.* (1991) *J. Org. Chem.* **56**, 2648-2650
 (2) Han, J. *et al.* (1993) *Biochem. Mol. Biol. Int.* **31**, 1007-1015
 (3) Han, J. & Han, G.Y. (1994) *Anal. Biochem.* **220**, 5-10
 (4) Han, J. *et al.* (1996) *Anal. Biochem.* **234**, 107-109
 (5) Han, J. *et al.* (1996) *Anal. Biochem.* **242**, 150-152

Selective reduction of disulfides by Tris-(2-carboxyethyl)-phosphine.
 Modification of catalytic properties of chicken liver Fructose 1,6-bisphosphatase by Alicin.
 A procedure for quantitative determination of Tris-(2-carboxyethyl)-phosphine, an odorless reducing agent more stable and effective than Dithiothreitol.
 Quantitation of Hydrogen peroxide using Tris-(2-carboxyethyl)-phosphine.
 Use of Tris-(2-carboxyethyl)-phosphine for quantitation of Iodine and Iodate.

Tris dihydrogen phosphate Buffer grade

B

Tris phosphate

$C_4H_{14}NO_7P$
 $M = 219.1 \text{ g/mol}$
 CAS-No.: 6992-39-8
 HS-No.: 29221985
 EC-No.: 230-260-2

Storage: RT

Specification:

Assay (titr.) min. 99 %
 Heavy metals (as Pb) max. 0.001 %
 Water (K.F.) max. 2 %

A (1 cm/0.1 M H_2O)
 260 nm max. 0.1
 280 nm max. 0.1

Order-No.	Quantity
A5271,0025	25 g
A5271,0100	100 g
A5271,0250	250 g

Tris-EDTA buffer see TE buffer Page 800

Tris-Glycine buffers

TG buffer

HS-No.: 38220000

Storage: RT
 LGK: 10 - 13

Tris-Glycine buffer (10X) BioChemica

B

10X concentrated aqueous solution

Composition:

Glycine (A1067) 144.13 g/L (1.92 M)
 Tris (A1086) 30.285 g/L (0.25 M)

Specification:

pH (20°C) 8.3 ± 0.2

Order-No.	Quantity
A1418,0500	500 ml
A1418,1000	1 L

Tris-Glycine buffer (5X) BioChemica

B

5X concentrated aqueous solution

Composition:

Glycine (A1067) 72.06 g/L (0.96 M)
 Tris (A1086) 15.14 g/L (0.125 M)

Specification:

pH (20°C) 8.3 ± 0.2

Order-No.	Quantity
A3404,0500	500 ml
A3404,1000	1 L

Tris-Glycine buffer (1X) BioChemica

B

1X concentrated aqueous solution

Composition:

Glycine (A1067) 14.41 g/L (0.192 M)
Tris (A1086) 3.03 g/L (0.025 M)

Specification:

pH (20°C) 8.3 ± 0.2

Order-No.

A3396,0500

A3396,1000

A3396,5000

Quantity

500 ml

1 L

5 L

Tris - HCl see Tris hydrochloride Page 837

Tris-(2-hydroxyethyl)-amine see Triethanolamine Page 831

Tris-(2-hydroxyethyl)-ammonium chloride see Triethanolamine hydrochloride BioChemica Page 832

Tris-(hydroxymethyl)-aminomethane see Tris Page 835

Tris-(hydroxymethyl)-aminomethane acetate see Tris acetate Buffer grade Page 838

Tris-(hydroxymethyl)-aminomethane hydrochloride see Tris hydrochloride Page 837

Tris-(hydroxymethyl)-aminomethane maleate see Tris maleate Buffer grade Page 839

Tris-(hydroxymethyl)-aminomethane succinate see Tris succinate Buffer grade Page 839

N-[Tris-(hydroxymethyl)-methyl]-2-aminoethanesulfonic acid see TES Page 802

N-[Tris-(hydroxymethyl)-methyl]-2-amino-ethanesulfonic acid sodium salt see TES sodium salt Buffer grade Page 802

N-[Tris-(hydroxymethyl)-methyl]-3-amino-2-hydroxypropanesulfonic acid see TAPSO Buffer grade Page 793

N-[Tris-(hydroxymethyl)-methyl]-3-aminopropanesulfonic acid see TAPS Page 792

N-[Tris-(hydroxymethyl)-methyl]-glycine see Tricine Page 831

Tris maleate Buffer grade

B

Tris-(hydroxymethyl)-aminomethane
maleate

 $C_4H_{11}NO_3 \cdot C_4H_4O_4$
 $M = 237.21 \text{ g/mol}$

CAS-No.: 72200-76-1

HS-No.: 29221985

EC-No.: 276-455-6

Storage: RT

LGK: 10 - 13

Melting point 103 - 105° C

Specification:

Assay (titr.) min. 99 %

pH (0.5 M; H₂O; 20°C) 3.0 - 4.5

Order-No.

A1848,0025

A1848,0100

A1848,0250

Quantity

25 g

100 g

250 g

Trisodium phosphate see tri-Sodium phosphate dodecahydrate Page 749

Tris phosphate see Tris dihydrogen phosphate Buffer grade Page 838

Tris-Phosphate-EDTA buffer see TPE buffer Page 824

Tris-Phosphate buffer pH 7.8 (1 M)

B

aqueous Solution

HS-No.: 38220000

Storage: RT

Composition:

Tris (A1086) 121.14 g/L (1 M)

Specification:

pH (20°C; adjusted with H₃PO₄)

..... 7.8 ± 0.2

Order-No.

A6306,0500

A6306,1000

Quantity

500 ml

1 L

Tris succinate Buffer grade

B

Tris-(hydroxymethyl)-aminomethane
succinate

 $C_{12}H_{28}N_2O_{10}$
 $M = 360.40 \text{ g/mol}$

CAS-No.: 85169-32-0

HS-No.: 29221985

EC-No.: 283-159-0

Storage: RT

Specification:

Assay (titr.) min. 99 %

Heavy metals (as Pb) max. 0.001 %

pH (1 %; H₂O) 6.0 - 7.0

Water (K.F.) max. 1 %

A (1 cm/0.1 M, H₂O)

260 nm max. 0.1

280 nm max. 0.1

Order-No.

A5274,0025

A5274,0100

A5274,0250

Quantity

25 g

100 g

250 g

Tris-Tricine-SDS buffers BioChemica

aqueous solution

HS-No.: 38220000

Storage: RT

Tris-Tricine-SDS buffer (5X) BioChemica

B

Composition:

SDS (A1112) 5 g/L

Tricine (A1085) 89.6 g/L

Tris (A1086) 60.55 g/L

Specification:

pH 8.3 ± 0.2

Order-No.

A3427,0500

A3427,1000

A3427,2500

Quantity

500 ml

1 L

2.5 L

Tris-Tricine-SDS buffer (1X) BioChemica

B

Composition:

SDS (A1112) 1 g/L
Tricine (A1085) 17.92 g/L
Tris (A1086) 12.11 g/L

Specification:

pH 8.3 ± 0.2

Order-No.

A3411,1000

A3411,2500

A3411,5000

Quantity

1 L

2.5 L

5 L

Literature: (1) Schaegger, H. & von Jagow, G. (1987) *Anal. Biochem.* **166**, 368-379

SDS-Tricine-PAGE for the separation of proteins in the range of 1 to 100 kDa.

Triton® X-100

CMC (25°C) 0.3 mM
Classification: nonionic detergent

C₃₄H₆₂O₁₁
M = 646.85 g/mol
CAS-No.: 9002-93-1
HS-No.: 34021300

Storage: RT
LGK: 10 - 13

Class / PG: 9/III
UN3082
WGK: 3*
Danger
H318-H302
P313-P305+P351+P338-P262



Triton® X-100 Molecular Biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Heavy metals (as Pb) max. 0.0005 %
Loss on drying max. 1 %
Chloride max. 0.005 %

Sulfate max. 0.005 %

Order-No.

A4975,0100

A4975,0500

A4975,1000

Quantity

100 ml

500 ml

1 L

*trademark of Union Carbide Company

Triton® X-100 BioChemica

B

Specification:

Heavy metals max. 0.0005 %
Loss on drying max. 1 %
Chloride max. 0.005 %
Sulfate max. 0.005 %

Order-No.

A1388,0500

A1388,1000

A1388,2500

A1388,5000

A1388,9010

Quantity

500 ml

1 L

2.5 L

5 L

10 L

*trademark of Union Carbide Company

Literature: (1) Sobel, A. *et al.* (1977) *Eur. J. Biochem.* **80**, 215-224

(2) Cheetham, P.S.J. (1979) *Anal. Biochem.* **92**, 447-452

(3) Chattopadhyay, A. & London, E. (1984) *Anal. Biochem.* **139**, 408-412

Large-scale purification of the Acetylcholine-receptor protein in its membrane-bound and detergent-extracted forms from *Torpedo marmorata* electric organ.

Removal of Triton® X-100 from aqueous solutions using Amberlite XAD-2.

Fluorimetric determination of critical micelle concentration avoiding interference from detergent charge

Comment: Triton® X-100 is an uncharged, neutral detergent, which hardly denatures proteins. It is part of many lysis buffers (e. g. STET buffer: 8 % (w/v) sucrose; 5 % (v/v) Triton® X-100; 50 mM EDTA; 50 mM Tris · HCl, pH 7.0). Because of its low CMC, it is a problem to remove it by dialysis. Triton® X-100 interferes with the Folin and Lowry assay. It may be removed from aqueous solutions by Amberlite XAD-2 (2).

Triton® X-100 - Solution 10 % peroxide-free

B

HS-No.: 34021300

Storage: 2-8°C
protected from light
under argon

WGK: 1
Danger
H318
P280-P305+P351+P338-P313



Specification:

Peroxide (as H₂O₂) max. 0.0001 %

Order-No.

A1287,0025

A1287,0050

A1287,0100

Quantity

25 ml

50 ml

100 ml

*trademark of Union Carbide Company

Literature: (1) Schubert, D. *et al.* (1983) *FEBS Letters* **163**, 81-84

The nature of the stable noncovalent dimers of band 3 protein from erythrocyte membranes in solutions of Triton® X-100.

Comment: Purification of the band 3 protein with 'aged' Triton® solutions leads to the formation of stable dimers and thus seem to be artifacts. They do not occur when purified batches are used (1).

Triton® X-114 BioChemica

B

Alcylphenylpolyethylene glycol,
Octylphenol-polyethylene glycolether

C₃₀H₅₄O₉
M = 558.75 g/mol
CAS-No.: 9036-19-5
HS-No.: 34021300
EC-No.: 232-658-1

Storage: RT

Class / PG: 9/III
UN3082
WGK: 2
Danger
H319-H335-H315-H318
P280



Boiling point 177°C
CMC (25°C) 0.35 mM
Classification: nonionic detergent
Flash point > 93°C

Specification:

Heavy metals max. 0.0005 %
Loss on drying max. 1 %
Chloride max. 0.005 %

Sulfate max. 0.005 %

Order-No.	Quantity
A3848,0500	500 ml
A3848,1000	1 L

®trademark of Union Carbide Company

Literature: (1) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. pp. 17.8.1-17.8.4 Suppl. 22 John Wiley & Sons, New York.

(2) Bordier, C. (1981) *J. Biol. Chem.* **256**, 1604-1607

(3) Pryde, J.G. (1986) *TIBS* **11**, 160-163

(4) Hooper, N.M. & Bashir, A. (1991) *Biochem. J.* **280**, 745-751

Phase Separation of Integral Membrane Proteins in Triton® X-114 Solution.

Triton® X-114: a detergent that has come in from the cold.

Separation of transmembrane proteins and phosphatidylinositol-anchored proteins with Triton® X-114.

Comment: Triton® X-114 forms at low temperatures a clear, micellar solution. Above 20°C two phases are formed by aggregation of micells. Extractions of cellular material for the isolation of proteins are performed at low temperatures.

Triton® X-114 - Solution 10 % peroxide-free

B

HS-No.: 34021300

Storage: 2-8°C
protected from light

WGK: 1
Danger
H315-H318
P305+P351+P338-P302+P352-P280

**Specification:**Peroxide (as H₂O₂) max. 0.0001 %

Order-No.	Quantity
A3849,0025	25 ml
A3849,0050	50 ml
A3849,0100	100 ml

®trademark of Union Carbide Company

rRNA see Ribonucleic acid from yeast Page 688

rHu TRANCE see rHu RANKL Page 682

Trometamol see Tris Page 835

Tromethamine see Tris Page 835

Tropaeoline see Methyl orange (C.I. 13025) Page 540

Troponin I, human

B

Tn-I

supplied in 8 M urea, 50 mM Tris · HCl,
15 mM β-mercaptoethanol, 1 mM EDTA
(pH 8.0)

from human cardiac tissue

M = ~24 kDa
CAS-No.: 77108-40-8
HS-No.: 38220000

Storage: -20°C
Avoid repeated changes in the solu-
tion temperature!

Specification:

Assay (SDS-PAGE) min. 99 %
Protein (Bradford vs. BSA) min. 0.1 mg/ml

Order-No.	Quantity
A6987,0050	50 µg
A6987,0100	100 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

Troponin T, human

B

Tn-T

supplied in 8 M urea, 5 mM Tris · HCl, 15
mM β-mercaptoethanol, 250 mM NaCl
from human cardiac tissue

HS-No.: 38220000

Storage: -20°C

Specification:

Assay (SDS-PAGE) min. 98 %
Protein approx. 1 mg/ml

Order-No.	Quantity
A6996,0050	50 µg
A6996,0100	100 µg

Comment: **Certification:** The Donors are of US origin and have been tested and found to be NEGATIVE for HbsAg, HCV, HIV-1 & 2, Syphilis and HIV-1 Antigen by currently approved FDA methods. THIS MATERIAL IS SOLD FOR IN-VITRO DIAGNOSTIC USE ONLY IN MANUFACTURING OR RESEARCH. THIS MATERIAL IS NOT SUITABLE FOR INJECTION.

TRX see Resiniferatoxin *BioChemica* Page 684Trypadine see Dimidium bromide *BioChemica* Page 288

Trypan blue (C.I. 23850)

B

Direct Blue 14, Benzamine blue, 4,4'-Bis-(8-amino-3,6-disulfo-1-hydroxy-2-naphthylazo)-3,3'-dimethylbiphenyl tetrasodium salt

$C_{34}H_{24}N_6Na_4O_{14}S_4$
M = 960.82 g/mol
 CAS-No.: 72-57-1
 HS-No.: 32041400
 EC-No.: 200-786-7

Storage: RT
 LGK: 10 - 13

WGK: 3
 Danger
 H350
 P201-P308+P313



Specification:

λ_{max} (H₂O) 590 - 600 nm
 E 1 %/1 cm λ_{max} , 0.001 %, H₂O
 650 - 820

Loss on drying max. 10 %

Order-No.	Quantity
A0668,0010	10 g
A0668,0025	25 g

Literature: (1) Mosiman, V.L. et al. (1997) *Cytometry* **30**, 151-156

Reducing Cellular Autofluorescence in Flow Cytometry: An In Situ Method.

Trypsin from bovine pancreas

B

[E.C. 3.4.21.4], Peptidyl peptide hydrolase
 supplied as salt-free, freeze-dried powder
 from beef pancreas

M = 23800 daltons
 CAS-No.: 9002-07-7
 HS-No.: 35079090
 EC-No.: 232-650-8

Storage: -20°C
 LGK: 10 - 13

WGK: 1
 Danger
 H319-H335-H334-H315
 P305+P351+P338-P302+P352-
 P304+P341-P342+P311



Specification:

Activity (Chymotrypsin) per 2500 Trypsin Units
 max. 50 U
 Activity (Trypsin) min. 2500 U/mg
 Bacterial plate count <10000 organisms/g

P. aeruginosa, *Salmonella*, *Staphylococcus aureus* absent

Order-No.	Quantity
A3964,0500	500 mg
A3964,0001	1 g
A3964,0005	5 g

Comment: Unit definition: That amount of enzyme that causes a increase in absorbance at 253 nm of 0.003 per minute at 25°C resulting from the hydrolysis of BAAE. (NF/USP unit)

γ-irradiated Trypsin 1:250 from porcine pancreas

B

CAS-No.: 9002-07-7
 HS-No.: 35079090
 EC-No.: 232-650-8

Storage: -20°C
 LGK: 10 - 13

WGK: 1
 Danger
 H335-H334-H315-H319
 P342+P311-P305+P351+P338-
 P304+P341-P302+P352



Specification:

Activity (Protease) 680 - 830 BAAE U/
 mg
 Appearance (powder) white to off-white
 Certificate of origin USDA approved ori-
 gin

Country of origin USA
 Endotoxins max. 20 EU/mg
 Irradiation dosage 43 - 54 kGy
 Mycoplasma not detectable
 Porcine parvovirus not detectable

Solubility (2.5 % in PBS)
 clear

Order-No.	Quantity
A4868,0050	50 g
A4868,0100	100 g
A4868,0250	250 g

Trypsin 1 : 250 from porcine pancreas

B

from porcine pancreas

CAS-No.: 9002-07-7
 HS-No.: 35079090

Storage: 2-8°C

WGK: 1
 Danger
 H315-H319-H334-H335
 P305+P351+P338-P304+P341-
 P302+P352-P342+P311



Specification:

Chymotrypsin Assay (ATEE) min. 40 USP U/mg
 Trypsin Assay (BAEE) min. 260 USP U/mg
 Appearance off-white powder
 Bacterial count max. 10000/g

Loss on drying (4 h) max. 2 % (60°C)
 Moulds & yeasts max. 100 count/g
 pH (1 %; H₂O) 3.0 - 6.0 (in sus-
 pension)

Order-No.	Quantity
A4148,0025	25 g
A4148,0100	100 g
A4148,0500	500 g

AC-Trypsin - Solution Cell culture grade



B

HS-No.: 35079090

Storage: -20°C
 Shipment: wet ice

Specification:

Mycoplasma test complies
 Osmolality 280.0 - 310.0
 mOsm/kg

Sterility complies
 Trypsin 0.2 mg/ml
 pH 7.7 - 8.0

Order-No.	Quantity
A8336,0100	100 ml
A8336,0500	500 ml

Comment: AC-Trypsin is a ready-to-use trypsin solution with a concentration of 200mg/liter. Besides crystalline trypsin, it also contains additives which protect the cell wall.

Trypsin inhibitor from soybean

M = ca. 21500 daltons
CAS-No.: 9035-81-8
HS-No.: 35040090
EC-No.: 232-906-9

Storage: -20°C
LGK: 10 - 13

Trypsin inhibitor from soybean > 10000 BAEE

B

Inhibition of Trypsin, Chymotrypsin, Plasmin, Kallikrein, Thrombin and other proteolytic enzymes
lyophilized, salt-free

Specification:

Assay (enzym.) > 10000 U/mg
Isoelectrical point 4.5

Order-No.	Quantity
A1441,0250	250 mg
A1441,0001	1 g

Trypsin inhibitor from soybean > 7000 BAEE

B

lyophilized

Specification:

Assay min. 7000 U/mg

Order-No.	Quantity
A1828,0250	250 mg
A1828,0001	1 g

Literature: (1) Ozawa, K. & Laskowski, M. (1966) *J. Biol. Chem.* **241**, 3955-3961
(2) De Vonis Bidlingmeyer, U. *et al.* (1972) *Biochemistry* **11**, 3303-3310
(3) Birk, Y. (1976) *Methods Enzymol.* **45 B**, 700-707

The reactive site of Trypsin inhibitors.
Identity of the tryptic and α -chymotryptic reactive sites on soybean Trypsin inhibitor (Kunitz).
Trypsin and Chymotrypsin inhibitors from soybeans.

Comment: The Trypsin inhibitor from soybean inhibits trypsin in a molar ratio 1 : 1. Chymotrypsin will be inhibited to a lesser extent. Since the inhibitor is a protein, it cannot be dissolved in organic solvents and is heat-sensitive! Dissolve in water or diluted buffers. The pH optimum for its activity is 7.0.
One unit of the inhibitor inhibits one unit of trypsin activity (BAEE; Unit definition Trypsin according to NF/USP: That amount of enzyme that causes a increase in absorbance at 253 nm of 0.003 per minute at 25°C resulting from the hydrolysis of BAEE).

AC-Trypsin Inhibitor from Soybean (50X) Cell culture grade



B

HS-No.: 35040090
Storage: -20°C
Shipment: wet ice

Specification:

Osmolality 275.0 - 290.0
MOSM/kg
Sterility complies

Order-No.	Quantity
A8339,0020	20 ml

Comment: AC-Trypsin Inhibitor solution is a solution with a concentration of 5mg/ml (50X concentrate). Before use, the solution must be diluted by a factor of 50 with sterile PBS (without Ca/Mg). It can then be stored at +4°C for up to 60 days.

Trypsinogen

B

supplied as freeze dried powder from beef pancreas

M = 24000 daltons
CAS-No.: 9002-08-8
HS-No.: 35040090

Storage: -20°C

Specification:

Native Activity <10 % of the potential activity
Potential Activity min. 2500 Units/mg

Order-No.	Quantity
A4532,0250	250 mg
A4532,0001	1 g
A4532,0005	5 g

Comment: Unit definition: That amount of activated zymogen that causes an increase in absorbance at 253 nm of 0.003 per minute at 25°C resulting from the hydrolysis of BAEE. (NF/USP unit)

Tryptamine

B

3-(2-Aminoethyl)-indol, 2-(3-Indolyl)-ethylamine

$C_{10}H_{12}N_2$
M = 160.22 g/mol
CAS-No.: 61-54-1
HS-No.: 29339980
EC-No.: 200-510-5

Storage: RT
LGK: 10 - 13
Disposal: 5

Melting range 111 - 114°C
Solubility (20°C) insoluble (H₂O)

Specification:

Assay min. 99 %
Identity (IR) complies
pH (0.1 M; H₂O; 20°C) 9.7

Order-No.	Quantity
A3850,0005	5 g
A3850,0025	25 g

Tryptone BioChemica

B

*Peptone from casein (controlled enzymatic hydrolysis)*HS-No.: 35040090
EC-No.: 293-428-4

Storage: RT

hygroscopic

Specification:

Ash approx. 6 %
 Loss on drying max. 6 %
 Residue on ignition max. 17 %
 Total N approx. 13 %
 pH (5 %; H₂O; 20°C) 6.5 - 7.5

Order-No.	Quantity
A1553,0100	100 g
A1553,0250	250 g
A1553,0500	500 g
A1553,1000	1 kg
A1553,10006	6 x 1 kg

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
 (2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: Tryptone is a component of many bacterial growth media (e. g. LB-Medium, TB-Medium, YT-Medium etc.). It is hygroscopic - store in a dry place.

Tryptone Soya Agar

C

CASO Agar

HS-No.: 38220000

Storage: RT
LGK: 10 - 13**Composition:**

Agar 15.0 g/L
 Buffers 2.5 g/L
 Glucose 2.5 g/L
 Sodium chloride 5.0 g/L
 Soya peptone 3.0 g/L

Tryptone 17.0 g/L

Specification:

pH before autoclaving
 approx. 7.3 (20°C)

Order-No.	Quantity
A5889,0500	500 g
A5889,5000	5 kg

Literature: (1) US Pharmacopoeia XXI (1985)

Comment: This highly nutritious general purpose medium is used for the growth of many organisms.

Directions: Suspend 45 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Tryptone Soya Broth

C

CASO Broth

HS-No.: 38220000

Storage: RT
LGK: 10 - 13**Composition:**

Buffers 2.5 g/L
 Glucose 2.5 g/L
 Sodium chloride 5.0 g/L
 Soya peptone 3.0 g/L
 Tryptone 17.0 g/L

Specification:

pH before autoclaving approx. 7.3 (20°C)

Order-No.	Quantity
A5895,0500	500 g
A5895,5000	5 kg

Literature: (1) US Pharmacopoeia XXI (1976)

Comment: This highly nutritious general purpose medium is used for the growth of many organisms.

Directions: Suspend 30 g in 1 L of distilled water and heat gently to dissolve the medium completely. Distribute into the final containers and sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

L-Tryptophan

L-2-Amino-3-(indol-3)-propionic acid

C₁₁H₁₂N₂O₂
 M = 204.23 g/mol
 CAS-No.: 73-22-3
 HS-No.: 29339980
 EC-No.: 200-795-6

Storage: RT
LGK: 10 - 13

Melting point 290°C
 Solubility (25°C) 10 g/L (H₂O)

L-Tryptophan Cell culture grade

B

Specification:

Pyrogen test complies
 Assay (titr.) min. 99 %
 α20°C/D; 1 %, H₂O -32.8° - -30°
 Other amino acids max. 0.5 %
 Ammonium max. 0.1 %
 Chloride max. 0.02 %

Sulfate max. 0.02 %
 As max. 0.0001 %
 Fe max. 0.001 %
 Pb max. 0.001 %

Order-No.	Quantity
A3410,0025	25 g
A3410,0100	100 g
A3410,0250	250 g
A3410,0500	500 g
A3410,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Tryptophan BioChemica

B

Specification:

Assay (titr.) min. 99 %
 α20°C/D; 1 %, H₂O -32.8° - -30°
 Heavy metals (as Pb) max. 0.001 %
 Insoluble matter complies
 Other amino acids max. 0.5 %

Ammonium max. 0.1 %
 Chloride max. 0.02 %
 Sulfate max. 0.02 %

Order-No.	Quantity
A3445,0025	25 g
A3445,0100	100 g
A3445,0250	250 g
A3445,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

L-Tryptophan pure Ph. Eur., USP

C

Specification:

Assay (titr)	98.5 - 101.0 %
α 20°C/D; 1 %, H ₂ O	-33.0° - -30.0°
α 25°C/D; 1 %, H ₂ O	-32.8° - -29.4°
Appearance of solution	complies
Heavy metals (as Pb)	max. 0.001 %
Identity (IR)	complies

Loss on drying	max. 0.3 %
Organic vol. impurities	complies
Related subst.	complies
Residue on ignition	max. 0.1 %
pH (1 %; H ₂ O; 20°C)	5.5 - 7.0
Other amino acids	max. 0.5 %

Ammonium	max. 0.02 %
Chloride	max. 0.02 %
Sulfate	max. 0.03 %
Fe	max. 0.002 %

Order-No.	Quantity
A1645,0025	25 g
A1645,0100	100 g
A1645,0250	250 g
A1645,0500	500 g

◆ All amino acids from AppliChem are of non-animal origin!

Tryptose

B

enzymatic digest of protein

CAS-No.: 73049-73-7
HS-No.: 35040090

Storage: RT
LGK: 10 - 13

Specification:

Ash	max. 13.5 %
N (NH ₂)	min. 3 %
Nitrogen	min. 12 %
pH (2 %; H ₂ O)	approx. 7.0

Chloride	max. 6 %

Order-No.	Quantity
A2235,0100	100 g
A2235,0500	500 g
A2235,1000	1 kg

Tryptose Phosphate Broth

C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Buffer	2.5 g/L
Glucose	2.0 g/L
Sodium chloride	5.0 g/L
Tryptose	20.5 g/L

Specification:

pH (20°C) before autoclaving	7.0 - 7.6

Order-No.	Quantity
A0392,0500	500 g
A0392,5000	5 kg

Literature: (1) Grinsberg *et al.* (1955) *Proc. Soc. Exper. Biol. Med.* **89**, 66.

Comment: This buffered medium is used for the cultivation of fastidious bacteria.

Directions: Suspend 30 g in 1 L of distilled water and heat gently to dissolve the medium completely. Distribute into the final containers and sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C protected from light.

TTBS (Tween® / Tris-buffered salt solution)

B

aqueous solution

HS-No.: 38220000

Storage: RT

Composition:

Sodium chloride	9 g/L (0.9 %)
Tris · HCl (pH 7.5)	12.11 g/L (100 mM)
Tween® 20	1 g/L (0.1 %)

Specification:

pH (20°C)	7.5

Order-No.	Quantity
A3851,0250	250 ml
A3851,0500	500 ml
A3851,1000	1 L

Tth DNA Polymerase

B

from *Thermus thermophilus* strain HB8

HS-No.: 35079090

Storage: -20°C

• supplied with reaction buffer (10X)

• Unit definition: see comment

Specification:

Concentration	5000 Units/ml

Order-No.	Quantity
A5190,0500	500 U
A5190,2500	2500 U

Comment: *Tth* DNA Polymerase is a thermostable enzyme of approximately 94 kDa isolated from the eubacterium *Thermus thermophilus* strain HB8. This enzyme replicates DNA at 74°C. It reveals RNA-dependent DNA-polymerase activity in the presence of Mn²⁺ ions. Besides, the concentration of RNA template for effective reverse transcription with *Tth* DNA polymerase should be higher than that for reactions directed by Reverse Transcriptases (M-MuLV, AMV). The storage buffer is 10 mM Tris · HCl (pH 7.5), 300 mM KCl, 0.1 mM EDTA, 1 mM DTT and 50 % glycerol. As a reaction buffer we recommend **Reaction buffer (10X)**, without Mg²⁺, with 100 mM Tris · HCl (pH 8.3), 500 mM KCl, 0.1 %, Triton® X-100. The recommended concentration of Mg²⁺ is 3 - 6 mM. For RNA-dependent cDNA synthesis, a concentration of Mn²⁺ in the range of 1 - 2 mM is recommended.

Unit definition: One unit of activity is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble DNA fraction in 30 minutes at 70°C.

Tth PCR buffer (10X)

B

HS-No.: 38220000

Storage: 2-8°C
LGK: 10 - 13

Composition:

BSA	500 µg/ml
Magnesium chloride	15 mM
Potassium chloride	1 M
Tris · HCl (pH 8.9)	100 mM
Tween® 20	0.5 %

Order-No.	Quantity
A5065,0001	1 ml
A5065,0005	5 ml

TTZ see Tetrazolium red Page 809

Tuerk's Reagent



C

for leukocyte counting

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Acetic acid 100 % 10 g/L
Methyl violet (A2388) 0.1 g/L

Order-No.	Quantity
A8081,0100	100 ml
A8081,0500	500 ml
A8081,1000	1 L

Tulipanin see Delphinidin-3-rutinoside HPLC grade Page 262
recombinant Human Tumor Necrosis Factor- α see rHu TNF- α Page 819
recombinant Human Tumor Necrosis Factor- β see rHu TNF- β bioconfident grade Page 820
recombinant Mouse Tumor Necrosis Factor- α see rM TNF- α Page 820
recombinant Rat Tumor Necrosis Factor- α see rR TNF- α Page 820

Tunicamycin

B

from *Streptomyces lysosuperficus*

CAS-No.: 11089-65-9
HS-No.: 29419000

Storage: 2-8°C
protected from light
LGK: 6.1 B

Class / PG: 6.1/I
UN3462
WGK: 3
Danger
H330-H310-H300-H360
P280-P260-P309+P311-P201



Melting point 234°C

Specification:

Assay min. 95 %

Order-No.	Quantity
A2242,0005	5 mg
A2242,0010	10 mg

Literature: (1) Elbein, A.D. (1984) *CRC Crit. Rev. Biochem.* **16**, 21-49 Inhibitors of the biosynthesis and processing of N-linked oligosaccharides.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1999) *Current Protocols in Molecular Biology*. Page 17.10.7 (Suppl. 22) Greene Publishing & Wiley-Interscience, New York.

Comment: Tunicamycin is a nucleoside antibiotic, isolated from *Streptomyces lysosuperficus*. It inhibits the GlcNAc-1-P transferase and therefore the first step in the linkage of fatty acid and saccharide, i. e. the transfer of GlcNAc-1-P from UDP-GlcNAc to dolicholphosphate. The active concentration ranges from 0.1 to 5 μ g/ml (ref. 1).
According to ref. 2, a stock solution is prepared at 1 mg/ml in DMSO, DMF, 95 % ethanol, or 25 mM NaOH (In case NaOH is used, prevent uptake of CO₂, since Tunicamycin precipitates at < 1mg/ml if pH becomes neutral). Store the solution at -20°C (stable approx. 1 year).

D(+)-Turanose BioChemica

B

3-O- α -D-Glucopyranosyl-D-fructose

C₁₂H₂₂O₁₁
M = 342.30 g/mol
CAS-No.: 547-25-1
HS-No.: 29400000
EC-No.: 208-918-5

Storage: RT

Melting point 170°C

Specification:

Assay min. 99 %
 α 20°C/D; 4 %, H₂O; 6 h +75° - +79°
Loss on drying max. 0.5 %

Order-No.	Quantity
A6896,0001	1 g
A6896,0005	5 g

Turkey red oil

C

Sulfuricinate sodium salt

CAS-No.: 8002-33-3
HS-No.: 38220000
EC-No.: 232-306-7

Storage: RT

Warning
H319-H315
P280-P305+P351+P338



Specification:

Density (d 20°C/4°C) 1.01 - 1.04
n 20°C/D 1.455 ± 0.005
pH (5 %; H₂O; 20°C) approx. 7
Loss on drying 14 - 20 %

Order-No.	Quantity
A4682,0100	100 ml
A4682,0500	500 ml
A4682,1000	1 L

Tween® 20

Boiling point > 100°C
CMC (25°C) 5.9 x 10⁻⁵ mol/L
Classification: nonionic detergent
Solubility (25°C) 100 g/L (H₂O)

C₅₈H₁₁₄O₂₆
M = 1227.72 g/mol
CAS-No.: 9005-64-5
HS-No.: 34021300

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Tween® 20 Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Density (d 20°C/4°C) 1.095 - 1.105
Hydroxyl-No. approx. 100
Saponification No. 40 - 50

Order-No.	Quantity
A4974,0100	100 ml
A4974,0250	250 ml
A4974,0500	500 ml
A4974,1000	1 L

*trademark of ICI America Inc.

Tween® 20 BioChemica

B

Specification:

Density (d 20°C/4°C) 1.095 - 1.105
Hydroxyl-No. approx. 100
Saponification No. 40 - 50

Order-No.	Quantity
A1389,0500	500 ml
A1389,1000	1 L
A1389,5000	5 L
A1389,9010	10 L

*trademark of ICI America Inc.

Literature: (1) Helenius, A. et al. (1979) *Methods Enzymol.* **56**, 734-749

Review article: Properties of detergents.

Tween® 20 pure Ph. Eur.

C

Specification:

Acid number max. 2.0
Ash max. 0.25 %
Composition of fatty acids . complies
Heavy metals max. 0.001 %

Hydroxyl-No. 96 - 108
Identity complies
Peroxide number max. 10.0
Saponification No. 40 - 50

1,4-Dioxane ... max. 0.001 %
Ethyleneoxid ... max. 0.0001 %
Water (K.F.) max. 3.0 %

Order-No.	Quantity
A7564,0500	500 ml
A7564,1000	1 L
A7564,10006	6 x 1 L

*trademark of ICI America Inc.

Tween® 20 - Solution 10 % peroxide-free

B

Polyoxyethylenesorbitane monolaurate - Solution

HS-No.: 34021300

Storage: 2-8°C
under argon
protected from light

WGK: 1

Specification:

Peroxide (as H₂O₂) max. 0.0001 %

Order-No.	Quantity
A1284,0025	25 ml
A1284,0050	50 ml
A1284,0100	100 ml

*trademark of ICI America Inc.

Tween® 80

CMC (25°C) 1.0 x 10⁻⁵ mol/L
Classification: nonionic detergent

M = 1310 g/mol
CAS-No.: 9005-65-6
HS-No.: 34021300

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: 1

Tween® 80 BioChemica

B

Specification:

Appearance (liquid) yellowish-brownish,
clear, oily
Density (d 20°C/4°C) 1.073 - 1.083
Hydroxyl-No. approx. 75
Saponification No. 45 - 55

Order-No.	Quantity
A1390,0500	500 ml
A1390,1000	1 L
A1390,5000	5 L
A1390,9010	10 L

*trademark of ICI America Inc.

Tween® 80 pure Ph. Eur.

C

Specification:

Acid number max. 2.0
Ash max. 0.25 %
Composition of fatty acids . complies
Heavy metals max. 0.001 %
Hydroxyl-No. 65 - 80
Identity complies

Peroxide number max. 10.0
Saponification No. 45 - 55
1,4-Dioxane max. 0.001 %
Ethyleneoxid max. 0.0001 %
Water (K.F.) max. 3.0 %

Order-No.	Quantity
A4743,0500	500 ml
A4743,1000	1 L
A4743,10006	6 x 1 L
A4743,2500	2.5 L
A4743,5000	5 L

*trademark of ICI America Inc.

Tween® 80 - Solution 10 % peroxide-free

B

Polyoxyethylenesorbitane monooleate - Solution

HS-No.: 34021300

Storage: 2-8°C
protected from light
under argon

WGK: 1

Specification:

Peroxide (as H₂O₂) max. 0.0001 %

Order-No.	Quantity
A1285,0025	25 ml
A1285,0050	50 ml
A1285,0100	100 ml

*trademark of ICI America Inc.

L-Tyrosine

L-2-Amino-3-(4-hydroxyphenyl)-
propionic acid

C₉H₁₁NO₃
M = 181.19 g/mol
CAS-No.: 60-18-4
HS-No.: 29225000
EC-No.: 200-460-4

Storage: RT
LGK: 10 - 13

Solubility (25°C) 0.4 g/L (H₂O)

L-Tyrosine Cell culture grade

B

Specification:

Pyrogen test	complies	Sulfate	max. 0.02 %
Assay (titr.)	min. 99 %	As	max. 0.0001 %
α20°C/D; 5 %, HCl	-12.1° - -11.3°	Fe	max. 0.001 %
Other amino acids	max. 0.5 %	Pb	max. 0.001 %
Ammonium	max. 0.1 %		
Chloride	max. 0.02 %		

Order-No.	Quantity
A3401,0025	25 g
A3401,0100	100 g
A3401,0250	250 g
A3401,0500	500 g
A3401,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Tyrosine BioChemica

B

Specification:

Assay (titr.)	min. 99 %	Chloride	max. 0.02 %
α20°C/D; 5 %, HCl	-12.1° - -11.3°	Sulfate	max. 0.02 %
Heavy metals (as Pb)	max. 0.001 %		
Insoluble matter	complies		
Other amino acids	max. 0.5 %		
Ammonium	max. 0.1 %		

Order-No.	Quantity
A3437,0025	25 g
A3437,0100	100 g
A3437,0250	250 g
A3437,0500	500 g
A3437,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Tyrosine pure Ph. Eur., USP

C

Specification:

Assay (titr.)	99.0 - 101.0 %	Loss on drying	max. 0.3 %	Sulfate	max. 0.03 %
α20°C/D; 5 %, 1 N HCl	-12.3° - -11.0°	Organic vol. impurities	complies	Fe	max. 0.001 %
α25°C/D; 5 %, 1 N HCl	-11.2° - -9.8°	Residue on ignition	max. 0.1 %		
Appearance of solution	complies	Other amino acids	max. 0.5 %		
Heavy metals (as Pb)	max. 0.001 %	Ammonium	max. 0.02 %		
Identity (IR)	complies	Chloride	max. 0.02 %		

Order-No.	Quantity
A1677,0025	25 g
A1677,0100	100 g
A1677,0250	250 g
A1677,0500	500 g
A1677,1000	1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Tyrosine disodium salt BioChemica

B

C₉H₉NNa₂O₃
M = 225.20 g/mol
CAS-No.: 69847-45-6
HS-No.: 29225000

Storage: RT

Specification:

Assay	min. 97 %	pH (1 %; H ₂ O; 25°C) ...	10.5 - 12
α25°C/D; 5 %, HCl	-10° - -12°	Water (K.F.)	approx. 14 %
Heavy metals	max. 0.001 %		
Solubility (0.1 %; H ₂ O)	clear, yellowish		

Order-No.	Quantity
A2838,0025	25 g
A2838,0100	100 g
A2838,0250	250 g

◆ All amino acids from AppliChem are of non-animal origin!

Ubiquinone-50 see Coenzyme Q₁₀ BioChemica Page 221

UDP-Na₂ see Uridine 5'-diphosphoric acid disodium salt BioChemica Page 851

Ulexin see Cytisine HPLC grade Page 256

Umckalin HPLC grade

B

7-Hydroxy-5,6-dimethoxycumarin
from *Pelargonium sidoides*

C₁₁H₁₀O₅
M = 222.19 g/mol
CAS-No.: 43053-62-9
HS-No.: 29322985

Storage: 2-8°C

Warning
H302-H319
P305+P351+P338



Specification:

Assay	min. 99 %

Order-No.	Quantity
A7924,0010	10 mg
A7924,0010DOC	10 mg
A7924,0020	20 mg
A7924,0020DOC	20 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, elemental analysis. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

UMP-Na₂ see Uridine 5'-monophosphoric acid disodium salt BioChemica Page 851

2,4,7-Undecatrienal nitrosohydrazone see Triascin C BioChemica Page 828

2E,4E,7E-Undecatriene-1-triazene see Triascin C BioChemica Page 828

n-Undecyl-β-D-maltoside

CMC (H₂O) 0.6 mM
Classification: nonionic detergent

C₂₃H₄₄O₁₁
M = 496.59 g/mol
CAS-No.: 170552-39-3
HS-No.: 29389090

Storage: 2-8°C

n-Undecyl-β-D-maltoside Crystallography grade

B

Specification:

Assay min. 99.5 %
α20°C/D; 1 %, H₂O +48.5° - +50.5°
Solubility (10 %; H₂O; 21°C) clear, colorless
Thermal transition 93 - 95°C (smectic A)

α-Isomere (HPLC) max. 0.01 %
n-Undecanol (HPLC) ... max. 0.001 %
A (1 cm/1 %, water HPLC grade)
260 nm max. 0.04

Order-No.	Quantity
A6770,0001	1 g
A6770,0005	5 g
A6770,0010	10 g

n-Undecyl-β-D-maltoside BioChemica

B

Specification:

Assay min. 99 %
α20°C/D; 1 %, H₂O +48.5° - +50.5°
Solubility (10 %; H₂O; 21°C) clear, colorless
α-Isomere (HPLC) max. 0.01 %

n-Undecanol (HPLC) ... max. 0.001 %
A (1 cm/1 %, water HPLC grade)
260 nm max. 0.04

Order-No.	Quantity
A6808,0001	1 g
A6808,0005	5 g
A6808,0010	10 g

Universal Indicator Strips see pH-Fix Indicator Strips Page 621

Uracil BioChemica

B

2,4-Dihydropyrimidine

C₄H₄N₂O₂
M = 112.09 g/mol
CAS-No.: 66-22-8
HS-No.: 29335995
EC-No.: 200-621-9

Storage: RT
LGK: 10 - 13
WGK: 1

Melting point 335°C
pK₁ (25°C) 0.5
pK₂ (25°C) 9.5
pK₃ (25°C) > 13

Specification:

Assay min. 99 %
E 1 %/1 cm, 260 nm; pH 7 717 - 732
Heavy metals max. 0.001 %

Order-No.	Quantity
A0667,0025	25 g
A0667,0100	100 g

Uracil-DNA Glycosylase (UDG)

B

from *E. coli*

HS-No.: 39207990

Storage: -20°C

Specification:

Concentration min. 10 KU/ml

Order-No.	Quantity
A5234,0200	200 U
A5234,1000	1000 U

Literature: (1) Pierce, K.E. & Wangh, L.J. (2004) *BioTechniques* **36**, 44-48

Effectiveness and limitations of uracil-DNA glycosylases in sensitive real-time PCR assays.

Comment: *E. coli* Uracil-DNA glycosylase (UDG) catalyzes the release of uracil from uracil-containing DNA. UDG efficiently hydrolyzes uracil from single-stranded or double-stranded DNA, but not from oligomers (6 or less bases) The storage buffer contains 20 mM Tris · HCl (pH 8.0), 50 mM NaCl, 0.1 mM EDTA, 50 % glycerol. The **Reaction buffer (1x)** is 20 mM Tris · HCl (pH 8.0), 1 mM EDTA.

Unit definition: One unit of activity is the amount of enzyme required to release 60 pmol of uracil per minute from double-stranded uracil-containing DNA.

Uracil-1-β-D-ribofuranoside see Uridine *BioChemica* Page 851

Uranine AP (C.I. 45350)

C

Fluorescein sodium

C₂₀H₁₀Na₂O₅
M = 376.28 g/mol
CAS-No.: 518-47-8
HS-No.: 32041200
EC-No.: 208-253-0

Storage: RT
LGK: 10 - 13

Melting point 360°C
Solubility (20°C) 500 g/L (H₂O)

Specification:

λ_{max} (pH 8.0) 490 - 492 nm
E 1 %/1 cm, λ_{max} (pH 8.0; calc. on dried subst.) min. 1850
Loss on drying max. 7 %
pH (2 %; H₂O; 20°C) 7.0 - 9.0

Order-No.	Quantity
A1161,0005	5 g
A1161,0100	100 g
A1161,0250	250 g
A1161,0500	500 g
A1161,1000	1 kg
A1161,10006	6 x 1 kg

Urea (Pellets)

Melting point	132 - 135°C	CH ₄ N ₂ O	Storage: RT	WGK: 1
Solubility (20°C)	1000 g/L (H ₂ O)	M = 60.06 g/mol	LGK: 10 - 13	
		CAS-No.: 57-13-6		
		HS-No.: 31021010		
		EC-No.: 200-315-5		

Urea Molecular biology grade

Specification:		Order-No.	Quantity
DNases/RNases/Proteases not detectable	Sulfate max. 0.001 %	A1049,0500	500 g
Assay (from N) min. 99.5 %	Fe max. 0.0005 %	A1049,1000	1 kg
Heavy metals (as Pb) max. 0.001 %		A1049,10006	6 x 1 kg
pH (8 M; H ₂ O; 20°C) 7.5 - 10.5		A1049,5000	5 kg
Chloride max. 0.0005 %			

Urea BioChemica

Specification:			Order-No.	Quantity
Assay (from N) min. 99 %	Fe max. 0.001 %	A (1 cm/8 M in H ₂ O)		
Heavy metals (as Pb) max. 0.001 %		260 nm max. 0.05	A1360,1000	1 kg
Loss on drying max. 0.5 %		280 nm max. 0.02	A1360,5000	5 kg
Chloride max. 0.005 %			A1360,9010	10 kg
Sulfate max. 0.005 %				

Literature: (1) Maniatis, T. & Efstratiadis, A (1980) *Methods Enzymol.* **65**, 299-305
 (2) Soulié, S. *et al.* (1996) *Anal. Biochem.* **236**, 363-364
 (3) Lippincott, J. & Apostol. I. (1999) *Anal. Biochem.* **267**, 57-64

Fractionation of low molecular weight DNA or RNA in polyacrylamide gels containing 98 % formamide or 7 M urea.
 Urea reduces the aggregation of membrane proteins during SDS-PAGE.
 Carbamylation of cysteine in hemoglobin by urea.

Comment: RNA or DNA denature at 7 M urea in polyacrylamide gels. Molecules with chain lengths larger than 150 - 200 nucleotides do not completely denature at room temperature in 7 M urea, so it is necessary to use polyacrylamide gels containing 98 % formamide to size larger molecules.
 Separation of **proteins** according to their size and charge requires a concentration of 6-8 M urea in the probe and in the stacking and separation gel. At alkaline pH values urea decomposes and forms cyanate ions. These ions may react with the amino group and form stable carbamylated derivatives with a changed migration pattern during electrophoresis. Solutions containing urea should not be stored for longer periods, should not be heated and gels containing urea should prerun to remove cyanate ions before loading the gel.

Urea pure USP

Specification:		Order-No.	Quantity
Assay (from N) 99.0 - 100.5 %	Chloride max. 0.007 %	A3399,1000	1 kg
Alcohol-insol. matter max. 0.04 %	Sulfate max. 0.01 %	A3399,10006	6 x 1 kg
Heavy metals (as Pb) max. 0.002 %		A3399,5000	5 kg
Identity (IR) complies		A3399,9010	10 kg
Melting range 132 - 135°C		A3399,9025	25 kg
Residue on ignition max. 0.1 %			

Urea pure

Carbonyldiamide, Carbamide

Specification:		Order-No.	Quantity
Assay (from N) min. 98 %		A1361,1000	1 kg
Loss on drying max. 1.0 %		A1361,10006	6 x 1 kg
Chloride max. 0.01 %		A1361,5000	5 kg
Sulfate max. 0.01 %		A1361,9010	10 kg
Fe max. 0.005 %		A1361,9025	25 kg
Pb max. 0.01 %			

Urea Technical grade

Specification:		Order-No.	Quantity
Assay (from N) min. 98 %		A2514,5000	5 kg
		A2514,9010	10 kg
		A2514,9025	25 kg

Urea crystalline

Melting point	133°C	CH ₄ N ₂ O	Storage: RT	WGK: 1
Solubility (20°C)	1000 g/L (H ₂ O)	M = 60.06 g/mol	LGK: 10 - 13	
		CAS-No.: 57-13-6		
		HS-No.: 31021010		
		EC-No.: 200-315-5		

Urea crystalline Molecular biology grade

Specification:		Order-No.	Quantity
DNases/RNases/Proteases not detectable	Chloride max. 0.0005 %	A8113,1000	1 kg
Assay (from N) min. 99.5 %	Sulfate max. 0.001 %	A8113,10006	6 x 1 kg
Heavy metals (as Pb) max. 0.001 %	Fe max. 0.0005 %	A8113,5000	5 kg
pH (8 M; H ₂ O; 20°C) 7.5 - 10.5			

Urea crystalline p. A.

C

Specification:

Assay (from N) min. 99 %
Alkalinity complies
Appearance of sol. (H₂O) clear, colorless (10 %)
Biuret max. 0.1 %
H₂O-insoluble matter max. 0.01 %

Heavy metals (as Pb) max. 0.001 %
Identity complies
Melting range 132 - 135°C
Sulfated ash max. 0.1 %
Ammonium max. 0.05 %
Chloride max. 0.001 %

Sulfate max. 0.001 %

Order-No.	Quantity
A5470,0500	500 g
A5470,1000	1 kg
A5470,10006	6 x 1 kg
A5470,5000	5 kg
A5470,9010	10 kg

Urea crystalline pure Ph. Eur., USP

C

Specification:

Assay (from N) 99.0 - 100.5 %
Alcohol-insol. matter max. 0.04 %
Alkaline reacting subst. complies
Appearance of solution complies
Heavy metals (as Pb) max. 0.001 %
Identity complies

Loss on drying max. 1.0 %
Melting range 132 - 135°C
Sulfated ash max. 0.1 %
Biuret max. 0.1 %
Ammonium max. 0.05 %
Chloride max. 0.007 %

Sulfate max. 0.01 %

Order-No.	Quantity
A6832,1000	1 kg
A6832,10006	6 x 1 kg
A6832,5000	5 kg
A6832,9010	10 kg
A6832,9025	25 kg

Urea - Solution 50 % see Acrylamide - Diluent for sequencing gels Page 60
5-Ureidohydantoin see Allantoin *BioChemica* Page 81

Uric acid *BioChemica*

B

2,6,8-Trihydroxypurine

C₅H₄N₄O₃
M = 168.11 g/mol
CAS-No.: 69-93-2
HS-No.: 29335995
EC-No.: 200-720-7

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 1

Melting point > 300°C

Specification:

Assay min. 98 %
λ_{max} (0.05 M NaOH) 293 - 297 nm
Loss on drying max. 0.5 %

Order-No.	Quantity
A2562,0010	10 g
A2562,0025	25 g
A2562,0100	100 g

Uridine *BioChemica*

B

Uracil-1-β-D-ribofuranoside

C₉H₁₂N₂O₆
M = 244.20 g/mol
CAS-No.: 58-96-8
HS-No.: 29349990
EC-No.: 200-407-5

Storage: RT
LGK: 10 - 13

Melting range 165 - 168°C

pK₁ (25°C) 9.2

pK₂ (25°C) 12.5

Specification:

Assay min. 99 %
Heavy metals max. 0.001 %

Order-No.	Quantity
A0666,0005	5 g
A0666,0010	10 g
A0666,0025	25 g

Uridine 5'-diphosphoric acid disodium salt *BioChemica*

B

UDP-Na₂

C₉H₁₂N₂Na₂O₁₂P₂
M = 448.13 g/mol
CAS-No.: 27821-45-0
HS-No.: 29349990
EC-No.: 248-678-9

Storage: -20°C
LGK: 10 - 13

WGK: 1

Specification:

Assay min. 96 %
Loss on drying 10 - 15 %

Order-No.	Quantity
A3852,0100	100 mg
A3852,0500	500 mg

Uridine 5'-monophosphoric acid disodium salt *BioChemica*

B

UMP-Na₂

C₉H₁₁N₂Na₂O₉P
M = 368.15 g/mol
CAS-No.: 3387-36-8
HS-No.: 29349990
EC-No.: 222-211-9

Storage: -20°C
LGK: 10 - 13

WGK: 1

Specification:

Assay min. 99 %
α_{20°C/D}; 1 %, 0.5 M HPO₄ -9.5° - -7.5°
Loss on drying max. 26 %

Order-No.	Quantity
A3853,0001	1 g
A3853,0005	5 g

Uridine 5'-triphosphoric acid trisodium salt hydrate *BioChemica*

B

UTP-Na₃

C₉H₁₂N₂Na₃O₁₅P₃ · x H₂O
M = 550.09 g/mol
CAS-No.: 19817-92-6
HS-No.: 29349990
EC-No.: 243-347-5

Storage: -20°C
Shipment: wet ice
LGK: 10 - 13

WGK: 1

Specification:

Assay min. 97 %
Heavy metals max. 0.001 %
Loss on drying max. 15 %

Order-No.	Quantity
A2237,0500	500 mg
A2237,0001	1 g
A2237,0005	5 g

Urobilinogen

B

aqueous solution

$C_{33}H_{42-50}N_4O_6$
 $M = 590.7 - 598.8$ g/mol
 CAS-No.: 14684-37-8
 HS-No.: 29339980

Storage: 2-8°C
 under argon
 LGK: 10 - 13

Specification:

Assay 25 g/L
 4 ml contain 100 mg
 pH (20°C) 13.2 ± 0.2
 Bilirubin max. 1 %

Order-No. Quantity

A1536,0100 4 ml
A1536,0500 20 ml
A1536,0001 40 ml

Ursolic acid HPLC grade

B

3β-Hydroxyurs-12-en-28-oic acid
 from *Arctostaphylos uva ursi*

$C_{30}H_{48}O_3$
 $M = 456.71$ g/mol
 CAS-No.: 77-52-1
 HS-No.: 29181998

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No. Quantity

A7853,0020 20 mg
A7853,0050 50 mg

Comment: Documents included: HPLC-DAD with UV spectrumUTP- Na_3 see Uridine 5'-triphosphoric acid trisodium salt hydrate *BioChemica* Page 851**Valerenic acid HPLC grade**

B

from *Valeriana officinalis*

$C_{15}H_{22}O_2$
 $M = 234.34$ g/mol
 CAS-No.: 3569-10-6
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No. Quantity

A2073,0020 20 mg
A2073,0020DOC 20 mg
A2073,0050 50 mg
A2073,0050DOC 50 mg
A2073,0100 100 mg
A2073,0100DOC 100 mg

Comment: When you order articles with the "DOC" extension of the order no., the following documents will be supplied: HPLC-DAD with UV spectrum plus documents with a second HPLC method, TLC (2 methods), ^1H -NMR, ^{13}C -NMR (incl. interpretation of the spectra), UV, IR, MS, melting point, elemental analysis. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

L-Valine

L-2-Amino-3-methylbutanoic acid, L-2-Amino-iso-valeric acid

$C_5H_{11}NO_2$
 $M = 117.15$ g/mol
 CAS-No.: 72-18-4
 HS-No.: 29224985
 EC-No.: 200-773-6

Storage: RT
 LGK: 10 - 13

WGK: nwg

Solubility (25°C) 85 g/L (H_2O)**L-Valine Cell culture grade**

B

Specification:

Pyrogen test complies Sulfate max. 0.02 %
 Assay (titr.) min. 99 % As max. 0.0001 %
 $\alpha 20^\circ C/D$; 8 %, 6 M HCl +26.6° - +28.8° Fe max. 0.001 %
 Other amino acids max. 0.5 % Pb max. 0.001 %
 Ammonium max. 0.02 %
 Chloride max. 0.02 %

Order-No. Quantity

A3406,0025 25 g
A3406,0100 100 g
A3406,0250 250 g
A3406,0500 500 g
A3406,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Valine BioChemica

B

Specification:

Assay (titr.) min. 99 % Sulfate max. 0.02 % A (1 cm/0.5 M in 1 M HCl)
 $\alpha 20^\circ C/D$; 8 %, 6 M HCl +26.6° - +28.8° 260 nm max. 0.15
 Heavy metals (as Pb) max. 0.001 % 280 nm max. 0.1
 Other amino acids max. 0.5 %
 Ammonium max. 0.02 %
 Chloride max. 0.02 %

Order-No. Quantity

A3430,0025 25 g
A3430,0100 100 g
A3430,0250 250 g
A3430,0500 500 g
A3430,1000 1 kg

◆ All amino acids from AppliChem are of non-animal origin!

L-Valine pure Ph. Eur., USP

C

Specification:

Assay (titr.) 98.5 - 101.0 %
 α 20°C/D; 8 %, 25 % HCl +26.5° - +29.0°
 α 25°C/D; 8 %, 6 M HCl +26.6° - +28.8°
 Appearance of solution complies
 Chromatogr. purity complies
 Heavy metals (as Pb) max. 0.001 %

Identity complies
 Loss on drying max. 0.3 %
 Organic vol. impurities complies
 Sulfated ash max. 0.1 %
 pH (5 %; H₂O) 5.5 - 7.0
 Other amino acids max. 0.5 %

Ammonium max. 0.02 %
 Chloride max. 0.02 %
 Sulfate max. 0.03 %
 Fe max. 0.001 %

Order-No.	Quantity
A1637,0025	25 g
A1637,0100	100 g
A1637,0250	250 g
A1637,0500	500 g
A1637,1000	1 kg

♦ All amino acids from AppliChem are of non-animal origin!

Valinomycin BioChemica

B

Melting point 186 - 189°C

C₅₄H₉₀N₆O₁₈
 $M = 1111.34$ g/mol
 CAS-No.: 2001-95-8
 HS-No.: 29419000
 EC-No.: 217-896-6

Storage: 2-8°C
 LGK: 6.1 B

Class / PG: 6.1/I
 UN2811
 WGK: 3
 Danger
 H300-H330
 P280-P264-P302+P350-P310

**Specification:**

Assay min. 90 %

Order-No.	Quantity
A2238,0025	25 mg
A2238,0050	50 mg
A2238,0100	100 mg

Literature: (1) Bakker, E.P. (1975) Ionophor antibiotics in *Antibiotics Vol. III*, p. 67-97; (J.W. Corcoran & F.E. Hahn eds.) Springer-Verlag.

Comment: Valinomycin is produced by *Streptomyces fulvissimus* and belongs to the class of neutral transporter of the ionophor antibiotics, without forming a channel. It transports monovalent ions (Rb > K > NH₄ > Na > Li) through membranes, divalent ions are hardly complexed. Valinomycin is highly selective for potassium over sodium (K⁺ : Na⁺ corresp. 10000), without influencing the permeability for other ions.

Valinomycin is practically insoluble in water. It is freely soluble in ether, chloroform, glacial acetic or acetone.

Vancomycin hydrochloride

C₆₆H₇₅Cl₂N₉O₂₄ · HCl
 $M = 1485.73$ g/mol
 CAS-No.: 1404-93-9
 HS-No.: 29419000

Storage: RT
 LGK: 10 - 13

Warning
 H317
 P280

**Vancomycin hydrochloride BioChemica**

B

Specification:

Vancomycin B (HPLC) min. 93 %
 Activity min. 1050 I.U./mg
 Heavy metals max. 0.003 %
 pH (5 %; H₂O) 2.5 - 4.5

Loss on drying max. 5 %

Order-No.	Quantity
A1839,0250	250 mg
A1839,0001	1 g
A1839,0005	5 g

Literature: (1) Perkins, H.R. (1982) *Pharmac. Ther.* **16**, 181-197

(2) Williamson, M.P. & Williams, D.H. (1984) *Eur. J. Biochem.* **138**, 345-348

Vancomycin and related antibiotics.

Hydrophobic interactions affect hydrogen bond strengths in complexes between peptides and vancomycin or ristocetin.

Comment: Vancomycin is a glycopeptide antibiotic produced by *Streptomyces orientalis*. It binds to bacterial cell wall precursors generally ending at the C-terminus with -L-Lys-D-Ala-D-Ala (1) and interferes with the peptidoglycan synthesis. The antibiotic is bacteriostatic and at higher concentrations bactericidal in particular instances against gram-positive bacteria. Gram-negative bacteria, except for some strains of *Neisseria*, are resistant.

Vancomycin hydrochloride is soluble in water (>100 mg/ml) or DMSO (approx. 110 mg/ml). Aqueous solutions are stable for approx. 90 days at +4°C.

Vancomycin hydrochloride pure Ph. Eur.

C

Specification:

Vancomycin B (HPLC) min. 93.0 %
 Activity min. 1050 I.U./mg
 Appearance of solution complies
 Heavy metals (as Pb) max. 0.003 %

Identity complies
 Related subst. complies
 Sulfated ash max. 1 %
 pH (5 %; H₂O) 2.5 - 4.5

Water (K.F.) max. 5 %

Order-No.	Quantity
A6338,0500	500 mg
A6338,0001	1 g
A6338,0005	5 g

6-Vanilloylcatalpol see Picrosid II HPLC grade Page 627

recombinant Human Vascular Endothelial Growth Factor (121) see rHu VEGF (121) Page 854

recombinant Human Vascular Endothelial Growth Factor 121 see rHu VEGF-121 bioconfident grade Page 854

recombinant mouse Vascular Endothelial Growth Factor-164 see rM VEGF-164 bioconfident grade Page 854

recombinant Human Vascular Endothelial Growth Factor (165) see rHu VEGF (165) Page 855

recombinant Human Vascular Endothelial Growth Factor 165 see rHu VEGF-165 bioconfident grade Page 854

recombinant Mouse Vascular Endothelial Growth Factor (165) see rM VEGF (165) Page 855

Vaseline oil see Paraffin oil Page 591

Vaseline, white

C

CAS-No.: 8009-03-8
 HS-No.: 27121090
 EC-No.: 295-456-2

Storage: RT
 LGK: 10 - 13

Specification:

Appearance white paste
 Consistency 60 - 300
 Drop point 35 - 70°C
 Sulfated ash max. 0.05 %

Order-No.	Quantity
A4350,1000	1 kg
A4350,10006	6 x 1 kg
A4350,5000	5 kg

Vebascoside see Acteoside Page 66

rHu VEGF-121 bioconfident grade



B

recombinant Human Vascular
Endothelial Growth Factor 121
Sterile filtered through a 0.2 µm filter.
Lyophilized from 10 mM acetic acid, pH
5.0.
from *Hordeum vulgare*

M = 14.4 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8882,0010	10 µg
A8882,0050	50 µg
A8882,0100	100 µg
A8882,1000	1 mg

Comment: Recombinant human VEGF121 contains 110 amino acids and a 16 amino acid Histidine-based tag for a total length of 126 amino acids and has a predicted molecular mass of 14.4 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 19 kDa in SDS-PAGE.

rHu VEGF (121)



B

rHu VEGF-A, recombinant Human
Vascular Endothelial Growth Factor (121)
lyophilized without additives
from *E. coli*

M = 28.42 kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water not less than 100 µg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:
Endotoxin max. 0.1 EU/µg
Assay (HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8331,0002	2 µg
A8331,0010	10 µg
A8331,0100	100 µg

Comment: Recombinant Human Vascular Endothelial Growth Factor-A (rHu VEGF-121) was originally isolated from tumor cells and referred to as Tumor Angiogenesis Factor or Vascular Permeability Factor. Although expressed at high levels in certain tumor-derived cells it is produced by a wide variety of cell types. In addition to stimulating vascular growth and vascular permeability it may play a role in stimulating vasodilation via nitric oxide-dependent pathways. Alternative splicing of the mRNA for VEGF-A results in several isoforms of the protein being produced. Rat and bovine VEGF are one amino acid shorter than the human factor, and the bovine and human sequences show a homology of 95 %. In contrast to other factors mitogenic for endothelial cells such as FGF-1, FGF-2 and PDGF, VEGF is synthesized as a precursor containing a typical hydrophobic secretory signal sequence of 26 amino acids. Glycosylation is not required for efficient secretion of VEGF. rHu VEGF-121 produced in *E. coli* is a double, non-glycosylated, polypeptide chain that contains 121 amino acids and has a molecular mass of 28.42 kDa.

rM VEGF-164 bioconfident grade

B

recombinant mouse Vascular Endothelial
Growth Factor-164
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 21.4 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 98 %

Order-No.	Quantity
A9080,0010	10 µg
A9080,0050	50 µg

Comment: Recombinant mouse VEGF-164 contains 164 amino acids and a 16 a.a. histidine-based tag for a total length of 180 a.a. and has a predicted molecular mass of 21.4 kDa including his-tag. As a result of glycosylation, therecombinant protein migrates with an apparent molecular mass of 30 kDa in SDS-PAGE.

rHu VEGF-165 bioconfident grade



B

recombinant Human Vascular
Endothelial Growth Factor 165
Sterile filtered through a 0.2 µm filter.
Lyophilized from PBS, pH 7.2.
from *Hordeum vulgare*

M = 20.9 kDa
HS-No.: 29371900

Storage: -20°C
Avoid repeated freeze-thaw cycles.

- We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.
- Always centrifuge the vial before opening.

Specification:
Endotoxin (LAL test) max. 0.05 EU/µg
Pyrogen test (MAT) complies
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8887,0010	10 µg
A8887,0050	50 µg
A8887,0100	100 µg
A8887,1000	1 mg

Comment: Recombinant human VEGF165 contains 165 amino acids and a 16 a.a. Histidine-based tag for a total length of 181 a.a. and has a predicted molecular mass of 21.3 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass of 26-28 kDa in SDS-PAGE.

rHu VEGF (165)



B

recombinant Human Vascular
Endothelial Growth Factor (165)
lyophilized without additives
from *E. coli*

$M = 38.23$ kDa
HS-No.: 29371900

Storage: -20°C

Specification:

Assay min. 98 %
Impurities (SDS-PAGE) max. 2 %

Order-No.	Quantity
A8295,0002	2 µg
A8295,0010	10 µg

Comment: Recombinant Human Vascular Endothelial Growth Factor is a double, non-glycosylated, polypeptide chain containing 165 amino acids.

rM VEGF (165)

B

recombinant Mouse Vascular Endothelial
Growth Factor (165)
lyophilized without additives
from *E. coli*

$M = 39.04$ kDa
HS-No.: 29371900

Storage: -20°C

We recommend to reconstitute in sterile water at 0.1 mg/ml to prepare a stock solution, which can then be further diluted to other aqueous solutions.

Specification:

Assay (RP-HPLC) min. 95 %
Assay (SDS-PAGE) min. 95 %

Order-No.	Quantity
A8291,0002	2 µg
A8291,0010	10 µg
A8291,0100	100 µg

Comment: Vascular Endothelial Growth Factor-A was originally isolated from tumor cells and referred to as Tumor Angiogenesis Factor or Vascular Permeability Factor. Although expressed at high levels in certain tumor-derived cells it is produced by a wide variety of cell types. In addition to stimulating vascular growth and vascular permeability it may play a role in stimulating vasodilation via nitric oxide-dependent pathways. Alternative splicing of the mRNA for VEGF-A results in several isoforms of the protein being produced. Rat and bovine VEGF are one amino acid shorter than the human factor, and the bovine and human sequences show a homology of 95 percent. In contrast to other factors mitogenic for endothelial cells such as FGF-1, FGF-2 and PDGF, VEGF is synthesized as a precursor containing a typical hydrophobic secretory signal sequence of 26 amino acids. Glycosylation is not required for efficient secretion of VEGF. Recombinant Mouse VEGF produced in *E. coli* is a double, non-glycosylated, polypeptide chain containing 165 amino acids and having a molecular mass of 39.04 kDa.

rHu VEGF-A see rHu VEGF (121) Page 854

Vermiculite Granulate

C

HS-No.: 38220000

Storage: RT

◆ Properties

- pure natural product
- harmless for humans and animals
- outstanding absorption of liquids
- almost dustless

Order-No.	Quantity
A4614,8500	8.5 kg

Verruculogen BioChemica

B

from *Penicillium verruculosum*

$C_{27}H_{33}N_3O_7$
 $M = 511.57$ g/mol
CAS-No.: 12771-72-1
HS-No.: 29411000

Storage: -20°C

Class / PG: 6.1/II
UN2811
Danger
H311-H301-H331
P309+P311-P280



Melting point 230 - 233°C

Specification:

Assay approx. 98 %

Order-No.	Quantity
A7960,0001	1 mg
A7960,0005	5 mg

Vesuvium see Bismarck brown Y (C.I. 21000) Page 147

Vesuvium R see Bismarck brown R (C.I. 21010) Page 146

Violet Red Bile Glucose Agar Ph.Eur.



C

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.0 g/L
Bile salts 1.5 g/L
Crystal violet 0.002 g/L
Glucose monohydrate 10.0 g/L
Neutral red 0.03 g/L

Pancreatic digest of gelatin 7.0 g/L
Sodium chloride 5.0 g/L
Yeast extract 3.0 g/L

Specification:

pH before autoclaving
..... approx. 7.4 (20°C)

Order-No.	Quantity
A8194,0500	500 g
A8194,1000	1 kg

Violet Red Bile Lactose Agar

C

<i>VRBL Agar</i>	HS-No.: 38220000	Storage: RT LGK: 10 - 13		
Composition: Agar 15.0 g/L Bile salts 1.5 g/L Crystal violet 0.002 g/L Lactose 10.0 g/L Neutral red 0.03 g/L				
Peptones 10.0 g/L Sodium chloride 5.0 g/L				
Specification: pH before autoclaving approx. 7.4 (20°C)				
			Order-No. A3951,0500 A3951,5000	Quantity 500 g 5 kg

Literature: (1) APHA (1978) Standard Method for the Examination of Dairy Products. 14th Ed.

Comment: This lactose-containing selective medium is used for the detection and enumeration of coliform bacteria.

Direction: Suspend 41.5 g in 1 L of distilled water and boil to dissolve the medium completely. Cool to about 50°C and pour into plates. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Store the prepared medium at 2-8°C, but it is better to use it freshly.

Vitamin A acetate

B

<i>Retinyl acetate</i> oily concentrate	C ₂₂ H ₃₂ O ₂ M = 328.50 g/mol CAS-No.: 127-47-9 HS-No.: 29362100 EC-No.: 204-844-1	Storage: 2-8°C protected from light under argon LGK: 6.1 B	WGK: 1 Warning H361-H315 P281	 
Specification: Activity min. 1350 U/mg				
			Order-No. A2094,0005 A2094,0010	Quantity 5 g 10 g

Vitamin A acid see Retinoic acid pure Ph. Eur. Page 685
 Vitamin B see Nicotinic acid pure Ph. Eur., USP Page 567
 Vitamin B₁ hydrochloride see Thiamine hydrochloride Page 811
 Vitamin B₂ see Riboflavin Page 687
 Vitamin B₆ hydrochloride see Pyridoxin hydrochloride Page 678
 Vitamin B₉ see Folic acid crystalline Page 354
 Vitamin B₁₁ see Folic acid crystalline Page 354

Vitamin B₁₂

<i>Cyanocobalamin</i>	C ₆₃ H ₈₆ CoN ₁₄ O ₁₄ P M = 1355.39 g/mol CAS-No.: 68-19-9 HS-No.: 29362600 EC-No.: 200-680-0	Storage: 2-8°C protected from light LGK: 10 - 13	WGK: 1	

Vitamin B₁₂

B

Specification: Assay (UV) min. 97 % Loss on drying max. 3 %	Order-No. A2090,0500 A2090,0001 A2090,0005	Quantity 500 mg 1 g 5 g

Vitamin B₁₂ pure Ph. Eur.



B

Specification: Assay (photometr., calc. on dried subst.) 96.0 - 102.0 % Identity (TLC) complies Loss on drying max. 12 % (105°C; 2 h) Related subst. (HPLC) max. 3.0 %	A (1 cm/2.5 %, H ₂ O) 361 nm/547 - 559 nm .. 3.15 - 3.40 361/278 nm 1.70 - 1.90	Order-No. A8454,0500 A8454,0001 A8454,0005	Quantity 500 mg 1 g 5 g

Vitamin B₇ see L-Carnitine BioChemica Page 186
 Vitamin C see L-(+)-Ascorbic acid powdered Page 120

Vitamin D₂

B

<i>Calciferol, Ergocalciferol</i>	C ₂₈ H ₄₄ O M = 396.66 g/mol CAS-No.: 50-14-6 HS-No.: 29362900 EC-No.: 200-014-9	Storage: 2-8°C protected from light LGK: 6.1 B	Class / PG: 6.1/III UN2811 WGK: 3+ Danger H372-H301-H311-H330 P280-P301+P310+P314-P284-P260- P302+P350-P310	 
Melting point 114 - 116°C				
Specification: Assay min. 98 % α20°C/D; 4 %, EtOH +102° - +106°				Order-No. A2089,0001 A2089,0005
			Quantity 1 g 5 g	

Vitamin E acetate see DL-α-Tocopherol acetate Page 821

Vitamin E alcohol see DL- α -Tocopherol *BioChemica* Page 821
 Vitamin G see Riboflavin Page 687
 Vitamin H see D(+)-Biotin Page 140
 Vitamin H₁ see 4-Aminobenzoic acid Page 86
 Vitamin K₃ see Menadione Page 528
 Vitamin PP see Nicotinamide pure Ph. Eur., USP Page 566
 Vitexicarpin see Casticin HPLC grade Page 187

Vitexin HPLC grade

B

Orientosid, 8-Glucopyranosylapigenin
 from *Crataegus monogyna*

$C_{21}H_{20}O_{10}$
 $M = 432.38$ g/mol
 CAS-No.: 3681-93-4
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A3394,0005	5 mg
A3394,0005DOC	5 mg
A3394,0010	10 mg
A3394,0010DOC	10 mg

Comment: Please order documents separately, if required (Product-No. A3394D for Euro 107.50): HPLC-DAD with UV spectrum plus documents with TLC, ¹H-NMR, ¹³C-NMR (incl. interpretation of the spectra), UV, IR, MS, melting point. For orders of articles without the "DOC" extension, HPLC-DAD with UV spectrum will be supplied. Please note: For the latter, the additional documentation cannot be supplied later.

Vitexin-2''-O-rhamnoside HPLC grade

B

from *Crataegus monogyna*

$C_{27}H_{30}O_{14}$
 $M = 578.53$ g/mol
 CAS-No.: 64820-99-1
 HS-No.: 29420000

Storage: 2-8°C
 LGK: 10 - 13

Specification:

Assay min. 99 %

Order-No.	Quantity
A6759,0010	10 mg
A6759,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Vomitoxin see Deoxynivalenol *BioChemica* Page 266
 VRBL Agar see Violet Red Bile Lactose Agar Page 856
 Washing buffer for immunoassays (detergent-free) see Immunoassay Buffer Page 446
 Washing buffer for immunoassays (with detergent) see Immunoassay Buffer Page 446

Water

Boiling point 100°C
 Density (d 20°C/4°C) .. 1.00
 Melting point 0°C

H₂O
 $M = 18.01$ g/mol
 CAS-No.: 7732-18-5
 HS-No.: 28530010
 EC-No.: 231-791-2

Storage: RT
 LGK: 10 - 13

Water, PCR tested, DNA free



B

PCR Water

Specification:

Bacterial DNA not detectable (min.
 40 PCR cycle)
 DNases/RNases not detectable

Order-No.	Quantity
A8510,1017	10 x 1,7 ml

Water Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable

Order-No.	Quantity
A7398,0500	500 ml
A7398,1000	1 L
A7398,10006	6 x 1 L

Water Cell culture grade

B

Specification:

Pyrogen test complies
 Acidic/alkaline react. subst. complies
 Heavy metals (as Pb) max. 0.00001 %
 Non-volatile matter max. 0.001 %
 Oxidizable substances complies

Sterility complies
 pH 5 - 7
 Chloride complies
 NH₄ max. 0.00002 %
 Nitrate max. 0.00002 %

Sulfate complies
 Al max. 0.000001 %
 Ca, Mg complies

Order-No.	Quantity
A4149,0500	500 ml
A4149,1000	1 L

Water DNA synthesis and protein sequencing grade

B

Specification:

Non-volatile matter max. 2 ppm
 Residue on ignition max. 3 ppm

Order-No.	Quantity
A2472,2500	2.5 L

Water HPLC grade (for electrochemical detection)

C

Specification:

Non-volatile matter max. 5 ppm
 Residue on ignition max. 3 ppm

Order-No.**Quantity****A1588,2500**

2.5 L

A1588,25004

4 x 2,5 L

Comment: Purified and tested by HPLC-EC. Detector: ESA Coulochem II / Mode: oxidative / Electrode: Graphite**Water Fluorescence grade**

C

Specification:

Non-volatile matter max. 5 ppm
 Residue on ignition max. 3 ppm

A (1 cm/water HPLC grade)

200 nm max. 0.1
 210 nm max. 0.05
 220 nm max. 0.025
 250 nm max. 0.005

Order-No.**Quantity****A2480,2500**

2.5 L

A2480,25004

4 x 2,5 L

Comment: Applicable for the fluorescence analysis.

An excitation in the range of 250 - 750 nm produces no fluorescence emission greater than the solvents Raman signal at 350 nm excitation. This is approximately equivalent to the emission maximum of 1 ppb quinine sulfate.

Water LC-MS grade

C

Specification:

Conductivity max. 2 µS/cm
 TOC max. 0.2 %
 Ca max. 0.1 ppm
 K max. 0.1 ppm
 Mg max. 0.1 ppm
 Na max. 0.1 ppm

GC/ECD individual signals (lindane standard) max. 5 ng/L
 GC/NPD individual signals (ethylparathion standard) max. 10 ng/L

Order-No.**Quantity****A9032,1000**

1 L

A9032,10006

6 x 1 L

A9032,2500

2.5 L

A9032,25004

4 x 2,5 L

Water HPLC grade

C

Specification:

Non-volatile matter max. 5 ppm
 Residue on ignition max. 3 ppm

A (1 cm/water HPLC grade)

200 nm max. 0.1
 210 nm max. 0.05
 220 nm max. 0.025
 250 nm max. 0.005

Order-No.**Quantity****A1589,2500**

2.5 L

A1589,25004

4 x 2,5 L

Water p. A.

C

Specification:

Total N max. 0.00001 %
 Total P max. 0.000001 %
 Total S max. 0.00005 %
 Total Si max. 0.00002 %
 Ca max. 0.000001 %
 Cu max. 0.000001 %
 Fe max. 0.000001 %

K max. 0.000005 %
 Mg max. 0.00002 %
 Na max. 0.000001 %
 Pb max. 0.0000005 %
 Zn max. 0.000001 %

Order-No.**Quantity****A1991,0250**

250 ml

A1991,2500

2.5 L

A1991,25004

4 x 2,5 L

A1991,5000

5 L

A1991,9010

10 L

A1991,9025

25 L

Water bidistilled, sterile

B

Specification:

Sterility complies

Order-No.**Quantity****A4042,0500**

500 ml

A4042,1000

1 L

Water bidistilled

C

*Sterility not tested!***Specification:**

Conductivity max. 5.0 µS/cm

Order-No.**Quantity****A0926,5000**

5 L

A0926,9010

10 L

A0926,9025

25 L

Water demineralized

C

*Sterility not tested!***Specification:**

Conductivity max. 5.0 µS/cm

Order-No.**Quantity****A0983,5000**

5 L

A0983,9010

10 L

A0983,9025

25 L

Water D₂

C

D₂O, Deuterium oxide

Boiling point 101°C
Density (d 20°C/4°C) .. 1.11
Melting point 3.8°C

D₂O
M = 20.03 g/mol
CAS-No.: 7789-20-0
HS-No.: 28451000
EC-No.: 232-148-9

Storage: RT
LGK: 10 - 13

Specification:	Order-No.	Quantity
Deuteration degree min. 99.8 %	DS-7,0005	5 ml
	DS-7,0025	25 ml
	DS-7,0100	100 ml

Water Analysis Test Kits

HS-No.: 38220000 Storage: RT

AppliQUA™ NT Aluminium

C

LGK: 10 - 13 WGK: 1

- ◆ colorimetric assay for Aluminium
- ◆ Measuring range 0.05 - 0.7 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7601,9360	360 Tests

AppliQUA™ NT Ammonium

C

LGK: 8 B

- ◆ colorimetric assay for Ammonium
- ◆ Measuring range 0.25 - 2 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7593,9360	360 Tests

AppliQUA™ NT Ammonium H

C

LGK: 6.1 B Class / PG: 9/II
UN3316
WGK: 1

- ◆ colorimetric assay for Ammonium
- ◆ Measuring range 1 - 50 ppm (mg/L)
- ◆ 180 Tests

Order-No.	Quantity
A7667,9180	180 Tests

AppliQUA™ NT Arsenic

C

- ◆ colorimetric assay for Arsenic
- ◆ Measuring range 2 - 50 ppb (µg/L)
- ◆ 70 Tests

Order-No.	Quantity
A7675,9070	70 Tests

AppliQUA™ NT Boron

C

- ◆ colorimetric assay for Boron
- ◆ Measuring range 0.1 - 3 ppm (mg/L)
- ◆ 120 Tests

Order-No.	Quantity
A7603,9120	120 Tests

AppliQUA™ NT Calcium		C	
LGK: 6.1 B			
◆ colorimetric assay for Calcium ◆ Measuring range 3 - 25 ppm (mg/L) ◆ 360 Tests		Order-No. A7607,9360	Quantity 360 Tests

AppliQUA™ NT Chlorine and pH		C	
LGK: 8 B		Class / PG: 9/II UN3316 WGK: 2 Warning H302-H312 P280 	
◆ colorimetric assay for Chlorine and pH ◆ Measuring range 0.1 - 2 ppm (mg/L) ◆ 360 Tests		Order-No. A7628,9360	Quantity 360 Tests

AppliQUA™ NT Chloride		C	
LGK: 6.1 B			
◆ colorimetric assay for Chloride ◆ Measuring range 5 - 200 ppm (mg/L) ◆ 360 Tests		Order-No. A7609,9360	Quantity 360 Tests

AppliQUA™ NT Chromate		C	
LGK: 10 - 13			
◆ colorimetric assay for Chromate ◆ Measuring range 0.1 - 1.5 ppm (mg/L) ◆ 360 Tests		Order-No. A7605,9360	Quantity 360 Tests

AppliQUA™ NT COD		C	
◆ colorimetric assay for COD ◆ Measuring range 10 - 100 ppm (mg/L) ◆ 360 Tests		Order-No. A7614,9360	Quantity 360 Tests

AppliQUA™ NT Cyanide		C	
LGK: 3 A			
◆ colorimetric assay for Cyanide ◆ Measuring range 0.03 - 0.5 ppm (mg/L) ◆ 450 Tests		Order-No. A7612,9450	Quantity 450 Tests

AppliQUA™ NT Iron H			C	
LGK: 6.1 B			WGK: 2	
◆ colorimetric assay for Iron ◆ Measuring range 1 - 20 ppm (mg/L) ◆ 720 Tests			Order-No. A7624,9720	Quantity 720 Tests
AppliQUA™ NT Iron N				
LGK: 6.1 B			WGK: 2	
◆ colorimetric assay for Iron ◆ Measuring range 0.1 - 2 ppm (mg/L) ◆ 400 Tests			Order-No. A7583,9400	Quantity 400 Tests
AppliQUA™ NT Fluoride H				
◆ colorimetric assay for Fluoride ◆ Measuring range 0.3 - 1.5 ppm (mg/L) ◆ 180 Tests			Order-No. A7617,9180	Quantity 180 Tests
AppliQUA™ NT Fluoride N				
◆ colorimetric assay for Fluoride ◆ Measuring range 0.1 - 0.7 ppm (mg/L) ◆ 100 Tests			Order-No. A7581,9100	Quantity 100 Tests
AppliQUA™ NT Formaldehyde			C	
LGK: 8 B				
◆ colorimetric assay for Formaldehyde ◆ Measuring range 0.1 - 2 ppm (mg/L) ◆ 360 Tests			Order-No. A7585,9360	Quantity 360 Tests
AppliQUA™ NT Hydrazine			C	
LGK: 8 B			Class / PG: 9/III UN3316	
◆ colorimetric assay for Hydrazine ◆ Measuring range 0.2 - 4 ppm (mg/L) ◆ 180 Tests			Order-No. A7589,9180	Quantity 180 Tests
AppliQUA™ NT Hydrogensulfide			C	
◆ colorimetric assay for Hydrogensulfide ◆ Measuring range 0.2 - 3 ppm (mg/L) ◆ 360 Tests			Order-No. A7634,9360	Quantity 360 Tests

AppliQUA™ NT Copper			C	
LGK: 10 - 13				
◆ colorimetric assay for Copper ◆ Measuring range 0.3 - 4 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7622,9360	Quantity 360 Tests	
AppliQUA™ NT Magnesium			C	
LGK: 3 A WGK: 1				
◆ colorimetric assay for Magnesium ◆ Measuring range 3 - 25 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7637,9360	Quantity 360 Tests	
AppliQUA™ NT Manganese			C	
LGK: 10 - 13				
◆ colorimetric assay for Manganese ◆ Measuring range 0.5 - 5 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7587,9360	Quantity 360 Tests	
AppliQUA™ NT Nickel			C	
LGK: 3 A				
◆ colorimetric assay for Nickel ◆ Measuring range 0.5 - 7 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7591,9360	Quantity 360 Tests	
AppliQUA™ NT Nitrate H			C	
LGK: 6.1 B				
◆ colorimetric assay for Nitrate ◆ Measuring range 5 - 300 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7598,9360	Quantity 360 Tests	
AppliQUA™ NT Nitrate N			C	
◆ colorimetric assay for Nitrate ◆ Measuring range 1 - 25 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7646,9360	Quantity 360 Tests	
AppliQUA™ NT Nitrite			C	
LGK: 10 - 13				
◆ colorimetric assay for Nitrite ◆ Measuring range 0.1 - 2 ppm (mg/L) ◆ 360 Tests				
		Order-No. A7596,9360	Quantity 360 Tests	

AppliQUA™ NT pH in sea water			C
	LGK: 10 - 13		
◆ colorimetric assay for the pH in sea water			
◆ Measuring range pH 7.0 - 9.1			
◆ 720 Tests			
		Order-No. A7578,9720	Quantity 720 Tests

AppliQUA™ NT pH in fresh water			C
	LGK: 10 - 13		
◆ colorimetric assay for the pH in fresh water			
◆ Measuring range pH 5.0 - 9.5			
◆ 720 Tests			
		Order-No. A7656,9720	Quantity 720 Tests

AppliQUA™ NT Phenols			C
◆ colorimetric assay for Phenols			
◆ Measuring range 0.1 - 4 ppm (mg/L)			
◆ 70 Tests			
		Order-No. A7640,9070	Quantity 70 Tests

AppliQUA™ NT Phosphate H			C
	LGK: 8 B		
◆ colorimetric assay for Phosphate			
◆ Measuring range 3 - 30 ppm (mg/L)			
◆ 360 Tests			
		Order-No. A7654,9360	Quantity 360 Tests

AppliQUA™ NT Phosphate M			C
	LGK: 8 B		
◆ colorimetric assay for Phosphate			
◆ Measuring range 0.2 - 2.5 ppm (mg/L)			
◆ 360 Tests			
		Order-No. A7652,9360	Quantity 360 Tests

AppliQUA™ NT Phosphate N			C
	LGK: 8 B		
◆ colorimetric assay for Phosphate			
◆ Measuring range 0.025 - 0.35 ppm (mg/L)			
◆ 360 Tests			
		Order-No. A7643,9360	Quantity 360 Tests

AppliQUA™ NT Oxygen			C
	LGK: 8 B		
◆ colorimetric assay for Oxygen			
◆ Measuring range 2 - 12 ppm (mg/L)			
◆ 360 Tests			
		Order-No. A7649,9360	Quantity 360 Tests

AppliQUA™ NT Silicate H

C

- ◆ colorimetric assay for Silicate
- ◆ Measuring range 5 - 100 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7658,9360	360 Tests

AppliQUA™ NT Silicate N

C

LGK: 10 - 13

- ◆ colorimetric assay for Silicate
- ◆ Measuring range 0.3 - 4 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7669,9360	360 Tests

AppliQUA™ NT Sulfate

C

LGK: 5.1 B

- ◆ colorimetric assay for Sulfate
- ◆ Measuring range 50 - 1000 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7660,9360	360 Tests

AppliQUA™ NT Sulfite

C

- ◆ colorimetric assay for Sulfite
- ◆ Measuring range 0.3 - 3 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7672,9360	360 Tests

AppliQUA™ NT Tannin and Lignin

C

- ◆ colorimetric assay for Tannin and Lignin
- ◆ Measuring range 2 - 12 ppm (mg/L)
- ◆ 360 Tests

Order-No.	Quantity
A7664,9360	360 Tests

AppliQUA™ NT Zinc

C

LGK: 8 B

- ◆ colorimetric assay for Zinc
- ◆ Measuring range 0.1 - 1 ppm (mg/L)
- ◆ 240 Tests

Order-No.	Quantity
A7662,9240	240 Tests

Water bath disinfection see AppliClear-Water Page 114
Waterbath disinfection reagent see Aquabator-Clean™ Page 117

Waymouth's MB 752/1 - Medium

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

Waymouth's MB 752/1 - Medium			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1973,1000	1 L	
	A1973,5000	5 L	
	A1973,9010N	10 L	
	A1973,9050	50 L	

Waymouth's MB 752/1 - Medium			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1527,1000	1 L	
	A1527,5000	5 L	
	A1527,9010	10 L	
	A1527,9050	50 L	

Waymouth's MB 752/1 - Medium			B
without L-Glutamine	Order-No.	Quantity	
with 20 mM HEPES	A1981,1000	1 L	
without Sodium hydrogen carbonate	A1981,5000	5 L	
	A1981,9010	10 L	
	A1981,9050	50 L	

Waymouth's MB 752/1 - Medium			B
with L-Glutamine	Order-No.	Quantity	
with 20 mM HEPES	A1961,1000	1 L	
without Sodium hydrogen carbonate	A1961,5000	5 L	
	A1961,9010	10 L	
	A1961,9050	50 L	

Werramycin A see Nonactin *BioChemica* Page 576
Western blot Stripping buffer see Immunoassay Buffer Page 446

Western blot - Transfer buffer

HS-No.: 38220000

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3(6.1)/II
UN1992
WGK: 1
Danger
H301-H370-H330-H311
P280-P210-P302+P352



Composition:	Specification:	Order-No.	Quantity
Glycine 2.93 g/L (39 mM)	pH (20°C) 8.3	A3854,0500	500 ml
Methanol 200 ml/L		A3854,1000	1 L
SDS 0.37 g/L (1.28 mM)			
Tris 5.81 g/L (48 mM)			

William's Media E

HS-No.: 38210000

Storage: 2-8°C
LGK: 10 - 13

hygroscopic
P262

William's Medium E			B
without L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1309,1000	1 L	
	A1309,5000	5 L	
	A1309,9010	10 L	
	A1309,9050	50 L	

William's Medium E			B
with L-Glutamine	Order-No.	Quantity	
without Sodium hydrogen carbonate	A1910,1000	1 L	
	A1910,5000	5 L	
	A1910,9010	10 L	
	A1910,9050	50 L	

William's Medium E

without L-Glutamine
without Phenol red
without Sodium hydrogen carbonate

Order-No.	Quantity
A3029,1000	1 L
A3029,5000	5 L
A3029,9010	10 L
A3029,9050	50 L

B

William's Medium E

with L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1962,1000	1 L
A1962,5000	5 L
A1962,9010	10 L
A1962,9050	50 L

B

William's Medium E

with L-Glutamine
without Phenol red
without Sodium hydrogen carbonate

Order-No.	Quantity
A3136,1000	1 L
A3136,5000	5 L
A3136,9010	10 L
A3136,9050	50 L

B

William's Medium E

without L-Glutamine
with 25 mM HEPES
without Sodium hydrogen carbonate

Order-No.	Quantity
A1966,1000N	1 L
A1966,5000	5 L
A1966,9010	10 L
A1966,9050	50 L

B

Withaferin A BioChemica

B

Withaferin E
herbal from *Withania somnifera*

$C_{28}H_{38}O_6$
 $M = 470.6$ g/mol
CAS-No.: 5119-48-2
HS-No.: 29419000

Storage: -20°C

P262-P309+P311-P260

Melting point 241 - 245°C

Specification:

Assay (TLC) approx. 97 %
 λ_{max} 214, 335 nm
Appearance white to off-white
Solubility (20 mg/ml DMSO) solid
..... clear, colorless

Order-No.	Quantity
A8687,0001	1 mg
A8687,0005	5 mg

Comment: Withaferin A is soluble in Methanol, Ethanol, DMSO.

Withaferin E see Withaferin A BioChemica Page 866
Wogonin-7- β -D-glucopyranosidouronate see Wogonosid HPLC grade Page 866

Wogonin HPLC grade

B

5,7-Dihydroxy-8-methoxyflavon
from *Scutellaria baicalensis*

$C_{16}H_{12}O_5$
 $M = 284.27$ g/mol
CAS-No.: 632-85-9
HS-No.: 29329900

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97.0 %

Order-No.	Quantity
A8746,0010	10 mg
A8746,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Wogonosid HPLC grade

B

Wogonin-7- β -D-glucopyranosidouronate
from *Scutellaria baicalensis*

$C_{22}H_{20}O_{11}$
 $M = 460.39$ g/mol
CAS-No.: 518-18-5
HS-No.: 29389090

Storage: 2-8°C
LGK: 10 - 13

Specification:

Assay min. 97.0 %

Order-No.	Quantity
A8750,0010	10 mg
A8750,0020	20 mg

Comment: Documents included: HPLC-DAD with UV spectrum.

Wortmannin BioChemica

B

from *Penicillium fusiculosum*

$C_{23}H_{24}O_8$
 $M = 428.43$ g/mol
CAS-No.: 19545-26-7
HS-No.: 29349990

Storage: 2-8°C
protected from light

Class / PG: 6.1/1
UN3462
Danger
H310-H300-H330
P302+P352-P280-P308+P313



Specification:

Assay min. 98 %
Solubility (10 mg/ml MeOH) clear, colorless

Order-No.	Quantity
A7623,0001	1 mg
A7623,0005	5 mg
A7623,0010	10 mg

Literature: (1) Wymann, M.P. et al. (1996) *Mol. Cell. Biol.* **16**, 1722-1733

(2) Boulton, S. et al. (1996) *Carcinogenesis* **17**, 2285-2290

(3) Barker, S.A. et al. (1998) *Mol. Biol. Cell* **9**, 483-496

(4) Chen, X. & Wang; Z. (2001) *EMBO reports* **2**, 842-849

(5) Liu, X. & Erikson, R.L. (2003) *Proc. Natl. Acad. Sci. USA* **100** 5789-5794

(6) Wipf, P. & Halter, R.J. (2005) *Org. Biomol. Chem.* **3** 2053-2061

(7) Nakanishi, S. et al. (1992) *J. Biol. Chem.* **267** 2157-2163

Wortmannin Inactivates Phosphoinositide 3-Kinase by Covalent Modification of Lys-802, a Residue Involved in the Phosphate Transfer Reaction.

Wortmannin is a potent inhibitor of DNA double strand break but not single strand break repair in Chinese hamster ovary cell.

Wortmannin-Sensitive Phosphorylation, Translocation, and Activation of PLC γ 1, but not PLC γ 2, in Antigen-stimulated RBL-2H3 Mast Cells.

Regulation of EGF receptor endocytosis by wortmannin through activation of Rab5 rather than inhibition of phosphatidylinositol 3-kinase.

Polo-like kinase (Plk)1 depletion induces apoptosis in cancer cells.

Chemistry and biology of wortmannin.

Wortmannin, a Microbial Product Inhibitor of Myosin Light Chain Kinase.

Comment: Wortmannin is a substance isolated from *Penicillium wortmanni* (*Talaromyces wortmanni* KY12420). Chemically, it belongs to the viridin class of steroidal furans. Wortmannin specifically and irreversibly binds to the ATP-binding site of Phosphatidylinositol 3-Kinases (PI3Ks; ref. 1) and the Polo-like Kinases (5). In addition, MLCK is inhibited (7). Therefore, Wortmannin is a useful tool to study the signaling cascades involving inositolphosphates and e.g. the mitogen-activated protein kinase cascades. Effects on DNA-repair (2) and endocytoses (4) were demonstrated as well.

Solubility and Stability: Wortmannin is hygroscopic and has to be stored dry and protected from light. It is soluble in methanol and DMSO. Stock solutions may be prepared in a concentration of 1 - 20 mM and stored aliquoted at -20°C. The working concentration ranges from 10 to 100 nM. In aqueous solutions (pH 3 - 8) Wortmannin is unstable. The half life in cell cultures is approx. 10 minutes only.

Wright's Eosin-Methylene blue

B

Eosin-Methylene blue according to Wright

HS-No.: 32041900

Storage: RT
LGK: 10 - 13

WGK: 2
Warning
H319-H302
P260-P305+P351+P338



Specification:

λ_1 648 - 651 nm
 λ_2 521 - 524 nm
E 1 %/1 cm, λ_1 1200 - 1400
E 1 %/1 cm, λ_2 650 - 850

Identity (UV) complies
Loss on drying max. 10 %
TLC-Test complies

pH (0.01 %; 50 % MeOH)
..... 6.0 - 7.0

Order-No.	Quantity
A4261,0010	10 g
A4261,0025	25 g
A4261,0100	100 g

Wright's Eosin-Methylene blue - Solution

B

Solution in methanol

HS-No.: 38220000

Storage: RT
LGK: 3A

Class / PG: 3(6.1)/II
UN1992
WGK: 1
Danger
H311-H330-H225-H370-H301
P233-P308+P313-P280-P210



Cytopl. (lymphocyte) . blue
Eosinophiles red to redbrown
Erythrocytes rose
Neutrophiles light violet
Nuclei violet

Specification:

λ_{max} 1 645 - 652 nm
 λ_{max} 2 521 - 524 nm
E 1/1cm, λ_{max} 1:250 dil. (100 % MeOH)
..... 0.350 - 0.600

E 1/1cm, λ_{max} 1:250 dil. (100 % MeOH)
..... 0.700 - 1.100

Order-No.	Quantity
A4278,0250	250 ml
A4278,0500	500 ml
A4278,1000	1 L

WS1228A see Triacsin C BioChemica Page 828

WST-1 BioChemica

B

4-[3-(4-Iodophenyl)-2-(4-nitrophenyl)-2H-5-tetrazolio]-1,3-benzene disulfonate

$C_{19}H_{12}IN_5NaO_6S_2$
 $M = 651.35$ g/mol
CAS-No.: 150849-52-8
HS-No.: 29339980

Storage: 2-8°C

Warning
H335-H312-H302-H332
P308+P313-P302+P352



Specification:

Assay (TLC) complies to standard
 λ_{max} (formazan) 438 nm

Solubility (H $_2$ O) 100 mg/10 ml
Water (K.F.) max. 5 %

Order-No.	Quantity
A2549,0025	25 mg
A2549,0100	100 mg

WST-3 BioChemica

B

4-[3-(4-Iodophenyl)-2-(2,4-dinitrophenyl)-2H-5-tetrazolio]-1,3-benzene disulfonate

C₁₉H₁₀IN₈NaO₁₀S₂
M = 696.35 g/mol
CAS-No.: 161617-45-4
HS-No.: 29339980

Storage: 2-8°C

WGK: 3
Warning
H332-H302-H335-H312
P302+P352-P308+P313



Specification:

Assay (TLC) complies to standard

λ_{max} (formazan) 433 nm

Mol. absorption (formazan) 40,000

Solubility (H₂O) 100 mg/10 ml

Order-No.

A7695,0025

A7695,0100

A7695,0500

Quantity

25 mg

100 mg

500 mg

Xanthine

B

2,6-Dihydroxypurine

C₅H₄N₄O₂
M = 152.11 g/mol
CAS-No.: 69-89-6
HS-No.: 29335995
EC-No.: 200-718-6

Storage: RT
LGK: 10 - 13
Disposal: 3

Melting point >300°C

Specification:

Assay min. 98 %

E 1 %/1 cm, 278nm; pH 10 599 - 612

Heavy metals max. 0.001 %

Loss on drying max. 1 %

Order-No.

A0665,0010

A0665,0025

Quantity

10 g

25 g

Xanthohumol HPLC grade

B

from *Humulus lupulus*

C₂₁H₂₂O₅
M = 354.40 g/mol
CAS-No.: 6754-58-1
HS-No.: 29329900

Storage: 2-8°C

Specification:

Assay min. 99 %

Order-No.

A7875,0020

A7875,0050

Quantity

20 mg

50 mg

Comment: Documents included: HPLC-DAD with UV spectrum

Xanthophyll see Lutein pure Page 498

X-α-Gal BioChemica

B

3-Bromo-4-chloro-3-indolyl-α-D-galactopyranoside

C₁₄H₁₅BrClNO₆
M = 408.60 g/mol
CAS-No.: 29329900

Storage: -20°C
protected from light

Specification:

Assay min. 98 %

Water (K.F.) max. 1 %

Order-No.

A5070,0100

A5070,0250

Quantity

100 mg

250 mg

X-Gal

Melting point 223°C (dec.)

C₁₄H₁₅BrClNO₆
M = 408.63 g/mol
CAS-No.: 7240-90-6
HS-No.: 29349990
EC-No.: 230-640-8

Storage: -20°C
protected from light

X-Gal Molecular Biology grade

B

Specification:

DNases/RNases/Proteases not detectable

Assay min. 99 %

α20°C/D; 1 %, DMF (50 %) -62° ± 2°

Water (K.F.) max. 1 %

Order-No.

A4978,0100

A4978,0250

A4978,0500

A4978,0001

A4978,0005

Quantity

100 mg

250 mg

500 mg

1 g

5 g

X-Gal BioChemica

B

Specification:

Assay min. 99 %
 α 20°C/D; 1 %, DMF (50 %) . -62' $\pm$ 2'
 Water (K.F.) max. 1 %

Order-No.	Quantity
A1007,0250	250 mg
A1007,0500	500 mg
A1007,0001	1 g
A1007,0005	5 g
A1007,0010	10 g

Literature: (1) Lojda, Z. *et al.* (1973) *Histochemie* **34**, 361-369
 (2) Lin, W.-c. *et al.* (1990) *Cancer Res.* **50**, 2808-2817
 (3) Maas, S. (1999) *BioTechniques* **27**, 1126-1128

Synthetic substrates in the histochemical demonstration of intestinal disaccharides.
 Bacterial *lacZ* Gene as a highly sensitive marker to detect micrometastasis formation during tumor progression.
 Efficient and rapid procedure for the blue-white selection of recombinant bacterial clones.

Comment: X-Gal is a substrate of the β -galactosidase. It is used for the identification of *lacZ*⁺ bacteria, especially for the assay of β -galactosidase, expressed from recombinant vectors. β -Galactosidase cleaves the substrate and releases 5-Bromo-4-chloro-3-indoxyl (X). The indoxyl will be oxidized to the insoluble indigo. Prepare a stock solution by dissolving 20 mg/ml X-Gal in dimethylformamide. Store this solution at -20°C protected from light.
 For the use in LB/Ampicillin plates the stock solution is diluted 1 : 1000 (final concentration 20 μ g/ml) or 1 : 500 (final concentration 40 μ g/ml). Make sure, that the medium is cooled down to approx. 50°C.
 The quantity of X-Gal can be reduced, if the X-Gal-solution in DMF is sprayed on the agar plates (with grown bacterial colonies! ref. 3).

X-Glc see X-Glu BioChemica Page 869

X-GlcA see X-Glucuro CHA salt BioChemica Page 869

X-Glu BioChemica

B

5-Bromo-4-chloro-3-indolyl- β -D-glucopyranoside, X-Glc

C₁₄H₁₅BrClNO₆
 M = 408.63 g/mol
 CAS-No.: 15548-60-4
 HS-No.: 29349990
 EC-No.: 239-603-0

Storage: -20°C
 protected from light

Melting point 235°C (dec.)

Specification:

Assay min. 98 %
 Water (K.F.) max. 0.5 %

Order-No.	Quantity
A1242,0050	50 mg
A1242,0250	250 mg

Literature: (1) Horwitz, J.P. *et al.* (1964) *J. Med. Chem.* **7**, 574-575

Substrates for cytochemical demonstration of enzyme activity: Some substituted 3-Indolyl- β -D-glycopyranosides.

Comment: X-Glu is a substrate of the β -glucosidase. β -Glucosidase cleaves the substrate and releases 5-Bromo-4-chloro-3-indoxyl (X). The indoxyl will be oxidized to the insoluble indigo.

X-Gluc see X-Glucuro CHA salt BioChemica Page 869

X-Glucuro CHA salt BioChemica

B

5-Bromo-4-chloro-3-indolyl- β -D-glucuronide cyclohexylammonium salt, X-GlcA, X-Gluc

C₂₀H₂₆BrClN₂O₇
 M = 521.79 g/mol
 CAS-No.: 114162-64-0
 HS-No.: 29389090

Storage: -20°C
 protected from light

Melting point 225°C (dec.)

Specification:

Assay (TLC) min. 99 %
 Water (K.F.) max. 5.0 %

Order-No.	Quantity
A1113,0100	100 mg
A1113,0250	250 mg
A1113,0001	1 g

Literature: (1) Jefferson, R.A. *et al.* (1986) *Proc. Natl. Acad. Sci. USA* **83**, 8447-8451
 (2) Jefferson, R.A. *et al.* (1987) *EMBO J.* **6**, 3901-3907

β -Glucuronidase from *E. coli* as a gene-fusion marker.
 GUS fusions: β -Glucuronidase as a sensitive gene fusion marker in higher plants.

Comment: X-Glucuro is a substrate of the β -glucuronidase. β -Glucuronidase cleaves the substrate and releases 5-Bromo-4-chloro-3-indoxyl (X). The indoxyl will be oxidized to the insoluble indigo. β -Glucuronidase is used as an alternative to β -galactosidase and chloramphenicol acetyltransferase (CAT), if the plant has no endogenous β -glucuronidase activity. The staining is performed with 1 to 2 mg/ml X-Glucuro CHA salt in 50 mM Na₂HPO₄, pH 7.0 between 20 minutes and several hours at 37°C (2). It is soluble in water or DMSO

X-Glucuro sodium salt trihydrate BioChemica

B

5-Bromo-4-chloro-3-indolyl- β -D-glucuronide sodium salt trihydrate, X-Gluc, X-GlcA

C₁₄H₁₂BrClNNaO₇ · 3H₂O
 M = 498.58 g/mol
 CAS-No.: 12954-41-9
 HS-No.: 29349990

Storage: -20°C
 protected from light

Melting point > 250°C (dec.)

Specification:

Assay (TLC) min. 99 %
 Water (K.F.) max. 12 %

Order-No.	Quantity
A1114,0010	10 mg
A1114,0025	25 mg

X-Phos disodium salt *BioChemica*

B

5-Bromo-4-chloro-3-indolyl phosphate
disodium salt

$C_8H_4BrClNNa_2O_4P$
 $M = 370.43 \text{ g/mol}$
CAS-No.: 102185-33-1
HS-No.: 29339980

Storage: -20°C
protected from light

Solubility (20°C) 20 mg/ml (H₂O)

Specification:

Assay (TLC) min. 98.5 %
Phosphate max. 0.1 %

Order-No.	Quantity
A1116,0100	100 mg
A1116,0250	250 mg

XLD Agar

C

HS-No.: 38210000

Storage: RT
LGK: 10 - 13

Composition:

Agar 15.3 g/L
Ammonium ferric citrate ... 0.8 g/L
L-Lysine 5.0 g/L
Lactose monohydrate 7.5 g/L
Phenol red 0.08 g/L
Sodium chloride 5.0 g/L

Sodium deoxycholate ... 2.5 g/L
Sodium thiosulfate 6.8 g/L
Sucrose 7.5 g/L
Xylose 3.5 g/L
Yeast extract 3.0 g/L

Specification:

pH before autoclaving
..... approx. 7.4 (20°C)

Order-No.	Quantity
A5920,0500	500 g
A5920,5000	5 kg

Literature: (1) Taylor (1965) *Am. J. Clin. Pathol.* **44**, 471

Comment: This is a selective medium for the isolation and differentiation of enteric pathogens, especially *Shigella* species.

Direction: Suspend 57 g in 1 L of distilled water and heat with frequent agitation until the medium boils. Transfer immediately to a water bath and cool to 50°C. Pour plates as soon as the medium has cooled. **Warning:** The medium is heat sensitive. No further sterilisation is necessary or desirable. Store the prepared medium protected from light at 2-8°C.

X-Phos-pT see BCIP *BioChemica* Page 130

X-Phos p-toluidine salt see BCIP *BioChemica* Page 130

XTT sodium salt *BioChemica*

B

2,3-Bis-(2-methoxy-4-nitro-5-
sulfophenyl)-2H-tetrazolium-5-
carboxanilide sodium salt

$C_{22}H_{16}N_7O_{13}S_2Na$
 $M = 673.50 \text{ g/mol}$
CAS-No.: 111072-31-2
HS-No.: 29339980

Storage: 2-8°C

Specification:

λ_{max} 283 - 287 nm
E 1 %/1 cm, 285 nm 14,800 - 16,800
Loss on drying max. 15 %

Order-No.	Quantity
A2240,0050	50 mg
A2240,0100	100 mg
A2240,0250	250 mg
A2240,0500	500 mg

Literature: (1) Scudiero, D.A. *et al.* (1988) *Cancer Res.* **48**, 4827-4833

(2) Weislow, O.S. *et al.* (1989) *J. Natl. Cancer Inst.* **81**, 577-586

(3) Jost, L.M. *et al.* (1992) *J. Immunol. Methods* **147**, 153-165

(4) Nargi, F.E. & Yang, T.J. (1993) *J. Immunol. Methods* **159**, 81-91

(5) Meshulam, T. *et al.* (1995) *J. Infect. Dis.* **172**, 1153-1156

(6) Funk, D. *et al.* (2007) *BioTechniques* **43**, 178-186

Evaluation of a soluble Tetrazolium/Formazan assay for cell growth and drug sensitivity in culture using human and other tumor cell lines.

New soluble-Formazan assay for HIV-1 cytopathic effects: Application to high-flux screening of synthetic and natural products for AIDS-antiviral activity.

Improved short- and long-term XTT-based colorimetric cellular cytotoxicity assay for melanoma and other tumor cells.

Optimization of the L-M cell bioassay for quantitating tumor necrosis factor in serum and plasma.

A simplified new assay for assessment of fungal cell damage with the Tetrazolium dye XTT.

Serum albumin leads to false-positive results in the XTT and the MTT assay.

Comment: XTT is a tetrazolium salt, similar to MTT. Upon enzymatic treatment, the water-insoluble formazan is formed. While the cytotoxic MTT has to be dissolved in DMSO, XTT is water-soluble and not toxic itself. Even if MTT is better metabolized by many cell lines, XTT is sufficiently reduced by the cells in the presence of phenazine methosulfate (PMS). PMS does not influence the turnover of XTT. Depending on the cell line, the optimal conditions are 50 µg XTT and 0.15 - 0.4 µg PMS per 96-plate well (1). XTT is used e. g. for the screening of anti-HIV drugs (2), cytotoxicity tests (3), quantification of TNF-α in bioassays (4) or determination cell damage in fungi, e. g. by antimycotics (5). Serum albumin may lead to an increased signal in the XTT assay. This effect is concentration-dependent is due to a free cysteine residue in albumin. Glutathione and cysteine show similar effects. Interference by albumin may be reduced by addition of N-ethylmaleimide (6). We recommend to prepare a stock solution in an aqueous solution (1 mg/ml), such as e.g. PBS or medium without serum.

Xylenebrilliantcyanine see Coomassie® Brilliant blue R-250 (C.I. 42660) Page 242

Xylene - Mixture of isomers

Boiling point approx. 138°C

C_8H_{10}
 $M = 106.17$ g/mol
CAS-No.: 1330-20-7
HS-No.: 29024400
EC-No.: 215-535-7

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/III
UN1307
WGK: 2
Warning
H315-H312-H332-H226
P302+P352



Xylene - Mixture of isomers Histology grade

B

Specification:

Assay (HPLC) min. 99 %
Benzene max. 0.3 %
Thiophene max. 0.001 %
Toluene max. 0.1 %
As max. 0.0003 %

Ca max. 0.002 %
Cu max. 0.0002 %
Fe max. 0.0002 %
Pb max. 0.0001 %
Zn max. 0.0002 %

Order-No.	Quantity
A2476,1000	1 L
A2476,2500	2.5 L
A2476,25004	4 x 2,5 L
A2476,5000	5 L

Xylene - Mixture of isomers p. A.

C

Specification:

Assay (HPLC) min. 99.5 %
Non-volatile matter max. 10 ppm
Benzene max. 0.1 %
Ethylbenzene max. 3.0 %
Thiophene max. 0.0001 %
Toluene max. 0.1 %
Water (K.F.) max. 0.01 %
Al max. 0.0005 %
Ba max. 0.0001 %
Cd max. 0.0001 %
Co max. 0.0001 %

Cr max. 0.0001 %
Fe max. 0.0001 %
Mg max. 0.0001 %
Mn max. 0.0001 %
Na max. 0.0002 %
Ni max. 0.0001 %
Pb max. 0.0001 %
Zn max. 0.0001 %

Order-No.	Quantity
A0663,0500	500 ml
A0663,1000	1 L
A0663,10006	6 x 1 L
A0663,2500	2.5 L
A0663,25004	4 x 2,5 L
A0663,5000	5 L
A0663,9010	10 L
A0663,9025BK	25 L
A0663,9025PE	25 L

Xylene - Mixture of isomers pure Ph. Helv.

C

Specification:

Acidic/alkaline react. subst. complies
Boiling range (137 - 143°C) . ≥ 97.5 vol%
Density (d 20°C/4°C) 0.860 - 0.866
H₂SO₄-discolored matter . complies
Identity (IR) complies
Residue after evaporation . max. 0.005 %
Loss on drying max. 0.05 %

Order-No.	Quantity
A4827,1000	1 L
A4827,2500	2.5 L
A4827,25004	4 x 2,5 L
A4827,5000	5 L
A4827,9010	10 L
A4827,9025BK	25 L
A4827,9025PE	25 L

Xylene - Mixture of isomers pure

C

Specification:

Assay (HPLC) min. 98 %
o-Xylene 5 - 19 %
p-Xylene 18 - 25 %
Water (K.F.) max. 0.1 %

Order-No.	Quantity
A0636,1000	1 L
A0636,10006	6 x 1 L
A0636,2500	2.5 L
A0636,25004	4 x 2,5 L
A0636,5000	5 L
A0636,9010	10 L
A0636,9025BK	25 L
A0636,9025PE	25 L

Xylene - Mixture of isomers for synthesis

C

Specification:

Assay (GC, C₈H₁₀-Isomere) . min. 97 %
Density (d 20°C/4°C) 0.862 - 0.866
Loss on drying max. 0.05 %

Order-No.	Quantity
A4320,1000	1 L
A4320,10006	6 x 1 L
A4320,2500	2.5 L
A4320,25004	4 x 2,5 L
A4320,5000	5 L
A4320,9010	10 L
A4320,9025BK	25 L
A4320,9025PE	25 L

Xylene - Mixture of isomers Technical grade

C

Specification:

Assay (GC, C₈H₁₀-Isomeres) approx. 97 %
o-Xylene 5 - 20 %
p-Xylene 15 - 25 %
Water (K.F.) max. 1 %

Order-No.	Quantity
A1714,2500	2.5 L
A1714,25004	4 x 2,5 L
A1714,5000	5 L
A1714,9010	10 L
A1714,9025BK	25 L
A1714,9025PE	25 L

Xylene cyanol FF (C.I. 42135)

C₂₅H₂₇N₂NaO₆S₂
M = 538.61 g/mol
CAS-No.: 4463-44-9
HS-No.: 32041900
EC-No.: 224-728-5

Storage: RT
LGK: 10 - 13

WGK: 3*
Warning
H319
P262



Xylene cyanol FF (C.I. 42135) Molecular Biology grade

B

Specification:

DNases/RNases/Proteases not detectable
λ_{max} (H₂O) 613 - 616 nm
Loss on drying (110°C) max. 6 %

Order-No.	Quantity
A4976,0005	5 g
A4976,0010	10 g
A4976,0025	25 g

Xylene cyanol FF (C.I. 42135) BioChemica

B

Specification:

λ_{max} (H₂O) 613 - 616 nm
Loss on drying (110°C) max. 6 %

Order-No.	Quantity
A1408,0010	10 g
A1408,0025	25 g

Literature: (1) Maxam, A.M. & Gilbert, W. (1977) *Proc. Natl. Acad. Sci. USA* **74**, 560-564 A new method for sequencing DNA.
(2) Ogden, R.C. & Adams, D.A. (1987) *Methods Enzymol.* **152**, 61-87 Electrophoresis in agarose and acrylamide gels.
(3) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition, page 6.12. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(4) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) 2000. *Current Protocols in Molecular Biology*. Page 7.6.5 Suppl. 16 John Wiley & Sons, New York.

Comment: Bromophenol blue (BPB) and xylene cyanol FF (XC) are the most widely used stains in gel electrophoresis for tracing the migration of samples on electrophoretic gels. Usually, both stains are added to the sample buffers (loading buffers; see our *ready-to-use loading buffers*) at concentrations of 0.05 % to 0.25 %.

In **denaturing** gels, the dye migrates with sizes like the following oligonucleotide:

Polyacrylamide (%)	Bromophenol blue	Xylene cyanol (according to ref. 1, 4)
5	35 bases	130 bases
6	26 bases	106 bases
8	19 bases	75 bases
10	12 bases	55 bases
20	10 bases	28 bases

Xylene substitute see AppliClear (Xylene substitute) Page 114

para-Xylenol blue

C

p-Xylenolsulfonephthalein

C₂₃H₂₂O₅S
M = 410.49 g/mol
CAS-No.: 125-31-5
HS-No.: 29349990
EC-No.: 204-736-5

Storage: RT
LGK: 10 - 13
Disposal: 3

1. Transition interval ... pH 1.2 - 2.5 (red - yellow)
2. Transition interval ... pH 7.5 - 9.3 (yellow - blue)
Melting point 212°C

Specification:

Assay (photometr.) min. 90 %
λ_{max} 430 - 439 nm
Loss on drying max. 10 %

Order-No.	Quantity
A2478,0001	1 g
A2478,0005	5 g

para-Xylenol blue - Solution

C

Ready-to-use indicator solution in 50 % ethanol

HS-No.: 38220000
EC-No.: 204-736-5

Storage: RT
LGK: 3 A
Disposal: 1

Class / PG: 3/II
UN1993
Warning
H226
P210


Composition:

para-Xylenol blue (A2478) ... 0.1 %

Order-No.	Quantity
A0460,0100	100 ml
A0460,0500	500 ml

Xylenol orange tetrasodium salt for metal titration

C

3',3''-Bis[bis(carboxymethyl)-aminomethyl]cresolsulfonphthalein tetrasodium salt

C₃₁H₂₈N₂Na₄O₁₃S
M = 760.60 g/mol
CAS-No.: 3618-43-7
HS-No.: 29349990
EC-No.: 222-805-8

Storage: RT
LGK: 10 - 13
Disposal: 3

WGK: 3*

Specification:

Appearance of solution complies
Loss on drying max. 7 %
Suitable as indicator complies

Order-No.	Quantity
A4673,0001	1 g
A4673,0005	5 g
A4673,0010	10 g
A4673,0025	25 g

p-Xylenolsulfonephthalein see para-Xylenol blue Page 872
Xylite see Xylitol pure Ph. Eur. Page 873

Xylitol pure Ph. Eur.

C

Xylite

$C_5H_{12}O_5$
 $M = 152.1 \text{ g/mol}$
CAS-No.: 87-99-0
HS-No.: 29054900
EC-No.: 201-788-0

Storage: RT

Specification:

Assay 98.0 - 102.0 %
Appearance of solution complies
Bacterial endotoxins max. 4 IU/g
Conductivity max. 20 µS/cm

Identity complies
Red. sugars complies
Related subst. max. 2 %
Water (K.F) max. 1 %

Ni max. 0.0001 %
Pb max. 0.00005 %

Order-No.	Quantity
A4378,0250	250 g
A4378,1000	1 kg
A4378,10006	6 x 1 kg

D(+)-Xylose BioChemica

B

Melting point 153°C

$C_5H_{10}O_5$
 $M = 150.13 \text{ g/mol}$
CAS-No.: 58-86-6
HS-No.: 29400000
EC-No.: 200-400-7

Storage: RT
LGK: 10 - 13

Specification:

Assay min. 98.5 %
 α 20°C/D; 5 %, H_2O +18° - +20°
Heavy metals max. 0.001 %
Loss on drying max. 1 %

Order-No.	Quantity
A2241,0100	100 g
A2241,0250	250 g
A2241,0500	500 g

Yeast extract

Water-soluble part of autolysed yeast. Rich of ammonia and vitamins, especially of water-soluble vitamin B-complexes; suitable for addition to media.

HS-No.: 38210000
EC-No.: 232-387-9

Storage: RT

Yeast extract Molecular biology grade

B

Specification:

DNases/RNases/Proteases not detectable
Ash max. 14 %
Heavy metals (as Pb) max. 0.0001 %
Loss on drying max. 5 %

Total N 11 - 12 %
pH (1 %; H_2O) 6.8 - 7.2 (25°C)
Coagulated protein not detectable
Sodium chloride max. 0.3 %

Order-No.	Quantity
A3732,0100	100 g
A3732,0250	250 g
A3732,0500	500 g

Yeast extract BioChemica

B

Specification:

Ash max. 15 %
Loss on drying max. 5 %
Total N approx. 11 %
pH (1 %; H_2O ; 25°C) approx. 7.0
Coagulated protein not detectable
Na max. 0.2 %

Order-No.	Quantity
A1552,0100	100 g
A1552,0250	250 g
A1552,0500	500 g
A1552,1000	1 kg
A1552,10006	6 x 1 kg

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
(2) Ausubel, F.A., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. & Struhl, K. (eds.) (1995) *Current Protocols in Molecular Biology*. Greene Publishing & Wiley-Interscience, New York.

Comment: Yeast extract is part of many bacterial growth media (e. g. LB-Medium, TB-Medium, YT-Medium etc.). It is highly hygroscopic and should be stored at a dry place.

Yeast extract Reagent USP

C

Specification:

Coagulated protein complies
Loss on drying (2 h, 105°C) max. 5 %
Microbial counts complies
Nitrogen (Kjeldahl) 7.2 - 9.5 %
Sulfated ash max. 15 %
Chloride (as NaCl) max. 5 %

Order-No.	Quantity
A4283,0100	100 g
A4283,0250	250 g
A4283,0500	500 g
A4283,1000	1 kg
A4283,10006	6 x 1 kg
A4283,5000	5 kg

Yeast Extract Agar

C

Store the prepared medium at 2-8°C.

HS-No.: 38220000

Storage: RT
LGK: 10 - 13

WGK: nwg

Composition:

Agar 15 g/L
Peptones 7 g/L
Yeast extract 3 g/L

Specification:

pH before autoclaving .. approx. 7.2 (20°C)

Order-No.	Quantity
A5922,0500	500 g
A5922,5000	5 kg

Literature: (1) Windle Taylor (1958) *The Examination of Water and Water Supplies*, 7th ed., 394

Comment: This nutrient medium is used for the plate count of organism in water and dairy products.

Direction: Suspend 25 g in 1 L of distilled water and boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Store the prepared medium at 2-8°C.

Yeast extract Broth



C

HS-No.: 38210000

Storage: RT
LGK: 10 - 13

Composition:

Casein peptone 7.0 g/L
Yeast eact 3.0 g/L

Order-No.	Quantity
A7943,0500	500 g
A7943,5000	5 kg

Y-Gal see Rose-Gal BioChemica Page 691

Y-Glucuro see Rose-Glucuro CHA salt BioChemica Page 692

Y-Phos see Rose-Phos p-toluidine salt BioChemica Page 692

YT-Medium - Powder (2X)

B

to set up a 2X concentrated liquid medium

HS-No.: 38210000

Storage: RT

Composition:

Sodium chloride (A1149) ... 5 g/L
Tryptone (A1553) 16 g/L
Yeast extract (A1552) 10 g/L

Order-No.	Quantity
A0981,0100G	100 g
A0981,0500G	500 g
A0981,1000KG	1 kg
A0981,2500KG	2.5 kg
A0981,5000	5 L
A0981,9025	25 L

Literature: (1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.

Comment: The packaging sizes differ in terms of the amount: you can choose between packages in liter (L) or gram (g) and kilogram (kg), respectively. Liter packs dissolved in the corresponding volume will give the correct concentration. When using the gram and kilogram packs, aliquots of the powder have to be dissolved. To prepare one liter of YT-Medium, 31 g of powder are dissolved.

Directions for the preparation of 5 liter (2X) liquid medium: Dissolve the content of the whole 5 L pack in approx. 4500 ml water; adjust the pH with 5 N NaOH to 7.0, and fill up to 5000 ml, aliquot and autoclave. Storage: RT (after autoclaving). Antibiotics and nutritional supplements should be added only after the solution has cooled to 50°C or below, since many of them are heat-sensitive.

Zearalenone BioChemica

B

Toxin F2, FES
from *Fusarium graminearum*
 $C_{18}H_{22}O_5$
 $M = 318.36$ g/mol
CAS-No.: 17924-92-4
HS-No.: 29322985
EC-No.: 241-864-0

Storage: -20°C

Class / PG: 8/III
UN1759
WGK: 1
Danger
H314-H361
P310-P305+P351+P338-P280


Melting point 159 - 163°C

Specification:

Assay approx. 98 %
 λ_{max} (MeOH) 236, 274, 316 nm
Solubility (5 mg/ml MeOH) . . . clear, colorless

Order-No.	Quantity
A7949,0010	10 mg
A7949,0025	25 mg

Zeaxanthine

B

 $C_{40}H_{56}O_2$
 $M = 568.89$ g/mol
CAS-No.: 144-68-3
HS-No.: 32030010
EC-No.: 205-636-4

Storage: -20°C
protected from light

Specification:
 λ_{max} 1 (MeOH) 447 - 503 nm
 λ_{max} 2 (MeOH) 474 - 480 nm
Melting point 204 - 207°C

TLC complies

Order-No.	Quantity
A1282,0001	1 mg
A1282,0005	5 mg

Zeolithe see Molecular sieves Page 548

Z-FG-NHO-Bz see Cathepsin Inhibitor I Page 188

Z-FG-NHO-Bz-ME see Cathepsin Inhibitor II Page 189

Z-FG-NHO-Bz-OME see Cathepsin Inhibitor III Page 189

Z-Gly-Phe-NHO-Bz



B

Cathepsin B,L,S Inhibitor

 $C_{26}H_{25}N_3O_6$
 $M = 475.5$ g/mol
HS-No.: 29241900

Storage: -20°C
protected from light

Solubility soluble in EtOH,
DMSO,
Acetonitrile

Specification:

Assay min. 92 %
Appearance white powder

Order-No.	Quantity
A8711,0001	1 mg
A8711,0005	5 mg

Ziehl-Neelsen - Solution

B

Carbol fuchsine - Solution

HS-No.: 32041300

Storage: RT
LGK: 3 AClass / PG: 3/III
UN1993
WGK: 2
Warning
H312-H226-H332
P280Density (d 20°C/4°C) .. 0.98
Solubility (20°C) soluble (H₂O)**Specification:** λ_{max} 544 - 548 nm
E 0.001 %/1 cm; λ_{max} 0.380 - 0.600Order-No.
A0886,0500
A0886,1000Quantity
500 ml
1 L**Zinc acetate dihydrate**Melting point 237°C
Solubility (20°C) 430 g/l (H₂O)C₄H₆O₄Zn · 2H₂O
M = 219.49 g/mol
CAS-No.: 5970-45-6
HS-No.: 29152900
EC-No.: 209-170-2Storage: RT
LGK: 10-13
Disposal: 15Class / PG: 9/III
UN3077
WGK: 3
Warning
H302-H410
P262-P273**Zinc acetate dihydrate p. A.**

C

Specification:Assay (titr.) min. 99.5 %
pH (5 %; H₂O) 6.0 - 8.0
Chloride max. 0.005 %
Sulfate max. 0.005 %
As max. 0.0003 %Ca max. 0.001 %
Cd max. 0.0005 %
Fe max. 0.001 %
Na max. 0.001 %
Pb max. 0.001 %Order-No.
A4324,0250
A4324,0500
A4324,1000
A4324,10006Quantity
250 g
500 g
1 kg
6 x 1 kg**Zinc acetate dihydrate pure Ph. Eur.**

C

Specification:Assay (titr.) 99.0 - 101.0 %
Appearance of solution complies
Identity complies
Red. substances complies
pH (5 %; H₂O) 5.8 - 7.0Chloride max. 0.005 %
Sulfate max. 0.01 %
Al max. 0.0005 %
As max. 0.0002 %
Cd max. 0.0002 %Cu max. 0.005 %
Fe max. 0.005 %
Pb max. 0.001 %Order-No.
A6831,0500
A6831,1000
A6831,10006
A6831,5000Quantity
500 g
1 kg
6 x 1 kg
5 kg

Zinc carbonate basic see Zinc hydroxide carbonate pure Page 876

Zinc chlorideBoiling point 730° C
Melting point 318°C
Solubility (25°C) 4320 g/L (H₂O)Cl₂Zn
M = 136.28 g/mol
CAS-No.: 7646-85-7
HS-No.: 28273985
EC-No.: 231-595-0Storage: RT
LGK: 8 B
Disposal: 24Class / PG: 8/III
UN2331
WGK: 3
Danger
H335-H314-H410-H302
P280-P273-P301+P330+P331-
P305+P351+P338**Zinc chloride Molecular biology grade**

B

Specification:DNases/RNases/Proteases not detectable
Assay (titr.) min. 98 %
pH (10 %; H₂O) 4.5 - 5.5 (25°C)
Oxychloride max. 1.25 %ZnO max. 0.25 %
Sulfate max. 0.002 %
Ca max. 0.001 %
Fe max. 0.0005 %K max. 0.001 %
Mg max. 0.001 %
Na max. 0.001 %
Pb max. 0.001 %Order-No.
A6285,0100
A6285,0250
A6285,0500Quantity
100 g
250 g
500 g**Comment:** Zinc chloride is watersoluble. During dissolving Zinc chloride in water, some zinc oxidchloride is formed. By adding a small amount of HCl, the precipitate will go into solution.**Zinc chloride p. A.**

C

Specification:Assay (titr.) min. 98 %
pH (10 %; H₂O; 25°C) 4.5 - 5.5
Oxychloride max. 1.25 %
ZnO max. 0.25 %
Sulfate max. 0.002 %
Ca max. 0.001 %
Fe max. 0.0005 %K max. 0.001 %
Mg max. 0.001 %
Na max. 0.001 %
Pb max. 0.001 %Order-No.
A0990,0500
A0990,1000
A0990,10006
A0990,5000
A0990,9010
A0990,9025Quantity
500 g
1 kg
6 x 1 kg
5 kg
10 kg
25 kg**Zinc chloride pure Ph. Eur., USP**

C

Specification:Assay (titr.) 97.0 - 100.5 %
Alkali / alkaline earth max. 1 %
Appearance of solution complies
Identity complies
Organic vol. impurities complies
pH (10 %; H₂O) 4.6 - 5.5
Oxychloride compliesAmmonium max. 0.04 %
Sulfate max. 0.02 %
Al, Ca, Fe, Mg, Heavy metals
..... complies
Pb max. 0.005 %Order-No.
A2076,0500
A2076,1000
A2076,10006
A2076,5000
A2076,9010
A2076,9025Quantity
500 g
1 kg
6 x 1 kg
5 kg
10 kg
25 kg

Zinc chloride Technical grade

Specification:

Assay (titr.) min. 95 %

Order-No.

A4598,5000

A4598,9010

A4598,9025

Quantity

5 kg

10 kg

25 kg

C

Zinc citrate dihydrate pure

C

$C_{12}H_{10}O_{14}Zn_3 \cdot 2H_2O$

$M = 610.37 \text{ g/mol}$

CAS-No.: 5990-32-9

HS-No.: 29181500

EC-No.: 208-901-2

Storage: RT

LGK: 10 - 13

Specification:

Assay min. 98 %

Chloride max. 0.01 %

Sulfate max. 0.01 %

Fe max. 0.005 %

Pb max. 0.001 %

Order-No.

A1793,0500

A1793,1000

A1793,5000

Quantity

500 g

1 kg

5 kg

Zinc hydroxide carbonate pure

C

Zinc carbonate basic

CAS-No.: 5263-02-5

HS-No.: 28369917

EC-No.: 226-076-7

Storage: RT

LGK: 10 - 13

WGK: 1

Melting point ~1970°C

Specification:

Assay (Zn) min. 52 %

Loss on drying max. 3.0 %

Chloride max. 0.1 %

Sulfate max. 0.5 %

Cd max. 0.005 %

Fe max. 0.05 %

Pb max. 0.002 %

Order-No.

A6902,0250

A6902,1000

A6902,5000

Quantity

250 g

1 kg

5 kg

Zinc nitrate hexahydrate pure

C

$Zn(NO_3)_2 \cdot 6H_2O$

$N_2O_6Zn \cdot 6H_2O$

$M = 297.46 \text{ g/mol}$

CAS-No.: 10196-18-6

HS-No.: 28342980

EC-No.: 231-943-8

Storage: RT

LGK: 5.1 B

Class / PG: 5.1/II

UN1514

WGK: 3

Danger

H319-H315-H335-H410-H302-H272

P302+P352-P305+P351+P338-P273



Melting point ~36°C

Solubility (20°C) 1843 g/l (H₂O)

Specification:

Assay (titr.) min. 99 %

Chloride max. 0.005 %

Sulfate max. 0.005 %

Fe max. 0.001 %

Pb max. 0.002 %

Order-No.

A5166,1000

A5166,10006

A5166,5000

A5166,9010

A5166,9025

Quantity

1 kg

6 x 1 kg

5 kg

10 kg

25 kg

Zinc nitrate - Solution 10 % p. A.

C

Density (d 18°C/4°C) ... 1.086

HS-No.: 38220000

Storage: RT

Specification:

Assay min. 10 %

Chloride max. 0.001 %

Sulfate max. 0.01 %

Ca max. 0.001 %

Cu max. 0.0005 %

Fe max. 0.0005 %

Na max. 0.001 %

Pb max. 0.001 %

Order-No.

A3961,1000

A3961,10006

A3961,5000

A3961,9010

Quantity

1 L

6 x 1 L

5 L

10 L

Zinc oxide

ZnO

OZn

$M = 81.37 \text{ g/mol}$

CAS-No.: 1314-13-2

HS-No.: 28170000

EC-No.: 215-222-5

Storage: RT

LGK: 10 - 13

Disposal: 15

Class / PG: 9/III

UN3077

WGK: 2

Warning

H410

P273



Melting point 1970°C

Zinc oxide p. A.

C

Specification:

Assay (titr.) min. 99.5 %

Chloride max. 0.001 %

Sulfate max. 0.01 %

Ca max. 0.001 %

Cu max. 0.0005 %

Fe max. 0.0005 %

Mn max. 0.0005 %

Na max. 0.001 %

Pb max. 0.002 %

Order-No.

A2477,0500

A2477,1000

A2477,10006

A2477,5000

Quantity

500 g

1 kg

6 x 1 kg

5 kg

Zinc oxide pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 100.5 %
Alkaline reacting subst. complies
Carbonate & color of sol. complies
Identity complies
Iron and other heavy metals complies
Loss on ignition max. 1.0 %
As max. 0.0005 %

Cd max. 0.001 %
Fe max. 0.02 %
Pb max. 0.005 %

Order-No.

A0464,0500
A0464,1000
A0464,10006
A0464,5000
A0464,9010
A0464,9025

Quantity

500 g
1 kg
6 x 1 kg
5 kg
10 kg
25 kg

Zinc stearate

$C_{36}H_{70}O_4Zn$
 $M = 632.33 \text{ g/mol}$
CAS-No.: 557-05-1
HS-No.: 29157000
EC-No.: 209-151-9

Storage: RT
LGK: 10 - 13

WGK: nwg

Zinc stearate pure Ph. Eur.

C

Specification:

Assay (as Zn, titr.) 10.0 - 12.0 %
Acid value of fatty acids 195 - 210
Acidic/alkaline react. subst. complies
Appearance of fatty acid sol. complies
Appearance of solution complies

Identity complies
Chloride max. 0.025 %
Sulfate max. 0.6 %
Cd max. 0.0005 %
Pb max. 0.0025 %

Order-No.

A4691,0500
A4691,1000
A4691,5000
A4691,9010
A4691,9025

Quantity

500 g
1 kg
5 kg
10 kg
25 kg

Zinc stearate pure

C

Specification:

Assay (as Zn, complexom.) 10.5 - 11.3 %
Loss on drying max. 0.5 %
Melting point 118 - 122° C
Chloride max. 0.025 %

Order-No.

A3264,0500
A3264,1000
A3264,5000
A3264,9010
A3264,9025

Quantity

500 g
1 kg
5 kg
10 kg
25 kg

Zinc sulfate heptahydrate

$ZnSO_4 \cdot 7H_2O$

$O_4SZn \cdot 7H_2O$
 $M = 287.54 \text{ g/mol}$
CAS-No.: 7446-20-0
HS-No.: 28332920
EC-No.: 231-793-3

Storage: RT
LGK: 10 - 13
Disposal: 15

Class / PG: 9/III
UN3077
WGK: 3
Danger
H302-H410-H318
P301+P330+P331-P273-P280-
P305+P351+P338



Melting point 40°C
Solubility (20°C) 960 g/L (H_2O)

Zinc sulfate heptahydrate p. A.

C

Specification:

Assay (titr.) min. 99.5 %
pH (5 %; H_2O ; 20°C) 4.4 - 6.0
Chloride max. 0.0005 %
As max. 0.0001 %
Ca max. 0.001 %
Cu max. 0.0005 %
Fe max. 0.0005 %

Pb max. 0.0005 %

Order-No.

A1050,0500
A1050,1000
A1050,10006
A1050,5000
A1050,9010
A1050,9025

Quantity

500 g
1 kg
6 x 1 kg
5 kg
10 kg
25 kg

Zinc sulfate heptahydrate pure Ph. Eur., USP

C

Specification:

Assay (titr.) 99.0 - 104.0 %
Acidity complies
Alkali / alkaline earth max. 0.9 %
Appearance of solution complies
Identity complies
pH (5 %; H_2O ; 20°C) 4.4 - 5.6

Chloride max. 0.03 %
As max. 0.0014 %
Fe max. 0.01 %
Pb max. 0.002 %

Order-No.

A1000,1000
A1000,10006
A1000,5000
A1000,9010
A1000,9025

Quantity

1 kg
6 x 1 kg
5 kg
10 kg
25 kg

Zinc sulfate - Standard volumetric solutions

HS-No.: 38220000
EC-No.: 231-793-3

Storage: RT
LGK: 10 - 13
Disposal: 28

WGK: nwg

Zinc sulfate - Standard volumetric solution (0.1 M)

0.1 mol/L (0.1 N Solution)

Warning
H319-H411
P305+P351+P338-P280-P273



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A1506,1000	1 L
A1506,10006	6 x 1 L
A1506,5000	5 L

Zinc sulfate - Standard volumetric solution (0.05 M)

0.05 mol/L (0.05 N Solution)

Warning
H412-H319
P305+P351+P338-P273-P280



C

Specification:

Factor limits 0.998 - 1.002

Order-No.	Quantity
A3546,1000	1 L
A3546,10006	6 x 1 L
A3546,5000	5 L

ZnCl₂ see Zinc chloride Page 875
Zn(NO₃)₂ · 6H₂O see Zinc nitrate hexahydrate pure Page 876
ZnO see Zinc oxide Page 876
ZnSO₄ · 7H₂O see Zinc sulfate heptahydrate Page 877
Z-Phe-Gly-NHO-Bz see Cathepsin Inhibitor I Page 188
Z-Phe-Gly-NHO-Bz-p-CH₃ see Cathepsin Inhibitor II Page 189
Z-Phe-Gly-NHO-Bz-p-OCH₃ see Cathepsin Inhibitor III Page 189
Z-Val-Phe-al see Calpain Inhibitor III Page 183
Zwittergent 3-12 see Sulfo betaine SB 12 Page 778
Zygomycin see Paromomycin sulfate BioChemica Page 592
Zygosporin A see Cytochalasins Page 257



Cell Culture Powder Media

B

HS-No.: 38220000

Storage: 2-8°C
LGK: 10 - 13

S: 24/25
hygroscopic

Comment: Composition

Powder media from AppliChem are mixed and processed according to the original formulations. To produce these media only raw materials of high quality are used. The single raw material that is used in the media production is taken only from one lot, which is dried according to instructions. Shortly, after drying the raw materials, they will be grinded in special mills to get a homogenous fine powder, that is packed immediately. Due to that the customer can easily dissolve our media. You will receive a weighing protocol on request.

HEPES-buffered media

HEPES-buffered media are often used, whenever the pH-value has to be stable in the media. With the addition of HEPES the pH value will get an additional stability in the pH range 7.2 to 7.6 for pH-sensitive cell culture systems. Deviations of the pH value in the media are caused by the metabolism of the cultivated cells but also by changes of the CO₂ concentration during incubation.

Storage

All powder media are produced without sodium hydrogen carbonate to increase the stability. Keeping them tightly closed is absolutely necessary as they are very hygroscopic. For this reason one package of powder media should always be dissolved completely. Storing dry and cold (+4 to +8°C) will increase the shelf life, which is normally two years. Generally the time for delivery will be one week.

Customer formulations

As a special service AppliChem offers the production of powder media according to the customer formulation for competitive prices - even in smaller quantities. In our laboratories we are able to consider most wishes regarding the composition of the powder media. The minimum order size is 20 liters with a delivery-date of two to three weeks, generally. Please ask for our offer for your formulation giving us the exact composition and the quantity you need.

Literature

BME:	Eagle, H. (1965) <i>Proc. Soc. Exp. Biol. Med.</i> 89 , 362
DMEM:	Dulbecco, R. & Freeman, G. (1959) <i>Virology</i> 8 , 396
	Smith <i>et al.</i> (1960) <i>Virology</i> 12 , 185
DMEM/F12:	Dulbecco, R. & Freeman, G. (1959) <i>Virology</i> 8 , 396
	Smith <i>et al.</i> (1960) <i>Virology</i> 12 , 185
	Barnes, D. & Sato, G. (1980) <i>Anal. Biochem.</i> 102 , 255
Earle's buffered salt mixture:	Earle, W. (1943) <i>J. Nat. Cancer Inst.</i> 4 , 165
Gamborg's B5 - Plant salts:	Gamborg O.L., Miller R.A., OjimaK. (1968) <i>Exp. Cell Res.</i> 50 , 151
Glasgow - MEM (BHK 21):	MacPherson, I. & Stoker, M. (1961) <i>Virology</i> 16 , 147
Grace's - Insect medium:	Grace, T.D.C. (1962) <i>Nature</i> 195 , 788
	Grace, T.D.C. (1962) <i>Nature</i> 216 , 613
	Grace, T.D.C. (1966) <i>Nature</i> 211 , 366
Ham's F10 - Medium:	Ham, R.G. (1963) <i>Exp. Cell Res.</i> 29 , 515
Ham's F12K - Medium:	Kaighn, M.E., (1973) <i>Tissue Culture Methods and Applications</i> , 54 (eds. Kruse & Patterson)
Ham's F12 - Medium:	Ham, R.G. (1965) <i>Proc. Nat. Acad. Sci USA</i> 53 , 288
Hanks' buffered salt mixture:	Hanks', J.H. & Wallace, R.E. (1949) <i>Proc. Soc. Exp. Biol. Med.</i> 71 , 196.
Iscove's mod. Dulbecco's MEM (IMDM):	Iscove, N., N. & Melchers, F. (1978) <i>J. Exp. Med.</i> 147 , 926
	Iscove, N., N. <i>et al.</i> (1980) <i>Exp. Cell Res.</i> 126 , 121
IPL-41 - Medium:	Weiss, S.A., G.C. Smith, S.S. Kalter & J.L. Vaughn. (1981) <i>In Vitro</i> 17 , 495.
Joklik - MEM:	Eagle, H. (1959) <i>Science</i> 130 , 432
Leibovitz's L15 - Medium:	Leibovitz, A. (1963) <i>Amer. J. Hyg.</i> 78 , 173
Linsmaier, Bednar & Skoog - Plant salts:	Linsmaier E.M. & Skoog F. (1965) <i>Physiol. Plantarum</i> 18 , 100
McCoy's 5A - Medium (modified):	McCoy, T.A. <i>et al.</i> (1959) <i>Proc. Soc. Exp. Biol. Med.</i> 100 , 115
	Hsu, T.C. & Kellogg, D.S. (1960) <i>J. Nat. Cancer Inst.</i> 25 , 221
	Iwakata, S. & Grace, J.T. (1964) <i>N.Y. J. Med.</i> 64 , 2279
Medium 199:	Morgan, J.F. <i>et al.</i> (1950) <i>Proc. Soc. Exp. Biol. Med.</i> 73 , 1
	Morgan, J.F. <i>et al.</i> (1955) <i>J. Nat. Cancer Inst.</i> 16 , 557
α-MEM:	Stanners, C.P. <i>et al.</i> (1971) <i>Nature New Biology</i> 230 , 52
	Stanners, C.P. & Goldberg, V.J. (1975) <i>J. Gen. Virol.</i> 29 , 281
MEM:	Eagle, H. (1955) <i>Science</i> 122 , 501
	Eagle, H. (1959) <i>Science</i> 130 , 432
	Eagle, H. (1959) <i>Science</i> 130 , 432
S-MEM:	
Murashige & Skoog - Plant medium:	Murashige, T. & Skoog, F. (1962) <i>Physiol. Plant.</i> 15 , 473
NCTC 135 - Medium:	Evans, V.J. <i>et al.</i> (1964) <i>Exp. Cell Res.</i> 36 , 439
PBS - Powder:	Dulbecco, R. & Vogt, M. (1957) <i>J. Exp. Med.</i> 106 , 167
RPML 1640 - Medium:	Moore, G.E. <i>et al.</i> (1967) <i>J.A.M.A.</i> 199 , 519
Schneider's Drosophila - Insect medium:	Schneider, I. & Blumenthal, A. (1978) <i>Biology and Genetics of Drosophila</i> vol. 2A, Acad. Press, N.Y. pp. 266.
TC-100 - Insect medium:	Gardiner, G.R. & H. Stockdale (1975) <i>J. Invert. Pathol.</i> 25 , 363
TNM-FH - Insect medium:	Hink, W.F. (1970) <i>Nature</i> 266 , 466
	Hink, W.F. <i>et al.</i> (1974) <i>In Vitro</i> 9 , 371
Waymouth's MB 752/1 - Medium:	Waymouth, C. (1959) <i>J. Nat. Cancer Inst.</i> 22 , 1003
William's Medium E:	Williams, G.M. <i>et al.</i> (1971) <i>Exp. Cell Res.</i> 69 , 106
	Williams, G.M. & Gunn, J.M. (1974) <i>Exp. Cell Res.</i> 89 , 139

Instructions for dissolving the powder to prepare liquid media

Powdered media and salts are very hygroscopic and have to be stored under dry conditions. After opening one package you should dissolve the whole content at once. We recommend to produce 1X liquid medium from the powdered form, as the different amino acids may precipitate because of their low solubility. They are able to form salts which are of low solubility in concentrated solutions. If you have to add supplements to your medium, you can add them before filtration (unsterile) or after filtration (sterile). For dissolving the powdered medium please use bidistilled or deionized, pyrogen-free water.

Procedure

- The required quantity of powdered medium will be completely dissolved under stirring in approx. 90 % of the water quantity. The temperature of the water should be between +15 and +30°C. The powder which remains in the package should be flushed out and dissolved with water.
- If the powder is completely dissolved, add the sodium hydrogen carbonate and dissolve it completely as well. The required quantities are listed in the table on the following pages.
- The pH (physiological optimum is pH 6.8 - 7.2) has to be adjusted with 1 N HCl or 1 N NaOH while stirring. The pH should be approx. 0.2 units lower than the target pH, because the pH will raise up a bit during filtration when the CO₂ will leak out.
- After adjusting the pH you have to add water up to the desired volume and mix it very well and filter immediately.
- Store the medium at +4°C protected from light.



**Don't
waste
your
money.**

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Table for the addition of sodium hydrogen carbonate

Description	Article-No.	NaHCO ₃ (g / L)
BME, Basal medium with Earle's salts	A1310	2.200
BME, Basal medium with Earle's salts	A1311	2.200
10X BME, Basal medium with Earle's salts	A1977	2.200 / L 1X
10X BME, Basal medium with Earle's salts	A1983	2.200 / L 1X
BME, Basal medium with Earle's salts, with HEPES	A1915	2.200
BME, Basal medium with Earle's salts, with HEPES	A1916	2.200
BME, Basal medium with Earle's (diploide)	A1984	2.200
BME, Basal medium with Earle's (diploide)	A1312	2.200
BME, Basal medium with Hanks' salts	A1917	0.350
BME, Basal medium with Hanks' salts	A1313	0.350
10X BME, Basal medium with Hanks' salts	A1990	0.350 / L 1X
10X BME, Basal medium with Hanks' salts	A1988	0.350 / L 1X
BME, Basal medium with Hanks' salts; autoclavable	A1976	30 ml 7.5 % - Solution / L after autoclaving
BME, Basal medium with Hanks' salts; autoclavable	A1978	5 ml 7.5 % - Solution / L after autoclaving
BME, Basal medium with Hanks' salts, with HEPES	A1918	0.350
BME, Basal medium with Hanks' salts, with HEPES	A1919	0.350
DMEM - Medium	A1924	3.700
DMEM - Medium	A1314	3.700
DMEM - Medium with HEPES	A1925	0.850
DMEM - Medium with HEPES	A1315	0.850
DMEM - Medium	A1926	3.700
DMEM - Medium	A1316	3.700
DMEM - Medium	A1985	3.700
DMEM - Medium	A1986	3.700
DMEM - Medium with HEPES	A1950	0.850
DMEM - Medium with HEPES	A1965	0.850
DMEM - Medium with HEPES	A1979	0.850
DMEM - Medium with HEPES	A1951	0.850
DMEM - Medium	A0826	3.700
DMEM - Medium	A3134	3.700
DMEM - Medium	A3137	3.700
DMEM - Medium	A3139	3.700
DMEM/F12 (1:1) - Medium	A1920	1.200
DMEM/F12 (1:1) - Medium	A1318	1.200
DMEM/F12 (1:1) - Medium with 15 mM HEPES	A1922	1.200
DMEM/F12 (1:1) - Medium with 15 mM HEPES	A1317	1.200
DMEM/F12 (1:1) - Medium with 25 mM HEPES	A1923	1.200
DMEM/F12 (1:1) - Medium with 25 mM HEPES	A1921	1.200
Earle's balanced salts	A1712	2.200
Earle's balanced salts	A2039	2.200
Earle's balanced salts	A3026	2.200
Earle's balanced salts	A3127	2.200
Gamborg's B5 - Plant salts	A1911	none
Glasgow - MEM (BHK 21)	A2024	2.750
Glasgow - MEM (BHK 21)	A1320	2.750
Glasgow - MEM (BHK 21)	A2025	2.750
Glasgow - MEM (BHK 21)	A1321	2.750
Grace's - Insect medium	A2023	0.350
Grace's - Insect medium	A1529	0.350
Ham's F10 - Medium	A1970	1.200
Ham's F10 - Medium	A1525	1.200
Ham's F10 - Medium with HEPES	A1989	1.200
Ham's F10 - Medium with HEPES	A1982	1.200
Ham's F10 - Medium with HEPES	A1952	1.200
Ham's F10 - Medium with HEPES	A2026	1.200
Ham's F12K - Medium	A1963	2.500
Ham's F12K - Medium	A1927	2.500
Ham's F12 - Medium	A1948	1.176
Ham's F12 - Medium	A1526	1.176
Ham's F12 - Medium with HEPES	A1969	1.176
Ham's F12 - Medium with HEPES	A1953	1.176
Ham's F12K - Medium	A1963	2.500
Ham's F12K - Medium	A1927	2.500
Hanks' balanced salts	A1711	0.350
Hanks' balanced salts	A3140	0.350

Table for the addition of sodium hydrogen carbonate

Description	Article-No.	NaHCO ₃ (g / L)
Hanks' balanced salts	A2729	0.350
Hanks' balanced salts	A2512	0.350
HEPES balanced salts	A0629	none
Iscove's mod. Dulbecco's - Medium (IMDM)	A2028	3.700
Iscove's mod. Dulbecco's - Medium (IMDM)	A1909	3.700
Iscove's mod. Dulbecco's - Medium (IMDM)	A2029	3.024
Iscove's mod. Dulbecco's - Medium (IMDM)	A1322	3.024
IPL 41 - Medium	A2027	0.350
IPL 41 - Medium	A1964	0.350
Joklik - MEM, modified for spinner culture	A1974	2.000
Joklik - MEM, modified for spinner culture	A1539	2.000
Leibovitz's L-15 - Medium	A1967	none
Leibovitz's L-15 - Medium	A1323	none
Leibovitz's L-15 - Medium with HEPES	A1968	none
Leibovitz's L-15 - Medium with HEPES	A1954	none
Linsmaier, Bednar & Skoog Plant salts	A0591	none
McCoy's 5A - Medium (modified)	A2034	2.200
McCoy's 5A - Medium (modified)	A1324	2.200
McCoy's 5A - Medium (modified)	A2035	2.200
McCoy's 5A - Medium (modified)	A1955	2.200
Medium 199 with Earle's salts	A2022	2.200
Medium 199 with Earle's salts	A1325	2.200
Medium 199 with Earle's salts, with HEPES	A2030	0.850
Medium 199 with Earle's salts, with HEPES	A1326	0.850
Medium 199 with Hanks' salts	A2031	0.350
Medium 199 with Hanks' salts	A1327	0.350
Medium 199 with Hanks' salts, with HEPES	A2021	0.350
Medium 199 with Hanks' salts, with HEPES	A1328	0.350
α - MEM	A1971	2.200
α - MEM	A1330	2.200
α - MEM	A1913	2.200
α - MEM	A1329	2.200
α - MEM with HEPES	A1980	0.850
α - MEM with HEPES	A1972	0.850
α - MEM with HEPES	A1949	0.850
α - MEM with HEPES	A1914	0.850
MEM with Earle's salts	A1331	2.200
MEM with Earle's salts	A1332	2.200
MEM with Earle's salts	A2018	2.200
MEM with Earle's salts	A1334	2.200
MEM with Earle's salts, with HEPES	A2019	0.850
MEM with Earle's salts, with HEPES	A1333	0.850
MEM with Earle's salts, with HEPES	A2032	0.850
MEM with Earle's salts, with HEPES	A1956	0.850
MEM with Earle's salts; autoclavable	A2597	30 ml 7.5 % - Solution / L after autoclaving
MEM with Hanks' salts	A1957	0.350
MEM with Hanks' salts	A1335	0.350
MEM with Hanks' salts	A2041	0.350
MEM with Hanks' salts	A1337	0.350
MEM with Hanks' salts, with HEPES	A2042	0.350
MEM with Hanks' salts, with HEPES	A1336	0.350
MEM with Hanks' salts, with HEPES	A2043	0.350
MEM with Hanks' salts, with HEPES	A1958	0.350
S-MEM, modified for spinner culture	A1338	2.200
S-MEM, modified for spinner culture	A1308	2.200
S-MEM, modified for spinner culture; autoclavable	A1975	30 ml 7.5 % - Solution / L after autoclaving
Murashige & Skoog - Plant salts	A1534	none
Murashige & Skoog - Plant salts	A1535	none
NCTC 135 - Medium	A2020	2.200
NCTC 135 - Medium	A1528	2.200
PBS buffer (1X, Dulbecco) - Powder	A0964	none
PBS buffer (10X, Dulbecco) - Powder	A0965	none
PBS buffer (1X, Dulbecco) - Powder	A1908	none
RPMI 1640	A1959	2.200
RPMI 1640	A1339	2.200

Table for the addition of sodium hydrogen carbonate

Description	Article-No.	NaHCO ₃ (g / L)
RPMI 1640 with HEPES	A1960	0.850
RPMI 1640 with HEPES	A1538	0.850
RPMI 1640	A2040	2.000
RPMI 1640	A3135	2.000
Click-RPMI	A2044	1.175
Click-RPMI	A2504	1.175
Schneider's Drosophila - Insect medium	A2036	0.400
Schneider's Drosophila - Insect medium	A1533	0.400
TC-100 - Medium	A2033	0.350
TC-100 - Medium	A2017	0.350
TNM-FH - Insect medium	A2037	0.350
TNM-FH - Insect medium	A1570	0.350
Tris - Citrate balanced salts	A0692	none
Waymouth's MB 752/1 - Medium	A1973	2.240
Waymouth's MB 752/1 - Medium	A1527	2.240
Waymouth's MB 752/1 - Medium with 20 mM HEPES	A1981	0.850
Waymouth's MB 752/1 - Medium with 20 mM HEPES	A1961	0.850
William's Medium E	A1309	2.200
William's Medium E	A1910	2.200
William's Medium E with HEPES	A1966	0.850
William's Medium E with HEPES	A1962	0.850
William's Medium E	A3029	2.200
William's Medium E	A3136	2.200

BME, Basal medium with Earle's salts										
	Components	A1310	A1311	A1977	A1983	A1915	A1916	A1984	A1312	A1976 autoclavable
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	2649.20	2649.20	264.92	264.92	264.92	264.92	264.92
	Magnesium chloride anhydrous							93.68	93.68	
	Magnesium sulfate dried	139.52	139.52	1395.20	1395.20	139.52	139.52			139.52
	Potassium chloride	400.00	400.00	4000.00	4000.00	400.00	400.00	400.00	400.00	400.00
	Sodium chloride	6800.00	6800.00	68000.00	68000.00	6300.00	6300.00	6800.00	6800.00	6800.00
	Sodium dihydrogen phosphate x H ₂ O	140.00	140.00	1400.00	1400.00	140.00	140.00	140.00	140.00	140.00
Other Components	D-(+)-Glucose anhydrous	1000.00	1000.00	10000.00	10000.00	1000.00	1000.00	1000.00	1000.00	1000.00
	HEPES					5958.00	5958.00			
	Phenol red	10.00	10.00	100.00	100.00	10.00	10.00	10.00	10.00	6.00
	Succinic acid									75.00
	Succinic acid sodium salt									100.00
Amino acids	L-Arginine x HCl	21.00	21.00	210.00	210.00	21.00	21.00	21.00	21.00	21.00
	L-Cystine	12.00	12.00	120.00	120.00	12.00	12.00	12.00	12.00	12.00
	L-Glutamine	0	292.00	0	2920.00	0	292.00	0	292.00	0
	L-Histidine Base	8.00	8.00	80.00	80.00	8.00	8.00	8.00	8.00	
	L-Histidine x HCl x H ₂ O							10.81	10.81	15.00
	L-Isoleucine	26.00	26.00	260.00	260.00	26.00	26.00	26.00	26.00	26.00
	L-Leucine	26.00	26.00	260.00	260.00	26.00	26.00	26.00	26.00	26.00
	L-Lysine x HCl	36.47	36.47	364.70	364.70	36.47	36.47	36.47	36.47	36.47
	L-Methionine	7.50	7.50	75.00	75.00	7.50	7.50	7.50	7.50	7.50
	L-Phenylalanine	16.50	16.50	165.00	165.00	16.50	16.50	16.50	16.50	16.50
	L-Threonine	24.00	24.00	240.00	240.00	24.00	24.00	24.00	24.00	24.00
	L-Tryptophan	4.00	4.00	40.00	40.00	4.00	4.00	4.00	4.00	4.00
	L-Tyrosine	18.00	18.00	180.00	180.00	18.00	18.00	18.00	18.00	18.00
	L-Valine	23.50	23.50	235.00	235.00	23.50	23.50	23.50	23.50	23.50
Vitamins	D-(+)-Biotin	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	1.00
	D-Calcium pantothenate	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	1.00
	Choline bitartrate									1.80
	Choline chloride	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	
	Folic acid	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	20.00	20.00	2.00	2.00	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	1.00
	Riboflavin	0.10	0.10	1.00	1.00	0.10	0.10	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	10.00	10.00	1.00	1.00	1.00	1.00	1.00
	Weight (g / L)	8.99	9.28	89.87	92.79	14.44	14.74	8.95	9.24	9.17

BME, Basal medium with Hanks' salts								
	Components	A1917	A1313	A1990	A1988	A1918	A1919	A1978 autoclavable
Inorganic salts	Calcium chloride x 2H ₂ O	185.44	185.44	1854.44	1854.44	185.44	185.44	185.44
	Magnesium sulfate dried	139.52	139.52	1395.20	1395.20	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	4000.00	4000.00	400.00	400.00	400.00
	Potassium dihydrogen phosphate anhydrous	60.00	60.00	600.00	600.00	60.00	60.00	60.00
	Sodium chloride	8000.00	8000.00	80000.00	80000.00	7500.00	7500.00	8000.00
	di-Sodium hydrogen phosphate	47.88	47.88	478.80	478.80	47.88	47.88	47.88
Other Components	D-(+)-Glucose anhydrous	1000.00	1000.00	10000.00	10000.00	1000.00	1000.00	1000.00
	HEPES					5958.00	5958.00	
	Phenol red	10.00	10.00	100.00	100.00	10.00	10.00	6.00
	Succinic acid							75.00
	Succinic acid sodium salt							100.00
Amino acids	L-Arginine x HCl	21.00	21.00	210.00	210.00	21.00	21.00	21.00
	L-Cystine	12.00	12.00	120.00	120.00	12.00	12.00	12.00
	L-Glutamine	0	292.00	0	2920.00	0	292.00	0
	L-Histidine Base	8.00	8.00	80.00	80.00	8.00	8.00	
	L-Histidine x HCl x H ₂ O							15.00
	L-Isoleucine	26.00	26.00	260.00	260.00	26.00	26.00	26.00
	L-Leucine	26.00	26.00	260.00	260.00	26.00	26.00	26.00
	L-Lysine x HCl	36.47	36.47	364.70	364.70	36.47	36.47	36.47
	L-Methionine	7.50	7.50	75.00	75.00	7.50	7.50	7.50
	L-Phenylalanine	16.50	16.50	165.00	165.00	16.50	16.50	16.50
	L-Threonine	24.00	24.00	240.00	240.00	24.00	24.00	24.00
	L-Tryptophan	4.00	4.00	40.00	40.00	4.00	4.00	4.00
	L-Tyrosine	18.00	18.00	180.00	180.00	18.00	18.00	18.00
	L-Valine	23.50	23.50	235.00	235.00	23.50	23.50	23.50
Vitamins	D-(+)-Biotin	1.00	1.00	10.00	10.00	1.00	1.00	1.00
	D-Calcium pantothenate	1.00	1.00	10.00	10.00	1.00	1.00	1.00
	Choline bitartrate							1.80
	Choline chloride	1.00	1.00	10.00	10.00	1.00	1.00	
	Folic acid	1.00	1.00	10.00	10.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	20.00	20.00	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	10.00	10.00	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	10.00	10.00	1.00	1.00	1.00
	Riboflavin	0.10	0.10	1.00	1.00	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	10.00	10.00	1.00	1.00	1.00
	Weight (g / L)	10.07	10.37	100.75	103.67	15.53	15.82	10.25

DMEM - Media

	Components	A1924	A1314	A1925	A1315	A0826	A1926	A1316	A1985	A1986	A1950	A1965	A1979	A1951	A3134	A3137	A3139
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92
	Iron(III)-nitrate x 9H ₂ O	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Magnesium sulfate dried	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57	139.57
	Potassium chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Sodium chloride	6400.-00	6400.-00	5900.-00	5900.-00	6400.-00	6400.-00	6400.-00	6400.-00	6400.-00	5400.-00	5400.-00	5400.-00	5400.-00	6400.-00	6400.-00	6400.-00
	Sodium dihydrogen phosphate x H ₂ O	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00
Other Components	D(+)-Glucose anhydrous	1000.-00	1000.-00	1000.-00	1000.-00	1000.-00	4500.-00	4500.-00	4500.-00	4500.-00	4500.-00	4500.-00	4500.-00	4500.-00	1000.-00	4500.-00	4500.-00
	HEPES			5958.-00	5958.-00	0					5958.-00	5958.-00	5958.-00	5958.-00			
	Phenol red	15.00	15.00	15.00	15.00		15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00			
	Sodium pyruvate	110.00	110.00	110.00	110.00	110.00			110.00	110.00				110.00	110.00	110.00	110.00
Amino acids	L-Arginine x HCl	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00
	L-Cystine	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00
	L-Glutamine	0	584.00	0	584.00	0	0	584.00	0	584.00	0	584.00	0	584.00	584.00	0	584.00
	Glycine	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
	L-Histidine x HCl x H ₂ O	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00
	L-Isoleucine	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00
	L-Leucine	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00
	L-Lysine x HCl	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00
	L-Methionine	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
	L-Phenylalanine	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00	66.00
	L-Serine	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00
	L-Threonine	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00
	L-Tryptophan	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	L-Tyrosine	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00
	L-Valine	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00	94.00
Vitamins	D-Calcium pantothenate	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Choline chloride	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Folic acid	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	myo-Inositol	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
	Nicotinamide	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Pyridoxal x HCl	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Riboflavin	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	Thiamine x HCl	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Weight (g / L)	9.46	10.05	14.92	15.50	9.45	12.85	13.44	12.96	13.55	17.81	18.39	17.92	18.50	10.03	12.95	13.53

DMEM / F12 - Media							
	Components	A1920	A1318	A1922	A1317	A1923	A1921
Inorganic salts	Calcium chloride x 2H ₂ O	154.45	154.45	154.45	154.45	154.45	154.45
	Copper(II)-sulfate x 5H ₂ O	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013
	Iron(II)-sulfate x 7H ₂ O	0.417	0.417	0.417	0.417	0.417	0.417
	Iron(III)-nitrate x 9H ₂ O	0.05	0.05	0.05	0.05	0.05	0.05
	Magnesium chloride x 6H ₂ O	61.00	61.00	61.00	61.00	61.00	61.00
	Magnesium sulfate dried	69.76	69.76	69.76	69.76	69.76	69.76
	Potassium chloride	311.80	311.80	311.80	311.80	311.80	311.80
	Sodium chloride	6999.50	6999.50	6999.50	6999.50	6999.50	6999.50
	Sodium dihydrogen phosphate x H ₂ O	62.50	62.50	62.50	62.50	62.50	62.50
	di-Sodium hydrogen phosphate anhydrous	71.02	71.02	71.02	71.02	71.02	71.02
Other Components	Zinc sulfate x 7H ₂ O	0.432	0.432	0.432	0.432	0.432	0.432
	D(+)-Glucose anhydrous	3151.00	3151.00	3151.00	3151.00	3151.00	3151.00
	HEPES			3574.50	3574.50	5958.00	5958.00
	Hypoxanthine	2.10	2.10	2.10	2.10	2.10	2.10
	Linoleic acid	0.042	0.042	0.042	0.042	0.042	0.042
	DL- α -Lipoic acid	0.105	0.105	0.105	0.105	0.105	0.105
	Phenol red	8.10	8.10	8.10	8.10	8.10	8.10
	Putrescine x 2HCl	0.081	0.081	0.081	0.081	0.081	0.081
	Sodium pyruvate	55.00	55.00	55.00	55.00	55.00	55.00
Amino acids	L-Alanine	4.45	4.45	4.45	4.45	4.45	4.45
	L-Arginine x HCl	147.50	147.50	147.50	147.50	147.50	147.50
	L-Asparagine x H ₂ O	7.50	7.50	7.50	7.50	7.50	7.50
	L-Aspartic acid	6.65	6.65	6.65	6.65	6.65	6.65
	L-Cysteine x HCl x H ₂ O	17.56	17.56	17.56	17.56	17.56	17.56
	L-Cystine	24.00	24.00	24.00	24.00	24.00	24.00
	L-Glutamic acid anhydrous	7.35	7.35	7.35	7.35	7.35	7.35
	L-Glutamine	0	365.00	0	365.00	0	365.00
	Glycine	18.75	18.75	18.75	18.75	18.75	18.75
	L-Histidine x HCl x H ₂ O	31.48	31.48	31.48	31.48	31.48	31.48
	L-Isoleucine	54.47	54.47	54.47	54.47	54.47	54.47
	L-Leucine	59.05	59.05	59.05	59.05	59.05	59.05
	L-Lysine x HCl	91.25	91.25	91.25	91.25	91.25	91.25
	L-Methionine	17.24	17.24	17.24	17.24	17.24	17.24
	L-Phenylalanine	35.48	35.48	35.48	35.48	35.48	35.48
	L-Proline	17.25	17.25	17.25	17.25	17.25	17.25
	L-Serine	26.25	26.25	26.25	26.25	26.25	26.25
	L-Threonine	53.45	53.45	53.45	53.45	53.45	53.45
	L-Tryptophan	9.02	9.02	9.02	9.02	9.02	9.02
	L-Tyrosine	38.70	38.70	38.70	38.70	38.70	38.70
	L-Valine	52.85	52.85	52.85	52.85	52.85	52.85
Vitamins	D(+)-Biotin	0.0035	0.0035	0.0035	0.0035	0.0035	0.0035
	D-Calcium pantothenate	2.24	2.24	2.24	2.24	2.24	2.24
	Choline chloride	8.98	8.98	8.98	8.98	8.98	8.98
	2'-Deoxythymidine	0.365	0.365	0.365	0.365	0.365	0.365
	Folic acid	2.65	2.65	2.65	2.65	2.65	2.65
	myo-Inositol	12.60	12.60	12.60	12.60	12.60	12.60
	Nicotinamide	2.02	2.02	2.02	2.02	2.02	2.02
	Pyridoxal x HCl	2.00	2.00	2.00	2.00	2.00	2.00
	Pyridoxine HCl	0.031	0.031	0.031	0.031	0.031	0.031
	Riboflavin	0.219	0.219	0.219	0.219	0.219	0.219
	Thiamine x HCl	2.17	2.17	2.17	2.17	2.17	2.17
	Vitamin B ₁₂	0.68	0.68	0.68	0.68	0.68	0.68
	Weight (g / L)	11.70	12.07	15.28	15.64	17.66	18.02

Earle's balanced salts

	Components	A1712	A2039	A3026	A3127
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92		
	Magnesium sulfate dried	139.57	139.57		
	Potassium chloride	400.00	400.00	400.00	400.00
	Sodium chloride	6800.00	6800.00	6800.00	6800.00
	Sodium dihydrogen phosphate x H ₂ O	140.00	140.00	140.00	140.00
Other Components	D(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00
	Phenol red	10.00		10.00	
	Weight (g / L)	8.75	8.74	8.35	8.34

Gamborg's B5 Plant salts

	Components	A1911
Inorganic salts	Ammonium sulfate	134.00
	Boric acid	3.00
	Calcium chloride x 2H ₂ O	149.98
	Cobalt(II)-chloride x 6H ₂ O	0.025
	Copper(II)-sulfate x 5H ₂ O	0.025
	Iron(II)-sulfate x 7H ₂ O	27.80
	Magnesium sulfate dried	172.11
	Manganese(II)-sulfate x H ₂ O	10.00
	Potassium iodide	0.75
	Potassium nitrate	2500.00
	Sodium dihydrogen phosphate x H ₂ O	150.00
	Sodium molybdate x 2H ₂ O	0.25
	Zinc sulfate x 7H ₂ O	2.00
Vitamins	D-Calcium pantothenate	0.874
	myo-Inositol	100.00
	Nicotinamide	1.00
	Pyridoxal x HCl	1.00
	Riboflavin	0.015
	Thiamine x HCl	10.00
	Weight (g / L)	3.26

Glasgow - MEM (BHK 21)

	Components	A2024	A1320	A2025	A1321
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	238.43	238.43
	Iron(III)-nitrate x 9H ₂ O	0.10	0.10	0.09	0.09
	Magnesium sulfate dried	139.52	139.52	125.64	125.64
	Potassium chloride	400.00	400.00	360.00	360.00
	Sodium chloride	6400.00	6400.00	6260.00	6260.00
	Sodium dihydrogen phosphate x H ₂ O	124.00	124.00	111.60	111.60
	di-Sodium hydrogen phosphate			250.00	250.00
Other Components	D(+)-Glucose anhydrous	4500.00	4500.00	4250.00	4250.00
	Peptone from casein			1000.00	1000.00
	Peptone from meat			500.00	500.00
	Phenol red	15.00	15.00	13.50	13.50
	Yeast extract			500.00	500.00
Amino acids	L-Arginine x HCl	42.00	42.00	37.80	37.80
	L-Cystine	24.00	24.00	21.60	21.60
	L-Glutamine	0	292.00	0	262.80
	L-Histidine x HCl x H ₂ O	21.00	21.00	18.90	18.90
	L-Isoleucine	52.40	52.40	47.16	47.16
	L-Leucine	52.40	52.40	47.16	47.16
	L-Lysine x HCl	73.10	73.10	65.79	65.79
	L-Methionine	15.00	15.00	13.50	13.50
	L-Phenylalanine	33.00	33.00	29.70	29.70
	L-Threonine	47.60	47.60	42.84	42.84
	L-Tryptophan	8.00	8.00	7.20	7.20
	L-Tyrosine	36.20	36.20	32.52	32.52
	L-Valine	46.80	46.80	42.12	42.12
Vitamins	D-Calcium pantothenate	2.00	2.00	1.80	1.80
	Choline chloride	2.00	2.00	1.80	1.80
	Folic acid	2.00	2.00	1.80	1.80
	myo-Inositol	3.60	3.60	3.24	3.24
	Nicotinamide	2.00	2.00	1.80	1.80
	Pyridoxal x HCl	2.00	2.00	1.80	1.80
	Riboflavin	0.20	0.20	0.18	0.18
	Thiamine x HCl	2.00	2.00	1.80	1.80
	Weight (g / L)	12.31	12.60	14.03	14.29

Grace's - Insect media

	Components	A2023	A1529
Inorganic salts	Calcium chloride x 2H ₂ O	1324.60	1324.60
	Magnesium chloride x 6H ₂ O	2278.86	2278.86
	Magnesium sulfate dried	1939.81	1939.81
	Potassium chloride	2240.00	2240.00
	di-Sodium hydrogen phosphate	876.92	876.92
Other Components	D(+)-Glucose anhydrous	700.00	700.00
	D(-)-Fructose	400.00	400.00
	Fumaric acid	55.00	55.00
	α-Ketoglutaric acid sodium salt	425.66	425.66
	DL-Malic acid	670.00	670.00
	Succinic acid	60.00	60.00
	D(+)-Sucrose	26680.00	26680.00
Amino acids	L-Alanine	200.00	200.00
	L-Arginine x HCl	700.00	700.00
	L-Asparagine x H ₂ O	350.00	350.00
	L-Aspartic acid	350.00	350.00
	L-Cystine	19.18	19.18
	L-Glutamic acid anhydrous	600.00	600.00
	L-Glutamine	0	600.00
	Glycine	650.00	650.00
	L-Histidine Base	2500.00	2500.00
	L-Isoleucine	50.00	50.00
	L-Leucine	75.00	75.00
	L-Lysine x HCl	625.00	625.00
	L-Methionine	50.00	50.00
	L-Phenylalanine	150.00	150.00
	L-Proline	350.00	350.00
	L-Serine	550.00	550.00
	L-Threonine	175.00	175.00
	L-Tryptophan	100.00	100.00
	L-Tyrosine	50.00	50.00
	L-Valine	100.00	100.00
Vitamins	p-Aminobenzoic acid	0.02	0.02
	D(+)-Biotin	0.01	0.01
	D-Calcium pantothenate	0.02	0.02
	Choline chloride	0.20	0.20
	Folic acid	0.02	0.02
	myo-Inositol	0.02	0.02
	Nicotinic acid	0.02	0.02
	Pyridoxine x HCl	0.02	0.02
	Riboflavin	0.02	0.02
	Thiamine x HCl	0.02	0.02
	Weight (g / L)	45.52	46.12

Ham's F10 - Media

	Components	A1970	A1525	A1989	A1982	A2026	A1952
Inorganic salts	Calcium chloride x 2H ₂ O	44.09	44.09	44.09	44.09	44.09	44.09
	Copper(II)-sulfate x 5H ₂ O	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
	Iron(II)-sulfate x 7H ₂ O	0.834	0.834	0.834	0.834	0.834	0.834
	Magnesium sulfate dried	106.06	106.06	106.06	106.06	106.06	106.06
	Potassium chloride	285.00	285.00	285.00	285.00	285.00	285.00
	Potassium dihydrogen phosphate	83.00	83.00	83.00	83.00	83.00	83.00
	Sodium chloride	7400.00	7400.00	6900.00	6900.00	6900.00	6900.00
	di-Sodium hydrogen phosphate	153.70	153.70	153.70	153.70	153.70	153.70
Other Components	Zinc sulfate x 7H ₂ O	0.029	0.029	0.029	0.029	0.029	0.029
	D(+)-Glucose anhydrous	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00
	HEPES			5958.00	5958.00	5958.00	5958.00
	2'-Deoxythymidine	0.73	0.73	0.73	0.73	0.73	0.73
	Hypoxanthine	4.08	4.08	4.08	4.08	4.08	4.08
	DL-	0.21	0.21	0.21	0.21	0.21	0.21
	Phenol red	1.20	1.20	1.20	1.20	1.20	1.20
	Sodium hydrogen carbonate					1200.00	1200.00
Amino acids	Sodium pyruvate	110.00	110.00	110.00	110.00	110.00	110.00
	L-Alanine	8.91	8.91	8.91	8.91	8.91	8.91
	L-Arginine x HCl	211.00	211.00	211.00	211.00	211.00	211.00
	L-Asparagine x H ₂ O	15.00	15.00	15.00	15.00	15.00	15.00
	L-Aspartic acid	13.30	13.30	13.30	13.30	13.30	13.30
	L-Cysteine x HCl x H ₂ O	35.12	35.12	35.12	35.12	35.12	35.12
	L-Glutamic acid anhydrous	14.70	14.70	14.70	14.70	14.70	14.70
	L-Glutamine	0	146.20	0	146.20	0	146.20
	Glycine	7.51	7.51	7.51	7.51	7.51	7.51
	L-Histidine x HCl x H ₂ O	21.00	21.00	21.00	21.00	21.00	21.00
	L-Isoleucine	2.60	2.60	2.60	2.60	2.60	2.60
	L-Leucine	13.10	13.10	13.10	13.10	13.10	13.10
	L-Lysine x HCl	29.30	29.30	29.30	29.30	29.30	29.30
	L-Methionine	4.48	4.48	4.48	4.48	4.48	4.48
	L-Phenylalanine	4.96	4.96	4.96	4.96	4.96	4.96
	L-Proline	11.50	11.50	11.50	11.50	11.50	11.50
	L-Serine	10.50	10.50	10.50	10.50	10.50	10.50
	L-Threonine	3.57	3.57	3.57	3.57	3.57	3.57
	L-Tryptophan	0.60	0.60	0.60	0.60	0.60	0.60
	L-Tyrosine	1.81	1.81	1.81	1.81	1.81	1.81
	L-Valine	3.50	3.50	3.50	3.50	3.50	3.50
Vitamins	D(+)-Biotin	0.024	0.024	0.024	0.024	0.024	0.024
	D-Calcium pantothenate	0.715	0.715	0.715	0.715	0.715	0.715
	Choline chloride	0.698	0.698	0.698	0.698	0.698	0.698
	Folic acid	1.32	1.32	1.32	1.32	1.32	1.32
	myo-Inositol	0.541	0.541	0.541	0.541	0.541	0.541
	Nicotinamide	0.615	0.615	0.615	0.615	0.615	0.615
	Pyridoxine x HCl	0.21	0.21	0.21	0.21	0.21	0.21
	Riboflavin	0.376	0.376	0.376	0.376	0.376	0.376
	Thiamine x HCl	1.01	1.01	1.01	1.01	1.01	1.01
	Vitamin B ₁₂	1.36	1.36	1.36	1.36	1.36	1.36
	Weight (g / L)	9.71	9.85	15.17	15.31	16.37	16.51

Ham's F12 - Media

	Components	A1948	A1526	A1969	A1953
Inorganic salts	Calcium chloride x 2H ₂ O	44.00	44.00	44.00	44.00
	Copper(II)-sulfate x 5H ₂ O	0.003	0.003	0.003	0.003
	Iron(II)-sulfate x 7H ₂ O	0.834	0.834	0.834	0.834
	Magnesium chloride x 6H ₂ O	122.00	122.00	122.00	122.00
	Potassium chloride	223.60	223.60	223.60	223.60
	Sodium chloride	7599.00	7599.00	7099.00	7099.00
	di-Sodium hydrogen phosphate	142.04	142.04	142.04	142.04
	Zinc sulfate x 7H ₂ O	0.863	0.863	0.863	0.863
Other Components	D(+)-Glucose anhydrous	1801.60	1801.60	1801.60	1801.60
	HEPES			5958.00	5958.00
	2'-Deoxythymidine	0.73	0.73	0.73	0.73
	Hypoxanthine	4.08	4.08	4.08	4.08
	Linoleic acid	0.084	0.084	0.084	0.084
	DL- α -Lipoic acid	0.21	0.21	0.21	0.21
	Phenol red	1.20	1.20	1.20	1.20
	Putrescine x 2HCl	0.161	0.161	0.161	0.161
	Sodium pyruvate	110.10	110.10	110.10	110.10
Amino acids	L-Alanine	8.91	8.91	8.91	8.91
	L-Arginine x HCl	210.70	210.70	210.70	210.70
	L-Asparagine x H ₂ O	15.01	15.01	15.01	15.01
	L-Aspartic acid	13.31	13.31	13.31	13.31
	L-Cysteine x HCl x H ₂ O	35.12	35.12	35.12	35.12
	L-Glutamic acid anhydrous	14.71	14.71	14.71	14.71
	L-Glutamine	0	146.20	0	146.20
	Glycine	7.51	7.51	7.51	7.51
	L-Histidine x HCl x H ₂ O	20.96	20.96	20.96	20.96
	L-Isoleucine	3.94	3.94	3.94	3.94
	L-Leucine	13.12	13.12	13.12	13.12
	L-Lysine x HCl	36.54	36.54	36.54	36.54
	L-Methionine	4.48	4.48	4.48	4.48
	L-Phenylalanine	4.96	4.96	4.96	4.96
	L-Proline	34.53	34.53	34.53	34.53
	L-Serine	10.51	10.51	10.51	10.51
	L-Threonine	11.91	11.91	11.91	11.91
	L-Tryptophan	2.04	2.04	2.04	2.04
	L-Tyrosine	5.44	5.44	5.44	5.44
	L-Valine	11.71	11.71	11.71	11.71
Vitamins	D(+)-Biotin	0.007	0.007	0.007	0.007
	D-Calcium pantothenate	0.24	0.24	0.24	0.24
	Choline chloride	13.96	13.96	13.96	13.96
	Folic acid	1.32	1.32	1.32	1.32
	myo-Inositol	18.02	18.02	18.02	18.02
	Nicotinamide	0.037	0.037	0.037	0.037
	Pyridoxine x HCl	0.062	0.062	0.062	0.062
	Riboflavin	0.038	0.038	0.038	0.038
	Thiamine x HCl	0.34	0.34	0.34	0.34
	Vitamin B ₁₂	1.36	1.36	1.36	1.36
	Weight (g / L)	10.55	10.70	16.01	16.16

Ham's F12K - Media				
	Components	A1963	A1927	
Inorganic salts	Calcium chloride x 2H ₂ O	135.24	135.24	
	Copper(II)-sulfate x 5H ₂ O	0.0025	0.0025	
	Iron(II)-sulfate x 7H ₂ O	0.834	0.834	
	Magnesium chloride x 6H ₂ O	105.72	105.72	
	Magnesium sulfate dried	275.20	275.20	
	Potassium chloride	283.29	283.29	
	Potassium dihydrogen phosphate	58.52	58.52	
	Sodium chloride	7597.20	7597.20	
	di-Sodium hydrogen phosphate	115.02	115.02	
	Zinc sulfate x 7H ₂ O	0.1437	0.1437	
Other Components	D(+)-Glucose anhydrous	1260.00	1260.00	
	2'-Deoxythymidine	0.7266	0.7266	
	Hypoxanthine	4.08	4.08	
	DL- α -Lipoic acid	0.2063	0.2063	
	Phenol red	3.00	3.00	
	Putrescine x 2HCl	0.3222	0.3222	
	Sodium pyruvate	220.00	220.00	
Amino acids	L-Alanine	17.82	17.82	
	L-Arginine x HCl	421.40	421.40	
	L-Asparagine x H ₂ O	30.02	30.02	
	L-Aspartic acid	26.62	26.62	
	L-Cysteine x HCl x H ₂ O	70.24	70.24	
	L-Glutamic acid anhydrous	29.42	29.42	
	L-Glutamine	0	292.20	
	Glycine	15.01	15.01	
	L-Histidine x HCl x H ₂ O	41.92	41.92	
	L-Isoleucine	7.87	7.87	
	L-Leucine	26.24	26.24	
	L-Lysine x HCl	73.04	73.04	
	L-Methionine	8.95	8.95	
	L-Phenylalanine	9.91	9.91	
	L-Proline	69.06	69.06	
	L-Serine	21.02	21.02	
	L-Threonine	23.82	23.82	
	L-Tryptophan	4.08	4.08	
	L-Tyrosine	10.87	10.87	
	L-Valine	23.42	23.42	
Vitamins	D(+)-Biotin	0.0732	0.0732	
	D-Calcium pantothenate	0.477	0.477	
	Choline chloride	13.96	13.96	
	Folic acid	1.3242	1.32	
	myo-Inositol	18.02	18.02	
	Nicotinamide	0.0366	0.0366	
	Pyridoxine x HCl	0.0617	0.0617	
	Riboflavin	0.0376	0.0376	
	Thiamine x HCl	0.3373	0.3373	
	Vitamin B ₁₂	1.3554	1.3554	
	Weight (g / L)	11.03	11.32	

Hanks' balanced salts					
	Components	A1711	A3140	A2729	A2512
Inorganic salts	Calcium chloride x 2H ₂ O	185.44	185.44		
	Magnesium sulfate dried	139.52	139.52		
	Potassium chloride	400.00	400.00	400.00	400.00
	Potassium dihydrogen phosphate	60.00	60.00	60.00	60.00
	Sodium chloride	8000.00	8000.00	8000.00	8000.00
	di-Sodium hydrogen phosphate anhydrous	47.88	47.88	47.88	47.88
Other Components	D(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00
	Phenol red	10.00		10.00	
	Weight (g / L)	9.84	9.83	9.52	9.51

IPL-41 - Media

	Components	A2027	A1964
Inorganic salts	Ammonium heptamolybdate x 4H ₂ O	0.04	0.04
	Calcium chloride x 2H ₂ O	662.30	662.30
	Cobalt(II)-chloride x 6H ₂ O	0.05	0.05
	Cupric chloride x 6H ₂ O	0.20	0.20
	Iron(II)-sulfate x 7H ₂ O	0.55	0.55
	Magnesium sulfate dried	1311.40	1311.40
	Manganese chloride x 4H ₂ O	0.02	0.02
	Potassium chloride	1200.00	1200.00
	Sodium chloride	2850.00	2850.00
	Sodium dihydrogen phosphate x H ₂ O	1160.00	1160.00
	Zinc chloride	0.04	0.04
Other Components	D(+)-Glucose anhydrous	2500.00	2500.00
	Fumaric acid	4.40	4.40
	α -Ketoglutaric acid sodium salt	34.05	34.05
	DL-Malic acid	53.60	53.60
	D(+)-Maltose x H ₂ O	1052.58	1052.58
	Succinic acid	4.80	4.80
	D(+)-Sucrose	1650.00	1650.00
Amino acids	β -Alanine	300.00	300.00
	L-Arginine x HCl	800.00	800.00
	L-Asparagine x H ₂ O	1477.14	1477.14
	L-Aspartic acid	1300.00	1300.00
	L-Cystine	100.00	100.00
	L-Glutamic acid anhydrous	1500.00	1500.00
	L-Glutamine	0	1000.00
	Glycine	200.00	200.00
	L-Histidine Base	200.00	200.00
	L-Hydroxyproline	800.00	800.00
	L-Isoleucine	750.00	750.00
	L-Leucine	250.00	250.00
	L-Lysine x HCl	700.00	700.00
	L-Methionine	1000.00	1000.00
	L-Phenylalanine	1000.00	1000.00
	L-Proline	500.00	500.00
	L-Serine	200.00	200.00
	L-Threonine	200.00	200.00
	L-Tryptophan	100.00	100.00
	L-Tyrosine	250.02	250.02
	L-Valine	500.00	500.00
Vitamins	p-Aminobenzoic acid	0.32	0.32
	D(+)-Biotin	0.16	0.16
	D-Calcium pantothenate	0.008	0.008
	Choline chloride	20.00	20.00
	Folic acid	0.08	0.08
	myo-Inositol	0.40	0.40
	Nicotinamide	0.16	0.16
	Nicotinic acid	0.16	0.16
	Pyridoxine x HCl	0.40	0.40
	Riboflavin	0.08	0.08
	Thiamine x HCl	0.08	0.08
	Vitamin B ₁₂	0.24	0.24
	Weight (g / L)	24.63	25.63

Iscove's modified Dulbecco's - Media (IMDM)					
	Components	A2028	A1909	A2029	A1322
Inorganic salts	Calcium chloride x 2H ₂ O	218.56	218.56	218.56	218.56
	Magnesium sulfate dried	139.52	139.52	139.52	139.52
	Potassium chloride	330.00	330.00	330.00	330.00
	Potassium nitrate	0.0760	0.0760	0.0760	0.0760
	Sodium chloride	5005.00	5005.00	4505.00	4505.00
	Sodium dihydrogen phosphate x H ₂ O	125.00	125.00	125.00	125.00
	Sodium selenite anhydrous	0.0110	0.0110	0.0110	0.0110
Other Components	D(+)-Glucose anhydrous	4500.00	4500.00	4500.00	4500.00
	HEPES			5958.00	5958.00
	Phenol red	15.00	15.00	15.00	15.00
	Sodium pyruvate	110.00	110.00	110.00	110.00
Amino acids	L-Alanine	25.00	25.00	25.00	25.00
	L-Arginine x HCl	84.00	84.00	84.00	84.00
	L-Asparagine x H ₂ O	28.40	28.40	28.40	28.40
	L-Aspartic acid	30.00	30.00	30.00	30.00
	L-Cystine	70.00	70.00	70.00	70.00
	L-Glutamic acid anhydrous	75.00	75.00	75.00	75.00
	L-Glutamine	0	584.00	0	584.00
	Glycine	30.00	30.00	30.00	30.00
	L-Histidine x HCl x H ₂ O	42.00	42.00	42.00	42.00
	L-Isoleucine	105.00	105.00	105.00	105.00
	L-Leucine	105.00	105.00	105.00	105.00
	L-Lysine x HCl	146.00	146.00	146.00	146.00
	L-Methionine	30.00	30.00	30.00	30.00
	L-Phenylalanine	66.00	66.00	66.00	66.00
	L-Proline	40.00	40.00	40.00	40.00
	L-Serine	42.00	42.00	42.00	42.00
	L-Threonine	95.00	95.00	95.00	95.00
	L-Tryptophan	16.00	16.00	16.00	16.00
	L-Tyrosine	74.86	74.86	74.86	74.86
	L-Valine	94.00	94.00	94.00	94.00
Vitamins	D(+)-Biotin	0.0130	0.0130	0.0130	0.0130
	D-Calcium pantothenate	4.00	4.00	4.00	4.00
	Choline chloride	4.00	4.00	4.00	4.00
	Folic acid	4.00	4.00	4.00	4.00
	myo-Inositol	7.20	7.20	7.20	7.20
	Nicotinamide	4.00	4.00	4.00	4.00
	Pyridoxal x HCl	4.00	4.00	4.00	4.00
	Riboflavin	0.40	0.40	0.40	0.40
	Thiamine x HCl	4.00	4.00	4.00	4.00
	Vitamin B ₁₂	0.0130	0.0130	0.0130	0.0130
	Weight (g / L)	11.67	12.26	17.13	17.72

Joklik-MEM, modified for spinner culture

	Components	A1974	A1539
Inorganic salts	Magnesium chloride x 6H ₂ O	200.00	200.00
	Potassium chloride	400.00	400.00
	Sodium chloride	6500.00	6500.00
	Sodium dihydrogen phosphate x H ₂ O	1327.00	1327.00
Other Components	D(+)-Glucose anhydrous	2000.00	2000.00
	Phenol red	10.00	10.00
Amino acids	L-Arginine x HCl	126.00	126.00
	L-Cystine	24.00	24.00
	L-Glutamine	0	294.00
	L-Histidine Base	31.00	31.00
	L-Isoleucine	52.00	52.00
	L-Leucine	52.00	52.00
	L-Lysine x HCl	65.00	65.00
	L-Methionine	15.00	15.00
	L-Phenylalanine	32.00	32.00
	L-Threonine	48.00	48.00
	L-Tryptophan	10.00	10.00
	L-Tyrosine	32.60	32.60
Vitamins	L-Valine	46.00	46.00
	D-Calcium pantothenate	1.00	1.00
	Choline chloride	1.00	1.00
	Folic acid	1.00	1.00
	myo-Inositol	2.00	2.00
	Nicotinamide	1.00	1.00
	Pyridoxal x HCl	1.00	1.00
	Riboflavin	0.10	0.10
	Thiamine x HCl	1.00	1.00
	Weight (g / L)	10.98	11.27

Leibovitz's L15 - Media

	Components	A1967	A1323	A1968	A1954
Inorganic salts	Calcium chloride x 2H ₂ O	185.44	185.44	185.44	185.44
	Magnesium chloride x 6H ₂ O	200.00	200.00	200.00	200.00
	Magnesium sulfate dried	139.52	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00	400.00
	Potassium dihydrogen phosphate	60.00	60.00	60.00	60.00
	Sodium chloride	8000.00	8000.00	7500.00	7500.00
	di-Sodium hydrogen phosphate	190.00	190.00	190.00	190.00
Other Comp- onents	HEPES			5958.00	5958.00
	D(+)-Galactose anhydrous	900.00	900.00	900.00	900.00
	Phenol red	10.00	10.00	10.00	10.00
Amino acids	Sodium pyruvate	550.00	550.00	550.00	550.00
	L-Alanine	225.00	225.00	225.00	225.00
	L-Arginine Base	500.00	500.00	500.00	500.00
	L-Asparagine x H ₂ O	250.00	250.00	250.00	250.00
	L-Cysteine	120.00	120.00	120.00	120.00
	L-Glutamine	0	300.00	0	300.00
	Glycine	200.00	200.00	200.00	200.00
	L-Histidine Base	250.00	250.00	250.00	250.00
	L-Isoleucine	250.00	250.00	250.00	250.00
	L-Leucine	125.00	125.00	125.00	125.00
	L-Lysine x HCl	93.75	93.75	93.75	93.75
	L-Methionine	75.00	75.00	75.00	75.00
	L-Phenylalanine	125.00	125.00	125.00	125.00
	L-Serine	200.00	200.00	200.00	200.00
	L-Threonine	300.00	300.00	300.00	300.00
	L-Tryptophan	20.00	20.00	20.00	20.00
	L-Tyrosine	300.00	300.00	300.00	300.00
	L-Valine	100.00	100.00	100.00	100.00
Vitamins	D-Calcium pantothenate	1.00	1.00	1.00	1.00
	Choline chloride	1.00	1.00	1.00	1.00
	Folic acid	1.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	1.00	1.00
	Pyridoxine x HCl	1.00	1.00	1.00	1.00
	Riboflavin-5'-phosphate sodium salt x H ₂ O	0.1075	0.1075	0.1075	0.1075
	Thiamine monophosphate chloride	1.00	1.00	1.00	1.00
	Weight (g / L)	13.78	14.08	19.23	19.53

Linsmaier, Bednar & Skoog Plant salts

	Components	A0591
Inorganic salts	Ammonium nitrate	1650.00
	Boric acid	6.20
	Calcium chloride x 2H ₂ O	439.98
	Cobalt(II)-chloride x 6H ₂ O	0.025
	Copper(II)-sulfate x 5H ₂ O	0.025
	EDTA disodiumsalt x 2H ₂ O	37.25
	Iron(II)-sulfate x 7H ₂ O	27.85
	Magnesium sulfate dried	258.37
	Manganese(II)-sulfate x H ₂ O	16.90
	Potassium dihydrogen phosphate	170.00
	Potassium iodide	0.83
	Potassium nitrate	1900.00
	Sodium molybdate x 2H ₂ O	0.25
	Zinc sulfate x 7H ₂ O	10.58
Vitamins	myo-Inositol	100.00
	Thiamine x HCl	0.40
	Weight (g / L)	4.62

McCoy's 5A - Media

	Components	A2034	A1324	A2035	A1955
Inorganic salts	Calcium chloride x 2H ₂ O	132.46	132.46	132.46	132.46
	Magnesium sulfate dried	139.52	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00	400.00
	Sodium chloride	6460.00	6460.00	5960.00	5960.00
	Sodium dihydrogen phosphate x H ₂ O	580.00	580.00	580.00	580.00
Other Components	D(+)-Glucose anhydrous	3000.00	3000.00	3000.00	3000.00
	HEPES			5960.00	5960.00
	Bacto - Peptone	600.00	600.00	600.00	600.00
	Glutathione (red.)	0.50	0.50	0.50	0.50
	Phenol red	10.00	10.00	10.00	10.00
Amino acids	L-Alanine	13.36	13.36	13.36	13.36
	L-Arginine x HCl	42.10	42.10	42.10	42.10
	L-Asparagine x H ₂ O	45.00	45.00	45.00	45.00
	L-Aspartic acid	19.97	19.97	19.97	19.97
	L-Cysteine	24.24	24.24	24.24	24.24
	L-Glutamic acid	22.10	22.10	22.10	22.10
	L-Glutamine	0	219.20	0	219.20
	Glycine	7.50	7.50	7.50	7.50
	L-Histidine x HCl x H ₂ O	20.76	20.76	20.76	20.76
	L-Hydroxyproline	19.70	19.70	19.70	19.70
	L-Isoleucine	39.36	39.36	39.36	39.36
	L-Leucine	39.36	39.36	39.36	39.36
	L-Lysine x HCl	36.50	36.50	36.50	36.50
	L-Methionine	14.90	14.90	14.90	14.90
	L-Phenylalanine	16.50	16.50	16.50	16.50
	L-Proline	17.30	17.30	17.30	17.30
	L-Serine	26.30	26.30	26.30	26.30
	L-Threonine	17.90	17.90	17.90	17.90
	L-Tryptophan	3.10	3.10	3.10	3.10
	L-Tyrosine	18.10	18.10	18.10	18.10
	L-Valine	17.60	17.60	17.60	17.60

McCoy's 5A - Media

	Components	A2034	A1324	A2035	A1955
Vitamins	p-Aminobenzoic acid	1.00	1.00	1.00	1.00
	Ascorbic acid	0.50	0.50	0.50	0.50
	D(+)-Biotin	0.20	0.20	0.20	0.20
	D-Calcium pantothenate	0.20	0.20	0.20	0.20
	Choline chloride	5.00	5.00	5.00	5.00
	Folic acid	10.00	10.00	10.00	10.00
	myo-Inositol	36.00	36.00	36.00	36.00
	Nicotinamide	0.50	0.50	0.50	0.50
	Nicotinic acid	0.50	0.50	0.50	0.50
	Pyridoxal x HCl	0.50	0.50	0.50	0.50
	Pyridoxine x HCl	0.50	0.50	0.50	0.50
	Riboflavin	0.20	0.20	0.20	0.20
	Thiamine x HCl	0.20	0.20	0.20	0.20
	Vitamin B ₁₂	2.00	2.00	2.00	2.00
	Weight (g / L)	11.84	12.06	17.30	17.52

Medium 199 with Earle's salts

	Components	A2022	A1325	A2030	A1326
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	264.92	264.92
	Iron(III)-nitrate x 9H ₂ O	0.72	0.72	0.72	0.72
	Magnesium sulfate dried	139.52	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00	400.00
	Sodium acetate x 3H ₂ O	82.95	82.95	82.95	82.95
	Sodium chloride	6800.00	6800.00	6300.00	6300.00
	Sodium dihydrogen phosphate	140.00	140.00	140.00	140.00
	D(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00
Other Components	HEPES			5958.00	5958.00
	AMP	0.20	0.20	0.20	0.20
	ATP	1.00	1.00	1.00	1.00
	Adenine sulfate	10.00	10.00	10.00	10.00
	Cholesterol	0.20	0.20	0.20	0.20
	2-Deoxy-D-ribose	0.50	0.50	0.50	0.50
	Glutathione (red.)	0.05	0.05	0.05	0.05
	Guanine x HCl	0.30	0.30	0.30	0.30
	Hypoxanthine	0.30	0.30	0.30	0.30
	Phenol red	10.00	10.00	10.00	10.00
	D-Ribose	0.50	0.50	0.50	0.50
	Thymine	0.30	0.30	0.30	0.30
	Tween 80	4.90	4.90	4.90	4.90
	Uracil	0.30	0.30	0.30	0.30
	Xanthine	0.30	0.30	0.30	0.30
Amino acids	L-Alanine	25.00	25.00	25.00	25.00
	L-Arginine x HCl	70.00	70.00	70.00	70.00
	L-Aspartic acid	30.00	30.00	30.00	30.00
	L-Cysteine x HCl x H ₂ O	0.10	0.10	0.10	0.10
	L-Cystine	20.00	20.00	20.00	20.00
	L-Glutamic acid anhydrous	67.00	67.00	67.00	67.00
	L-Glutamine	0	100.00	0	100.00
	Glycine	50.00	50.00	50.00	50.00
	L-Histidine x HCl x H ₂ O	21.88	21.88	21.88	21.88
	L-Hydroxyproline	10.00	10.00	10.00	10.00
	L-Isoleucine	20.00	20.00	20.00	20.00
	L-Leucine	60.00	60.00	60.00	60.00
	L-Lysine x HCl	70.00	70.00	70.00	70.00
	L-Methionine	15.00	15.00	15.00	15.00
	L-Phenylalanine	25.00	25.00	25.00	25.00
	L-Proline	40.00	40.00	40.00	40.00
	L-Serine	25.00	25.00	25.00	25.00
	L-Threonine	30.00	30.00	30.00	30.00
	L-Tryptophan	10.00	10.00	10.00	10.00
	L-Tyrosine	40.00	40.00	40.00	40.00
	L-Valine	25.00	25.00	25.00	25.00

Medium 199 with Earle's salts

	Components	A2022	A1325	A2030	A1326
Vitamins	p-Aminobenzoic acid	0.05	0.05	0.05	0.05
	Ascorbic acid	0.05	0.05	0.05	0.05
	D(+)-Biotin	0.01	0.01	0.01	0.01
	Calciferol	0.10	0.10	0.10	0.10
	D-Calcium pantothenate	0.01	0.01	0.01	0.01
	Choline chloride	0.50	0.50	0.50	0.50
	Folic acid	0.01	0.01	0.01	0.01
	myo-Inositol	0.05	0.05	0.05	0.05
	Menadione	0.01	0.01	0.01	0.01
	Nicotinamide	0.025	0.025	0.025	0.025
	Nicotinic acid	0.025	0.025	0.025	0.025
	Pyridoxal x HCl	0.025	0.025	0.025	0.025
	Pyridoxine x HCl	0.025	0.025	0.025	0.025
	Riboflavin	0.01	0.01	0.01	0.01
	Thiamine x HCl	0.01	0.01	0.01	0.01
	DL- α -Tocopherolphosphate-Na ₂	0.01	0.01	0.01	0.01
	Vitamin A acetate	0.14	0.14	0.14	0.14
	Weight (g / L)	9.51	9.61	14.97	15.07

Medium 199 with Hanks' salts

	Components	A2031	A1327	A2021	A1328
Inorganic salts	Calcium chloride x 2H ₂ O	185.44	185.44	185.44	185.44
	Iron(III)-nitrate x 9H ₂ O	0.72	0.72	0.72	0.72
	Magnesium sulfate dried	139.68	139.68	139.68	139.68
	Potassium chloride	400.00	400.00	400.00	400.00
	Potassium dihydrogen phosphate	60.00	60.00	60.00	60.00
	Sodium acetate x 3H ₂ O	83.00	83.00	83.00	83.00
	Sodium chloride	8000.00	8000.00	7500.00	7500.00
	di-Sodium hydrogen phosphate	47.68	47.68	47.68	47.68
Other Components	D(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00
	HEPES			5958.00	5958.00
	AMP	0.20	0.20	0.20	0.20
	ATP	1.00	1.00	1.00	1.00
	Adenine sulfate	10.00	10.00	10.00	10.00
	Cholesterol	0.20	0.20	0.20	0.20
	2-Deoxy-D-ribose	0.50	0.50	0.50	0.50
	Glutathione (red.)	0.05	0.05	0.05	0.05
	Guanine x HCl	0.30	0.30	0.30	0.30
	Hypoxanthine	0.30	0.30	0.30	0.30
	Phenol red	10.00	10.00	10.00	10.00
	D-Ribose	0.50	0.50	0.50	0.50
	Thymine	0.30	0.30	0.30	0.30
	Tween 80	4.90	4.90	4.90	4.90
	Uracil	0.30	0.30	0.30	0.30
	Xanthine	0.30	0.30	0.30	0.30

Medium 199 with Hanks' salts					
	Components	A2031	A1327	A2021	A1328
Amino acids	L-Alanine	25.00	25.00	25.00	25.00
	L-Arginine x HCl	70.00	70.00	70.00	70.00
	L-Aspartic acid	30.00	30.00	30.00	30.00
	L-Cysteine x HCl x H ₂ O	0.10	0.10	0.10	0.10
	L-Cystine	20.00	20.00	20.00	20.00
	L-Glutamic acid anhydrous	67.00	67.00	67.00	67.00
	L-Glutamine	0	100.00	0	100.00
	Glycine	50.00	50.00	50.00	50.00
	L-Histidine x HCl x H ₂ O	21.88	21.88	21.88	21.88
	L-Hydroxyproline	10.00	10.00	10.00	10.00
	L-Isoleucine	20.00	20.00	20.00	20.00
	L-Leucine	60.00	60.00	60.00	60.00
	L-Lysine x HCl	70.00	70.00	70.00	70.00
	L-Methionine	15.00	15.00	15.00	15.00
	L-Phenylalanine	25.00	25.00	25.00	25.00
	L-Proline	40.00	40.00	40.00	40.00
	L-Serine	25.00	25.00	25.00	25.00
	L-Threonine	30.00	30.00	30.00	30.00
	L-Tryptophan	10.00	10.00	10.00	10.00
	L-Tyrosine	40.00	40.00	40.00	40.00
	L-Valine	25.00	25.00	25.00	25.00
Vitamins	p-Aminobenzoic acid	0.05	0.05	0.05	0.05
	Ascorbic acid	0.05	0.05	0.05	0.05
	D-(+)-Biotin	0.01	0.01	0.01	0.01
	Calciferol	0.10	0.10	0.10	0.10
	D-Calcium pantothenate	0.01	0.01	0.01	0.01
	Choline chloride	0.50	0.50	0.50	0.50
	Folic acid	0.01	0.01	0.01	0.01
	myo-Inositol	0.05	0.05	0.05	0.05
	Menadione	0.01	0.01	0.01	0.01
	Nicotinamide	0.025	0.025	0.025	0.025
	Nicotinic acid	0.025	0.025	0.025	0.025
	Pyridoxal x HCl	0.025	0.025	0.025	0.025
	Pyridoxine x HCl	0.025	0.025	0.025	0.025
	Riboflavin	0.01	0.01	0.01	0.01
	Thiamine x HCl	0.01	0.01	0.01	0.01
	DL- α -Tocopherolphosphate-Na ₂	0.01	0.01	0.01	0.01
	Vitamin A acetate	0.14	0.14	0.14	0.14
	Weight (g / L)	10.60	10.70	16.06	16.16

α -MEM									
	Components	A1971	A1330	A1913	A1329	A1980	A1972	A1949	A1914
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92
	Magnesium sulfate dried	139.52	139.52	139.52	139.52	139.52	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Sodium chloride	6800.00	6800.00	6800.00	6800.00	6300.00	6300.00	6300.00	6300.00
	Sodium dihydrogen phosphate x H ₂ O	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00
Other Components	D-(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
	HEPES					5958.00	5958.00	5958.00	5958.00
	Lipoic acid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	Phenol red	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Sodium pyruvate	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00

α-MEM

	Components	A1971	A1330	A1913	A1329	A1980	A1972	A1949	A1914
Amino acids	L-Alanine	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
	L-Arginine x HCl	126.64	126.64	126.64	126.64	126.64	126.64	126.64	126.64
	L-Asparagine x H ₂ O	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
	L-Aspartic acid	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
	L-Cysteine x HCl x H ₂ O	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	L-Cystine	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
	L-Glutamic acid anhydrous	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
	L-Glutamine	0	292.00	0	292.00	0	292.00	0	292.00
	L-Glycine	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
	L-Histidine x HCl x H ₂ O	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00
	L-Isoleucine	52.40	52.40	52.40	52.40	52.40	52.40	52.40	52.40
	L-Leucine	52.40	52.40	52.40	52.40	52.40	52.40	52.40	52.40
	L-Lysine x HCl	72.47	72.47	72.47	72.47	72.47	72.47	72.47	72.47
	L-Methionine	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	L-Phenylalanine	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	L-Proline	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
	L-Serine	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
	L-Threonine	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00
	L-Tryptophan	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	L-Tyrosine	36.20	36.20	36.20	36.20	36.20	36.20	36.20	36.20
	L-Valine	46.00	46.00	46.00	46.00	46.00	46.00	46.00	46.00
Vitamins	L-Ascorbic acid	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
	D-(+)-Biotin	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	D-Calcium pantothenate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Choline chloride	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Folic acid	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Riboflavin	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Vitamin B ₁₂	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Ribonucleosides	Adenosine			10.00	10.00			10.00	10.00
	Cytidine			10.00	10.00			10.00	10.00
	Guanosine			10.00	10.00			10.00	10.00
	Uridine			10.00	10.00			10.00	10.00
Deoxyribonucleosides	2'-Deoxyadenosine x H ₂ O			10.00	10.00			10.00	10.00
	2'-Deoxycytidine x HCl			11.00	11.00			10.00	10.00
	2'-Deoxyguanosine			10.00	10.00			10.00	10.00
	2'-Deoxythymidine			10.00	10.00			10.00	10.00
	Weight (g / L)	9.88	10.17	9.96	10.25	15.33	15.63	15.41	15.71

MEM with Earle's salts

	Components	A1331	A1332	A2018	A1334	A2019	A1333	A2032	A1956	A2597 autoclavable
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92	264.92
	Magnesium sulfate dried	139.52	139.52	139.52	139.52	139.52	139.52	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Sodium chloride	6800.00	6800.00	6800.00	6800.00	6300.00	6300.00	6300.00	6300.00	6800.00
	Sodium dihydrogen phosphate x H ₂ O	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00
Other Components	D-(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
	HEPES					5958.00	5958.00	5958.00	5958.00	
	Phenol red	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	6.00
	Succinic acid									75.00
	Succinic acid sodium salt									100.00
Amino acids	L-Alanine			8.90	8.90			8.90	8.90	
	L-Arginine x HCl	126.00	126.00	126.00	126.00	126.00	126.00	126.00	126.00	126.00
	L-Asparagine x H ₂ O			13.20	13.20			13.20	13.20	
	L-Aspartic acid			13.30	13.30			13.30	13.30	
	L-Cystine	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
	L-Glutamic acid anhydrous			14.70	14.70			14.70	14.70	
	L-Glutamine	0	292.00	0	292.00	0	292.00	0	292.00	0
	Glycine			7.50	7.50			7.50	7.50	
	L-Histidine x HCl x H ₂ O	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00
	L-Isoleucine	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00
	L-Leucine	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00
	L-Lysine x HCl	72.50	72.50	72.50	72.50	72.50	72.50	72.50	72.50	72.50
	L-Methionine	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	L-Phenylalanine	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	L-Proline			11.50	11.50			11.50	11.50	
	L-Serine			10.50	10.50			10.50	10.50	
	L-Threonine	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00
	L-Tryptophan	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	L-Tyrosine	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
	L-Valine	46.00	46.00	46.00	46.00	46.00	46.00	46.00	46.00	46.00
Vitamins	D-Calcium pantothenate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Choline bitartrate									1.80
	Choline chloride	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
	Folic acid	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Riboflavin	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Weight (g / L)	9.32	9.61	9.40	9.69	14.78	15.07	14.86	15.15	9.49

MEM with Hanks' salts

	Components	A1957	A1335	A2041	A1337	A2042	A1336	A2043	A1958
Inorganic salts	Calcium chloride x 2H ₂ O	185.44	185.44	185.44	185.44	185.44	185.44	185.44	185.44
	Magnesium sulfate dried	139.52	139.52	139.52	139.52	139.52	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Potassium dihydrogen phosphate anhydrous	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
	Sodium chloride	8000.00	8000.00	8000.00	8000.00	7500.00	7500.00	7500.00	7500.00
	di-Sodium hydrogen phosphate	47.88	47.88	47.88	47.88	47.88	47.88	47.88	47.88
Other Components	D-(+)-Glucose anhydrous	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
	HEPES					5958.00	5958.00	5958.00	5958.00
	Phenol red	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Amino acids	L-Alanine			8.90	8.90			8.90	8.90
	L-Arginine x HCl	126.00	126.00	126.00	126.00	126.00	126.00	126.00	126.00
	L-Asparagine x H ₂ O			13.20	13.20			13.20	13.20
	L-Aspartic acid			13.30	13.30			13.30	13.30
	L-Cystine	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
	L-Glutamic acid anhydrous			14.70	14.70			14.70	14.70
	L-Glutamine	0	292.00	0	292.00	0	292.00	0	292.00
	Glycine			7.50	7.50			7.50	7.50
	L-Histidine x HCl x H ₂ O	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00
	L-Isoleucine	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00
	L-Leucine	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00
	L-Lysine x HCl	72.50	72.50	72.50	72.50	72.50	72.50	72.50	72.50
	L-Methionine	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	L-Phenylalanine	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	L-Proline			11.50	11.50			11.50	11.50
	L-Serine			10.50	10.50			10.50	10.50
	L-Threonine	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00
	L-Tryptophan	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	L-Tyrosine	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
	L-Valine	46.00	46.00	46.00	46.00	46.00	46.00	46.00	46.00
Vitamins	D-Calcium pantothenate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Choline chloride	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Folic acid	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Riboflavin	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Weight (g / L)	10.41	10.70	10.49	10.78	15.86	16.16	15.94	16.24

S-MEM, modified for spinner culture

	Components	A1338	A1308	A1975 autoclavable
Inorganic salts	Magnesium sulfate dried	139.52	139.52	139.52
	Potassium chloride	400.00	400.00	400.00
	Sodium chloride	6800.00	6800.00	6800.00
	Sodium dihydrogen phosphate x H ₂ O	1400.00	1400.00	1400.00
Other Components	D(+)-Glucose anhydrous	1000.00	1000.00	1000.00
	Phenol red	10.00	10.00	6.00
	Succinic acid			75.00
	Succinic acid sodium salt			100.00
Amino acids	L-Arginine x HCl	126.00	126.00	126.00
	L-Cystine	24.00	24.00	24.00
	L-Glutamine	0	292.00	0
	L-Histidine x HCl	42.00	42.00	42.00
	L-Isoleucine	52.00	52.00	52.00
	L-Leucine	52.00	52.00	52.00
	L-Lysine x HCl	72.50	72.50	72.50
	L-Methionine	15.00	15.00	15.00
	L-Phenylalanine	32.00	32.00	32.00
	L-Threonine	48.00	48.00	48.00
	L-Tryptophan	10.00	10.00	10.00
	L-Tyrosine	36.00	36.00	36.00
	L-Valine	46.00	46.00	46.00
Vitamins	D-Calcium pantothenate	1.00	1.00	1.00
	Choline bitartrate			1.80
	Choline chloride	1.00	1.00	
	Folic acid	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	2.00
	Nicotinamide	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	1.00
	Riboflavin	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	1.00
	Weight (g / L)	10.31	10.61	10.48

NCTC 135 - Media

	Components	A2020	A1528
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92
	Magnesium sulfate dried	139.52	139.52
	Potassium chloride	400.00	400.00
	Sodium acetate x 3H ₂ O	50.00	50.00
	Sodium chloride	6800.00	6800.00
	Sodium dihydrogen phosphate x H ₂ O	140.00	140.00
Other Components	D(+)-Glucose anhydrous	1000.00	1000.00
	L-α-Aminobutyric acid	5.51	5.51
	Ethanol	40.00	40.00
	Glucosamine x HCl	3.85	3.85
	D-(-)-Glucuronic acid sodium salt H ₂ O	1.95	1.95
	D-(-)-Glucuronic acid-γ-lactone	1.80	1.80
	Glutathione (ox.)	10.00	10.00
	5-Methylcytosine	0.10	0.10
	Phenol red	15.00	15.00
	L-Taurine	4.18	4.18
	Tween 80	12.50	12.50

NCTC 135 - Media

	Components	A2020	A1528
Amino acids	L-Alanine	31.48	31.48
	L-Arginine x HCl	31.16	31.16
	L-Asparagine x H ₂ O	9.11	9.11
	L-Aspartic acid	9.91	9.91
	L-Cystine	10.49	10.49
	L-Glutamic acid anhydrous	8.26	8.26
	L-Glutamine	0	135.73
	Glycine	13.51	13.51
	L-Histidine x HCl x H ₂ O	24.36	24.36
	L-Hydroxyproline	4.09	4.09
	L-Isoleucine	18.04	18.04
	L-Leucine	20.44	20.44
	L-Lysine x HCl	38.43	38.43
	L-Methionine	4.44	4.44
	L-Ornithine x HCl	9.41	9.41
	L-Phenylalanine	16.53	16.53
	L-Proline	6.13	6.13
	L-Serine	10.75	10.75
	L-Threonine	18.93	18.93
	L-Tryptophan	17.50	17.50
	L-Tyrosine	16.44	16.44
	L-Valine	25.00	25.00
Vitamins	p-Aminobenzoic acid	0.125	0.125
	L-Ascorbic acid	50.00	50.00
	D(+)-Biotin	0.025	0.025
	Calciferol	0.25	0.25
	D-Calcium pantothenate	0.025	0.025
	Choline chloride	1.25	1.25
	Folic acid	0.025	0.025
	myo-Inositol	0.125	0.125
	Menadione	0.025	0.025
	Nicotinamide	0.0625	0.0625
	Nicotinic acid	0.0625	0.0625
	Pyridoxal x HCl	0.0625	0.0625
	Pyridoxine x HCl	0.0625	0.0625
	Riboflavin	0.025	0.025
	Thiamine x HCl	0.025	0.025
	DL- α -Tocopherolphosphate x Na ₂	0.025	0.025
	Vitamin A acetate	0.25	0.25
	Vitamin B ₁₂	10.00	10.00
Deoxyribonucleosides	2'-Deoxyadenosine x H ₂ O	10.00	10.00
	2'-Deoxycytidine x HCl	10.00	10.00
	2'-Deoxyguanosine	10.00	10.00
	2'-Deoxythymidine	10.00	10.00
Coenzymes	Coccarboxylase x HCl	1.00	1.00
	Coenzyme A	2.50	2.50
	FAD	1.00	1.00
	NAD	7.00	7.00
	NADP	1.00	1.00
	UTP	1.00	1.00
	Weight (g / L)	9.35	9.49

PBS - Buffer (after Dulbecco)

	Components	A0964	A0965	A1908
Inorganic salts	Potassium chloride	200.00	2000.00	200.00
	Potassium dihydrogen phosphate	200.00	2000.00	200.00
	Sodium chloride	8000.00	80000.00	8000.00
	di-Sodium hydrogen phosphate anhydrous	1150.00	11500.00	1150.00
Other Components	EDTA (0,02 %)			1.91
	Thimerosal (0,01 %)			0.95
	Weight (g / L)	9.55	95.50	9.55

RPMI 1640 Media

	Components	A1959	A1339	A1960	A1538	A2040	A3135
Inorganic salts	Calcium chloride x 2H ₂ O	62.27	62.27	62.27	62.27	62.27	62.27
	Magnesium sulfate dried	69.77	69.77	69.77	69.77	69.77	69.77
	Potassium chloride	400.00	400.00	400.00	400.00	400.00	400.00
	Sodium chloride	5950.49	5950.49	5450.49	5450.49	5950.49	5950.49
	di-Sodium hydrogen phosphate	800.00	800.00	800.00	800.00	800.00	800.00
	Sodium nitrate	72.00	72.00	72.00	72.00	72.00	72.00
Other Components	D(+)-Glucose anhydrous	2000.00	2000.00	2000.00	2000.00	2000.00	2000.00
	HEPES			5958.00	5958.00		
	Glutathione (red.)	1.00	1.00	1.00	1.00	1.00	1.00
	Phenol red	5.00	5.00	5.00	5.00		
Amino acids	L-Arginine x HCl	241.86	241.86	241.86	241.86	241.86	241.86
	L-Asparagine x H ₂ O	50.00	50.00	50.00	50.00	50.00	50.00
	L-Aspartic acid	20.00	20.00	20.00	20.00	20.00	20.00
	L-Cystine	50.00	50.00	50.00	50.00	50.00	50.00
	L-Glutamic acid anhydrous	20.00	20.00	20.00	20.00	20.00	20.00
	L-Glutamine	0	300.00	0	300.00	0	300.00
	Glycine	10.00	10.00	10.00	10.00	10.00	10.00
	L-Histidine Base	15.00	15.00	15.00	15.00	15.00	15.00
	L-Hydroxyproline	20.00	20.00	20.00	20.00	20.00	20.00
	L-Isoleucine	50.00	50.00	50.00	50.00	50.00	50.00
	L-Leucine	50.00	50.00	50.00	50.00	50.00	50.00
	L-Lysine x HCl	40.00	40.00	40.00	40.00	40.00	40.00
	L-Methionine	15.00	15.00	15.00	15.00	15.00	15.00
	L-Phenylalanine	15.00	15.00	15.00	15.00	15.00	15.00
	L-Proline	20.00	20.00	20.00	20.00	20.00	20.00
	L-Serine	30.00	30.00	30.00	30.00	30.00	30.00
	L-Threonine	20.00	20.00	20.00	20.00	20.00	20.00
	L-Tryptophan	5.00	5.00	5.00	5.00	5.00	5.00
	L-Tyrosine	20.00	20.00	20.00	20.00	20.00	20.00
	L-Valine	20.00	20.00	20.00	20.00	20.00	20.00
Vitamins	p-Aminobenzoic acid	1.00	1.00	1.00	1.00	1.00	1.00
	D(+)-Biotin	0.20	0.20	0.20	0.20	0.20	0.20
	D-Calcium pantothenate	0.25	0.25	0.25	0.25	0.25	0.25
	Choline chloride	3.00	3.00	3.00	3.00	3.00	3.00
	Folic acid	1.00	1.00	1.00	1.00	1.00	1.00
	myo-Inositol	35.00	35.00	35.00	35.00	35.00	35.00
	Nicotinamide	1.00	1.00	1.00	1.00	1.00	1.00
	Pyridoxine x HCl	1.00	1.00	1.00	1.00	1.00	1.00
	Riboflavin	0.20	0.20	0.20	0.20	0.20	0.20
	Thiamine x HCl	1.00	1.00	1.00	1.00	1.00	1.00
	Vitamin B ₁₂	0.005	0.005	0.005	0.005	0.005	0.005
	Weight (g / L)	10.12	10.42	15.57	15.87	10.11	10.41

Click-RPMI - Media

	Components	A2044	A2504
Inorganic salts	Calcium chloride x 2H ₂ O	114.39	114.39
	Magnesium sulfate dried	104.74	104.74
	Potassium chloride	400.00	400.00
	Potassium dihydrogen phosphate	30.00	30.00
	Sodium chloride	6982.77	6982.77
	di-Sodium hydrogen phosphate	425.00	425.00
	Sodium nitrate	25.06	25.06
Other Components	D(+)-Glucose anhydrous	1500.00	1500.00
	Glutathione (red.)	0.50	0.50
	Phenol red	7.50	7.50
Amino acids	L-Alanine	17.80	17.80
	L-Arginine	157.50	157.50
	L-Arginine x HCl	100.00	100.00
	L-Asparagine x H ₂ O	51.40	51.40
	L-Aspartic acid	36.60	36.60
	L-Cystine	55.00	55.00
	L-Glutamic acid anhydrous	39.40	39.40
	L-Glutamine	0	442.00
	Glycine	20.00	20.00
	L-Histidine Base	7.50	7.50
	L-Histidine x HCl x H ₂ O	55.30	55.30
	L-Hydroxyproline	10.00	10.00
	L-Isoleucine	90.00	90.00
	L-Leucine	90.00	90.00
	L-Lysine x HCl	111.30	111.30
	L-Methionine	26.30	26.30
	L-Phenylalanine	47.50	47.50
	L-Proline	33.00	33.00
	L-Serine	36.00	36.00
	L-Threonine	70.00	70.00
	L-Tryptophan	15.00	15.00
	L-Tyrosine	55.00	55.00
	L-Valine	67.50	67.50
Vitamins	p-Aminobenzoic acid	0.50	0.50
	D(+)-Biotin	0.10	0.10
	D-Calcium pantothenate	1.12	1.12
	Choline chloride	2.50	2.50
	Folic acid	1.50	1.50
	myo-Inositol	19.50	19.50
	Nicotinamide	1.50	1.50
	Pyridoxal x HCl	1.00	1.00
	Pyridoxine x HCl	0.50	0.50
	Riboflavin	0.20	0.20
	Thiamine x HCl	1.50	1.50
Ribonucleosides	Adenosine	12.50	12.50
	Cytosine	12.50	12.50
	Guanosine	12.50	12.50
	Uridine	12.50	12.50
	Weight (g / L)	10.86	11.30

Schneider's Drosophila - Media

	Components	A2036	A1533
Inorganic salts	Magnesium sulfate dried	2585.71	2585.71
	Potassium chloride	1600.00	1600.00
	Potassium dihydrogen phosphate	450.00	450.00
	Sodium chloride	2100.00	2100.00
	di-Sodium hydrogen phosphate	700.00	700.00
Other Components	D(+)-Glucose anhydrous	2000.00	2000.00
	Fumaric acid	60.00	60.00
	α -Ketoglutaric acid sodium salt	402.66	402.66
	DL-Malic acid	600.00	600.00
	Succinic acid	60.00	60.00
	Trehalose x 2H ₂ O	2210.00	2210.00
	Yeast extract	2000.00	2000.00
Amino acids	β -Alanine	500.00	500.00
	L-Arginine Base	600.00	600.00
	L-Aspartic acid	400.00	400.00
	L-Cysteine	60.00	60.00
	L-Cystine	16.60	16.60
	L-Glutamic acid anhydrous	800.00	800.00
	L-Glutamine	0	1800.00
	Glycine	250.00	250.00
	L-Histidine Base	400.00	400.00
	L-Isoleucine	150.00	150.00
	L-Leucine	150.00	150.00
	L-Lysine x HCl	1650.00	1650.00
	L-Methionine	150.00	150.00
	L-Proline	1700.00	1700.00
	L-Serine	250.00	250.00
	L-Threonine	350.00	350.00
	L-Tryptophan	100.00	100.00
	L-Tyrosine	500.00	500.00
	L-Valine	300.00	300.00
	Weight (g / L)	23.09	24.84
Comment	Before dissolving the Schneider's Drosophila - Medium		
	you have to add 794,76 mg/L CaCl ₂ 2H ₂ O to the water!		

TC-100 - Media

	Components	A2033	A2017
Inorganic salts	Calcium chloride x 2H ₂ O	1298.11	1298.11
	Magnesium chloride x 6H ₂ O	2282.59	2282.59
	Magnesium sulfate dried	1957.14	1957.14
	Potassium chloride	2900.00	2900.00
	Sodium dihydrogen phosphate x H ₂ O	970.00	970.00
Other Components	D(+)-Glucose anhydrous	1000.00	1000.00
	Bacto - Tryptose	2600.00	2600.00
Amino acids	L-Alanine	225.00	225.00
	L-Arginine Base	550.00	550.00
	L-Asparagine x H ₂ O	391.97	391.97
	L-Aspartic acid	350.00	350.00
	L-Cystine	20.00	20.00
	L-Glutamic acid anhydrous	600.00	600.00
	L-Glutamine	0	600.00
	Glycine	650.00	650.00
	L-Histidine x HCl x H ₂ O	3400.00	3400.00
	L-Isoleucine	50.00	50.00
	L-Leucine	75.00	75.00
	L-Lysine x HCl	630.00	630.00
	L-Methionine	50.00	50.00
	L-Phenylalanine	150.00	150.00
	L-Proline	350.00	350.00
	L-Serine	550.00	550.00
	L-Threonine	180.00	180.00
	L-Tryptophan	100.00	100.00
	L-Tyrosine	55.00	55.00
	L-Valine	100.00	100.00
Vitamins	p-Aminobenzoic acid	0.02	0.02
	D(+)-Biotin	0.01	0.01
	D-Calcium pantothenate	0.11	0.11
	Folic acid	0.02	0.02
	myo-Inositol	0.02	0.02
	Nicotinic acid	0.02	0.02
	Pyridoxine x HCl	0.02	0.02
	Riboflavin	0.02	0.02
	Thiamine x HCl	0.02	0.02
	Vitamin B ₁₂	0.01	0.01
	Weight (g / L)	21.49	22.09

TNM-FH - Media

	Components	A2037	A1570
Inorganic salts	Calcium chloride x 2H ₂ O	1324.60	1324.60
	Magnesium chloride x 6H ₂ O	2278.86	2278.86
	Magnesium sulfate dried	1939.80	1939.80
	Potassium chloride	2240.00	2240.00
	di-Sodium hydrogen phosphate	876.92	876.92
Other Components	D(+)-Glucose anhydrous	700.00	700.00
	D(-)-Fructose	400.00	400.00
	Fumaric acid	55.00	55.00
	α-Ketoglutaric acid sodium salt	425.66	425.66
	Lactalbumin Hydrolysate	3333.33	3333.33
	DL-Malic acid	670.00	670.00
	Succinic acid	60.00	60.00
	D(+)-Sucrose	26680.00	26680.00
	Yeast extract	3333.33	3333.33
Amino acids	L-Alanine	200.00	200.00
	L-Arginine x HCl	700.00	700.00
	L-Asparagine x H ₂ O	350.00	350.00
	L-Aspartic acid	350.00	350.00
	L-Cystine	19.18	19.18
	L-Glutamic acid anhydrous	600.00	600.00
	L-Glutamine	0	600.00
	Glycine	650.00	650.00
	L-Histidine Base	2500.00	2500.00
	L-Isoleucine	50.00	50.00
	L-Leucine	75.00	75.00
	L-Lysine x HCl	625.00	625.00
	L-Methionine	50.00	50.00
	L-Phenylalanine	150.00	150.00
	L-Proline	350.00	350.00
	L-Serine	550.00	550.00
	L-Threonine	175.00	175.00
	L-Tryptophan	100.00	100.00
	L-Tyrosine	50.00	50.00
	L-Valine	100.00	100.00
Vitamins	p-Aminobenzoic acid	0.02	0.02
	D(+)-Biotin	0.01	0.01
	D-Calcium pantothenate	0.02	0.02
	Choline chloride	0.20	0.20
	Folic acid	0.02	0.02
	myo-Inositol	0.02	0.02
	Nicotinic acid	0.02	0.02
	Pyridoxine x HCl	0.02	0.02
	Riboflavin	0.02	0.02
	Thiamine x HCl	0.02	0.02
	Weight (g / L)	52.19	52.79

Waymouth's MB 752/1 - Media

	Components	A1973	A1527	A1981	A1961
Inorganic salts	Calcium chloride x 2H ₂ O	120.02	120.02	120.02	120.02
	Magnesium chloride x 6H ₂ O	240.00	240.00	240.00	240.00
	Magnesium sulfate dried	130.96	130.96	130.96	130.96
	Potassium chloride	150.00	150.00	150.00	150.00
	Potassium dihydrogen phosphate	80.00	80.00	80.00	80.00
	Sodium chloride	6000.00	6000.00	5500.00	5500.00
	di-Sodium hydrogen phosphate anhydrous	300.00	300.00	300.00	300.00
Other Components	D(+)-Glucose anhydrous	5000.00	5000.00	5000.00	5000.00
	HEPES			4766.40	4766.40
	Glutathione (red.)	15.00	15.00	15.00	15.00
	Hypoxanthine	25.00	25.00	25.00	25.00
Amino acids	Phenol red	10.00	10.00	10.00	10.00
	L-Arginine x HCl	75.00	75.00	75.00	75.00
	L-Aspartic acid	60.00	60.00	60.00	60.00
	L-Cysteine x HCl x H ₂ O	100.26	100.26	100.26	100.26
	L-Cystine	15.00	15.00	15.00	15.00
	L-Glutamic acid anhydrous	150.00	150.00	150.00	150.00
	L-Glutamine	0	350.00	0	350.00
	L-Glycine	50.00	50.00	50.00	50.00
	L-Histidine x HCl x H ₂ O	164.10	164.10	164.10	164.10
	L-Isoleucine	25.00	25.00	25.00	25.00
	L-Leucine	50.00	50.00	50.00	50.00
	L-Lysine x HCl	240.00	240.00	240.00	240.00
	L-Methionine	50.00	50.00	50.00	50.00
	L-Phenylalanine	50.00	50.00	50.00	50.00
	L-Proline	50.00	50.00	50.00	50.00
	L-Threonine	75.00	75.00	75.00	75.00
	L-Tryptophan	40.00	40.00	40.00	40.00
	L-Tyrosine	40.00	40.00	40.00	40.00
	L-Valine	65.00	65.00	65.00	65.00
Vitamins	L-Ascorbic acid	17.50	17.50	17.50	17.50
	D(+)-Biotin	0.02	0.02	0.02	0.02
	D-Calcium pantothenate	1.00	1.00	1.00	1.00
	Choline chloride	250.00	250.00	250.00	250.00
	Folic acid	0.40	0.40	0.40	0.40
	myo-Inositol	1.00	1.00	1.00	1.00
	Nicotinamide	1.00	1.00	1.00	1.00
	Pyridoxine x HCl	1.00	1.00	1.00	1.00
	Riboflavin	1.00	1.00	1.00	1.00
	Thiamine x HCl	10.00	10.00	10.00	10.00
	Vitamin B ₁₂	0.20	0.20	0.20	0.20
	Weight (g / L)	13.65	14.00	17.92	18.27

William's Media E

	Components	A1309	A1910	A1966	A1962	A3029
Inorganic salts	Calcium chloride x 2H ₂ O	264.92	264.92	264.92	264.92	264.92
	Copper(II)-sulfate x 5H ₂ O	0.0001	0.0001	0.0001	0.0001	0.0001
	Iron(III)-nitrate x 9H ₂ O	0.0001	0.0001	0.0001	0.0001	0.0001
	Magnesium sulfate dried	139.57	139.57	139.57	139.57	127.01
	Manganese chloride x 4H ₂ O	0.0001	0.0001	0.0001	0.0001	0.0001
	Potassium chloride	400.00	400.00	400.00	400.00	400.00
	Sodium chloride	6800.00	6800.00	6300.00	6300.00	6800.00
	Sodium dihydrogen phosphate x H ₂ O	140.00	140.00	140.00	140.00	140.00
	Zinc sulfate x 7H ₂ O	0.0002	0.0002	0.0002	0.0002	0.0002
Other Components	D(+)-Glucose anhydrous	2000.00	2000.00	2000.00	2000.00	2000.00
	HEPES			5958.00	5958.00	
	Glutathione (red.)	0.05	0.05	0.05	0.05	0.05
	Methylinoate	0.03	0.03	0.03	0.03	0.03
	Phenol red	10.00	10.00	10.00	10.00	
	Sodium pyruvate	25.00	25.00	25.00	25.00	25.00
Amino acids	L-Alanine	90.00	90.00	90.00	90.00	90.00
	L-Arginine Base	50.00	50.00	50.00	50.00	50.00
	L-Asparagine x H ₂ O	20.00	20.00	20.00	20.00	20.00
	L-Aspartic acid	30.00	30.00	30.00	30.00	30.00
	L-Cysteine	40.00	40.00	40.00	40.00	40.00
	L-Cystine	20.00	20.00	20.00	20.00	20.00
	L-Glutamic acid anhydrous	50.00	50.00	50.00	50.00	50.00
	L-Glutamine	0	292.00	0	292.00	0
	Glycine	50.00	50.00	50.00	50.00	50.00
	L-Histidine Base	15.00	15.00	15.00	15.00	15.00
	L-Isoleucine	50.00	50.00	50.00	50.00	50.00
	L-Leucine	75.00	75.00	75.00	75.00	75.00
	L-Lysine x HCl	87.50	87.50	87.50	87.50	87.50
	L-Methionine	15.00	15.00	15.00	15.00	15.00
	L-Phenylalanine	25.00	25.00	25.00	25.00	25.00
	L-Proline	30.00	30.00	30.00	30.00	30.00
	L-Serine	10.00	10.00	10.00	10.00	10.00
	L-Threonine	40.00	40.00	40.00	40.00	40.00
	L-Tryptophan	10.00	10.00	10.00	10.00	10.00
	L-Tyrosine	35.00	35.00	35.00	35.00	35.00
	L-Valine	50.00	50.00	50.00	50.00	50.00
Vitamins	L-Ascorbic acid	2.00	2.00	2.00	2.00	2.00
	D(+)-Biotin	0.50	0.50	0.50	0.50	0.50
	Calciferol	0.10	0.10	0.10	0.10	0.10
	D-Calcium pantothenate	1.00	1.00	1.00	1.00	1.00
	Choline chloride	1.50	1.50	1.50	1.50	1.50
	Folic acid	1.00	1.00	1.00	1.00	1.00
	myo-Inositol	2.00	2.00	2.00	2.00	2.00
	Menadione sodium bisulfite	0.01	0.01	0.01	0.01	0.01
	Nicotinamide	1.00	1.00	1.00	1.00	1.00
	Pyridoxal x HCl	1.00	1.00	1.00	1.00	1.00
	Riboflavin	0.10	0.10	0.10	0.10	0.10
	Thiamine x HCl	1.00	1.00	1.00	1.00	1.00
	DL- α -Tocopherolphosphate-Na ₂	0.01	0.01	0.01	0.01	0.01
	Vitamin A acetate	0.10	0.10	0.10	0.10	0.10
	Vitamin B ₁₂	0.20	0.20	0.20	0.20	0.20
	Weight (g / L)	10.58	10.88	16.04	16.33	10.57

A	$\alpha 20^{\circ}\text{C}/\text{D}$	specific rotation at the sodium D-line (20°C)
	A	Absorption
	AAS	Atomic absorption spectrometry
	Å	Angstrom
	abs.	absolute
	acidimetr.	acidimetric
	alk.	alkaline
	anhydr.	anhydrous
	APHA	American Public Health Association
	approx.	approximately
B	arom.	aromatic
	bidist.	bidistilled
	Bp	Boiling point
	BP 88	British Pharmacopeia 88
C	bp	base pair
	$^{\circ}\text{C}$	Degree Celsius
	cal.	calculated
	C.I.	Color Index
	CAS	Chemical Abstracts Service
	CMC	critical micellar concentration
	coag.	coagulated
	COD	Chemical Oxygen Demand
	complexometr.	complexometrical
	consum.	consuming
D	CT	Cubitainer
	D	Sodium D-Line
	d	Density
	dec.	Decomposition
	DAB	Deutsches Arzneibuch
	DAD	Digital Array Detector
	DNA	Deoxyribonucleic acid
	DMC-U	Dimethyl casein units
	DNase	Deoxyribonuclease
	dNTPs	Deoxyribonucleotide triphosphates
E	DVB	Divinyl benzene
	E 1 %/1 cm	Extinction of 1 % solution (layer thickness 1 cm)
	E.C.	Enzyme Commission
	ECD	Electron Capture Detector
	EEO	Electroendosmosis
	e. g.	exemplum gratia (for instance)
	EC	European Community
	enzym.	enzymatical
	equil.	equilibrated
	evap.	evaporation
F	FID	Flame ionisation detector
	FIP	Fédération Internationale Pharmaceutique
G	g	gram
	GC	Gas chromatography
	GDU	Gelatin Digesting Units
	GL	Brown glass bottle
	GPC	Gel permeation chromatography
	gravimetr.	gravimetric
H	h	hour
	hPa	hectopascal
	HPLC	High-performance liquid chromatography
	HS-No.	Customs tariff code number
I	IC50	half maximum inhibiting concentration
	ICP	Induction Coupled Plasma
	ICP-MS	Induction Coupled Plasma mass spectroscopy
	iodometr.	iodometrical
	incl.	inclusive
	IR	Infrared spectroscopy
K	IU	International units
	K.F.	Karl Fischer titration
	kb	Kilobases (DNA/RNA)
	kd	Kilodalton
	kg	Kilogram
	KIU	Kallikrein Inhibitory Units
L	L	Liter
	LD50	half maximum lethal dose
	λ_{max}	Wave length of maximum absorption in nm
	LGK	Storage class

M	M	molecular weight
	M	molarity
	m^3	cubic meter
	max.	maximum
	meq	milliequivalent
	mg	milligram
	μg	microgram
	Min.	minute
	min.	minimum
	ml	milliliter
	mM	millimol
	mm	millimeter
	MS	mass spectrometry
N	μm	micrometer
	μM	micromol
	μS	microsiemens
	N	normality
	n	refraction index
	ng	nanogram
	nM	nanomol
	nm	nanometer
	NMR	Nuclear magnetic resonance spectroscopy
	No.	number
	NPD	Nitrogen Phosphate Detector
	nwg	nicht wassergefährdend
O	opt.	optimal
	org.	organic
	oxid.	oxidized
P	PAGE	Polyacrylamide gel electrophoresis
	PE	Polyethylene
	PG	Packing Group
	pg	picogram
	pH	negative logarithm to base 10 of the hydrogen ion concentration
	Ph. Eur.	Pharmacopoeia Europaea
	photometr.	photometric
	pKa	acidic strength
	PND	Phosphorous-Nitrogen-Detector
	ppb	parts per billion
	ppm	parts per million
	precip.	precipitable
	preps	preparations
	Prod.	Product
	prim.	primary
R	R	risk phrase
	react.	reacting
	red.	reducing
	Res.	residue
	RNase	Ribonuclease
	RNA	Ribonucleic acid
	RT	room temperature
	RZ	Reinheitszahl
S	S	safety phrase
	sec.	secondary
	Sol.	solution
	spec.	species
	spec.	specific
	Subst.	substances
T	TLC	Thin Layer Chromatography
	tert.	tertiary
	titr.	titrimetric
	®	trademark
U	U	Unit(s)
	UN	United Nations
	UV	Ultraviolet spectroscopy
	UV/VIS	UV/visible spectroscopy
	USP	The United States Pharmacopeia
V	VbF	German classification of flammable liquids
	v/v	volume/volume
W	w/v	weight/volume
	WGK [*]	German classification of water pollution risk degree

Element	Symbol	Atomic Weight
Actinium	Ac	227,0278
Aluminium	Al	26,98154
Americium	Am	-243
Antimony	Sb	121,75
Argon	Ar	39,948
Arsenic	As	74,9216
Astatine	At	-210
Barium	Ba	137,33
Berkelium	Bk	-247
Beryllium	Be	9,01218
Bismuth	Bi	208,9804
Boron	B	10,81
Bromine	Br	79,904
Cadmium	Cd	112,41
Calcium	Ca	40,08
Californium	Cf	-251
Carbon	C	12,011
Cerium	Ce	140,12
Cesium	Cs	132,9054
Chlorine	Cl	35,453
Chromium	Cr	51,996
Cobalt	Co	58,9332
Copper	Cu	63,546
Curium	Cm	-246
Dysprosium	Dy	162,5
Einsteinium	Es	-252
Erbium	Er	167,26
Europium	Eu	151,96
Fermium	Fm	-257
Fluorine	F	18,998403
Francium	Fr	-223
Gadolinium	Gd	157,25
Gallium	Ga	69,72
Germanium	Ge	72,59
Gold	Au	196,9665
Hafnium	Hf	178,49
Helium	He	4,0026
Holmium	Ho	164,9304
Hydrogen	H	1,0079
Indium	In	114,82
Iodine	I	126,9045
Iridium	Ir	192,22
Iron	Fe	55,847
Krypton	Kr	83,8
Lanthanum	La	138,9055
Lawrencium	Lr	-260
Lead	Pb	207,2
Lithium	Li	6,941
Lutetium	Lu	174,967
Magnesium	Mg	24,305
Manganese	Mn	54,938
Mendelevium	Md	-258

Element	Symbol	Atomic Weight
Mercury	Hg	200,59
Molybdenum	Mo	95,94
Neodymium	Nd	144,24
Neon	Ne	20,179
Neptunium	Np	237,0482
Nickel	Ni	58,69
Niobium	Nb	92,9064
Nitrogen	N	14,0067
Nobelium	No	-259
Osmium	Os	190,2
Oxygen	O	15,9994
Palladium	Pd	106,42
Phosphorus	P	30,97376
Platinum	Pt	195,08
Plutonium	Pu	-244
Polonium	Po	-209
Potassium	K	39,0983
Praseodymium	Pr	140,9077
Promethium	Pm	-145
Protactinium	Pa	231,0359
Radium	Ra	226,0254
Radon	Rn	-222
Rhenium	Re	186,207
Rhodium	Rh	102,9055
Rubidium	Rb	85,4678
Ruthenium	Ru	101,07
Samarium	Sm	150,36
Scandium	Sc	44,9559
Selenium	Se	78,96
Silicon	Si	28,0855
Silver	Ag	107,868
Sodium	Na	22,98977
Strontium	Sr	87,62
Sulfur	S	32,06
Tantalum	Ta	180,9479
Technetium	Tc	-98
Tellurium	Te	127,6
Terbium	Tb	158,9254
Thallium	Tl	204,383
Thorium	Th	232,0381
Thulium	Tm	168,9342
Tin	Sn	118,69
Titanium	Ti	47,88
Tungsten	W	183,85
Uranium	U	238,0289
Vanadium	V	50,9415
Xenon	Xe	131,29
Ytterbium	Yb	173,04
Yttrium	Y	88,9059
Zinc	Zn	65,38
Zirconium	Zr	91,22

GHS / CLP - a new regulation for the labelling of chemicals.

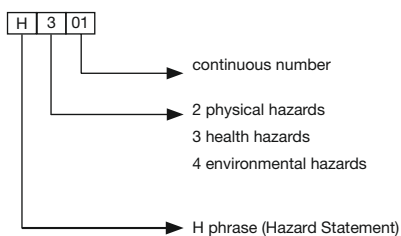
New: Hazardous chemicals are labelled with a „signal word“. This word indicates the relative level of severity of hazards to alert the reader to a potential hazard. The following two levels were introduced:

Danger

Warning

The signal word „Danger“ indicates the more severe hazard categories, while „Warning“ is applied for the less severe hazard categories.

The Hazard statements in the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) categorize into physical, health and environmental hazards.



The type of hazard is described by hazard classes. Generally these are subdivided into hazard categories which express the level of hazardousness. Altogether the GHS comprises 16 classes for physical-chemical hazards, 10 classes for health hazards, and one class for hazards to the aquatic environment.

Physical hazards			
Hazard classes and hazard categories	Hazard pictogram	H-Phrase	Signal word
Explosives - Unstable explosives, mixtures - Explosives of Devision 1.1 – 1.3 Self-reactive substances and mixtures, type A,B Organic peroxides type A, B Explosives, mixtures and articles which present no significant hazard, Devision 4		H200 H201, H202, H203 H240, H241 H240, H241 H204	Danger Warning
Flammable gases, category 1 Flammable aerosols, category 1 Flammable liquids, category 1 Flammable liquids, category 2 Flammable solids, category 1 Flammable solids, category 2 Flammable aerosols, category 2 Flammable liquids, category 3		H220 H222 H224 H225 H228 H228 H223 H226	Danger Warning

Physical hazards			
Hazard classes and hazard categories	Hazard pictogram	H-Phrase	Signal word
Pyrophoric liquids, category 1 Pyrophoric solids, category 1 Substances or mixtures which in contact with water emit flammable gases, category 1, 2 and category 3 Self-reactive substances and mixtures, Typ B Self-reactive substances and mixtures, Typ C, D and type E, F Self-heating substances and mixtures, category 1 and 2		H250 H250 H260 H261 H261 H241 H242 H242 H251 H252	Danger Warning Danger Warning Danger Warning
Oxidising gases, category 1 Oxidising liquids, category 1, 2 and 3 Oxidising solids, category 1, 2 und 3		H270 H271, H272 H272 H271, H272 H272	Danger Warning Danger Warning
Gases under pressure - Compressed gases - Liquefied gases - Refrigerated liquefied gases - Dissolved gases		H280 H280 H281 H280	Warning
Substances and mixtures corrosive to metals, category 1		H290	Warning

Health hazards			
Hazard classes and hazard categories	Hazard pictogram	H-Phrase	Signal word
Acute toxicity, category 1, 2 • Oral • Dermal • Inhalation Acute toxicity, category 3 • Oral • Dermal • Inhalation		H300 H310 H330 H301 H311 H331	Danger
Germ cell mutagenicity, category 1A, 1B Carcinogenicity , category 1A, 1B Reproductive toxicity, category 1A, 1B Specific target organ toxicity after single exposure, category 1 Specific target organ toxicity after repeated exposure, category 1 Respiratory sensitisation, category 1 Aspiration toxicity, category 1 Germ cell mutagenicity, category 2 Carcinogenicity , category 2 Reproductive toxicity, category 2 Specific target organ toxicity after single exposure, category 2 Specific target organ toxicity after repeated exposure, category 2		H340 H350 H360 H370 H372 H373 H341 H351 H361 H371 H373	Danger Warning
Acute toxicity, category 4 • Oral • Dermal • Inhalation Skin irritation, category 2 Serious eye irritation, category 2 Skin sensitisation, category 1 Specific target organ toxicity after single exposure, category 3 • Respiratory irritation • Drowsiness or dizziness		H302 H312 H332 H315 H319 H317 H335 H336	Warning
Skin corrosion, category 1A, 1B, 1C Serious eye damage, category 1		H314 H318	Danger
Hazardous to the aquatic environment			
Acute aquatic toxicity, category 1 Chronic aquatic toxicity, category 1 Chronic aquatic toxicity, category 1		H400 H410 H411	Warning Without signal word

Hazard statements (H-Phrases)**Hazard statements - Physical hazards**

H200	Unstable explosives.
H201	Explosive; mass explosion hazard.
H202	Explosive, severe projection hazard.
H203	Explosive; fire, blast or projection hazard.
H204	Fire or projection hazard.
H205	May mass explode in fire.
H220	Extremely flammable gas.
H221	Flammable gas.
H222	Extremely flammable aerosol.
H223	Flammable aerosol.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H228	Flammable solid.
H240	Heating may cause an explosion.
H241	Heating may cause a fire or explosion.
H242	Heating may cause a fire.
H250	Catches fire spontaneously if exposed to air.
H251	Self-heating: may catch fire.
H252	Self-heating in large quantities; may catch fire.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H261	In contact with water releases flammable gases.
H270	May cause or intensify fire; oxidiser.
H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.
H281	Contains refrigerated gas; may cause cryogenic burns or injury.
H290	May be corrosive to metals.

Hazard statements - Health hazards

H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H350i	May cause cancer by inhalation.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H360D	May damage the unborn child.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H360F	May damage fertility.
H360FD	May damage fertility. May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.

H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H362	May cause harm to breast-fed children.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.

Hazard statements - Environmental hazards

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Hazard statements - EU

EUH001	Explosive when dry.
EUH006	Explosive with or without contact with air.
EUH014	Reacts violently with water.
EUH018	In use may form flammable/explosive vapour-air mixture.
EUH019	May form explosive peroxides.
EUH029	Contact with water liberates toxic gas.
EUH031	Contact with acids liberates toxic gas.
EUH032	Contact with acids liberates very toxic gas.
EUH044	Risk of explosion if heated under confinement.
EUH059	Hazardous to the ozone layer.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH070	Toxic by eye contact.
EUH071	Corrosive to the respiratory tract.
EUH201/201A	Contains lead. Should not be used on surfaces liable to be chewed or sucked by children. Warning! Contains lead.
EUH202	Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
EUH203	Contains chromium (VI). May produce an allergic reaction.
EUH204	Contains isocyanates. May produce an allergic reaction.
EUH205	Contains epoxy constituents. May produce an allergic reaction.
EUH206	Warning! Do not use together with other products. May release dangerous gases (chlorine).
EUH207	Warning! Contains cadmium. Dangerous fumes are formed during use.
	See information supplied by the manufacturer. Comply with the safety instructions.
EUH208	May produce an allergic reaction.
EUH209/209A	Can become highly flammable in use. Can become flammable in use.
EUH210	Safety data sheet available on request.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements (P-Statements)

The missing information (marked ...) is filled out by the supplier.

Precautionary statements - General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.

Precautionary statements - Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211	Do not spray on an open flame or other ignition source.
P220	Keep/Store away from clothing/.../combustible materials.
P221	Take any precaution to avoid mixing with combustibles...
P222	Do not allow contact with air.
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P230	Keep wetted with...
P231	Handle under inert gas.
P231+P232	Handle under inert gas. Protect from moisture.
P232	Protect from moisture.
P233	Keep container tightly closed.
P234	Keep only in original container.

P235	Keep cool.
P235+P410	Keep cool. Protect from sunlight.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/.../equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P244	Keep reduction valves free from grease and oil.
P250	Do not subject to grinding/shock/.../friction.
P251	Pressurized container: Do not pierce or burn, even after use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.
P263	Avoid contact during pregnancy/while nursing.
P264	Wash ... thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P282	Wear cold insulating gloves/face shield/eye protection.
P283	Wear fire/flammable resistant/retardant clothing.
P284	Wear respiratory protection.
P285	In case of inadequate ventilation wear respiratory protection.

Precautionary statements - Response

P301	IF SWALLOWED:
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302	IF ON SKIN:
P302+P334	IF ON SKIN: Immerse in cool water/wrap in wet bandages.
P302+P350	IF ON SKIN: Gently wash with plenty of soap and water.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303	IF ON SKIN (or hair):
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304	IF INHALED:
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305	IF IN EYES:
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P306	IF ON CLOTHING:
P306+P360	IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P307	IF exposed:
P307+P311	IF exposed: Call a POISON CENTER or doctor/physician.
P308	IF exposed or concerned:
P308+P313	IF exposed or concerned: Get medical advice/attention.
P309	IF exposed or if you feel unwell:
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P310	Immediately call a POISON CENTER or doctor/physician.
P311	Call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P313	Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P315	Get immediate medical advice/attention.
P320	Specific treatment is urgent (see ... on this label).
P321	Specific treatment (see ... on this label).
P322	Specific measures (see ... on this label).
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P332	If skin irritation occurs:
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333	If skin irritation or rash occurs:
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.

P334	Immerse in cool water/wrap in wet bandages.
P335	Brush off loose particles from skin.
P335+P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P336	Thaw frosted parts with lukewarm water. Do no rub affected area.
P337	If eye irritation persists:
P337+P313	If eye irritation persists: Get medical advice/attention.
P338	Remove contact lenses, if present and easy to do. Continue rinsing.
P340	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P341	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342	If experiencing respiratory symptoms:
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P350	Gently wash with plenty of soap and water.
P351	Rinse cautiously with water for several minutes.
P352	Wash with plenty of soap and water.
P353	Rinse skin with water/shower.
P360	Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P361	Remove/Take off immediately all contaminated clothing.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P370	In case of fire:
P370+P376	In case of fire: Stop leak if safe to do so.
P370+P378	In case of fire: Use ... for extinction.
P370+P380	In case of fire: Evacuate area.
P370+P380+P375	In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
P371	In case of major fire and large quantities:
P371+P380+P375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P372	Explosion risk in case of fire.
P373	DO NOT fight fire when fire reaches explosives.
P374	Fight fire with normal precautions from a reasonable distance.
P375	Fight fire remotely due to the risk of explosion.
P376	Stop leak if safe to do so.
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P378	Use ... for extinction.
P380	Evacuate area.
P381	Eliminate all ignition sources if safe to do so.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.

Precautionary statements - Storage

P401	Store
P402	Store in a dry place.
P402+P404	Store in a dry place. Store in a closed container.
P403	Store in a well-ventilated place.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P404	Store in a closed container.
P405	Store locked up.
P406	Store in corrosive resistant/... container with a resistant inner liner.
P407	Maintain air gap between stacks/pallets.
P410	Protect from sunlight.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P411	Store at temperatures not exceeding ... °C/... °F.
P411+P235	Store at temperatures not exceeding ... °C/... °F. Keep cool.
P412	Do not expose to temperatures exceeding 50°C/122°F.
P413	Store bulk masses greater than ... kg/... lbs at temperatures not exceeding ... °C/... °F.
P420	Store away from other materials.
P422	Store contents under ...

Precautionary statements - Disposal

P501	Dispose of contents/container to ...

Risk and safety phrases

All AppliChem - articles are classified with regard to their qualities.

In the member states of the European Community dangerous substances must be identified.

In this catalogue the identification follows the valid "Gefahrstoffverordnung" (GefStoffV, Dangerous Substance Regulations).

Substances with known hazards are indicated by hazard symbols and numbers which corresponds to special risk and safety phrases.

The declarations given are in accordance with our current knowledge.

The absence of a hazard symbol or R/S-phrases does not mean, however, that a substance is harmless.

Nature of the special risk (Risk phrases)

R 1	Explosive when dry
R 2	Risk of explosion by shock, friction, fire or other sources of ignition
R 3	Extreme risk of explosion by shock, friction, fire or other sources of ignition
R 4	Forms very sensitive explosive metallic compounds
R 5	Heating may cause an explosion
R 6	Explosive with or without contact with air
R 7	May cause fire
R 8	Contact with combustible material may cause fire
R 9	Explosive when mixed with combustible material
R 10	Flammable
R 11	Highly flammable
R 12	Extremely flammable
R 14	Reacts violently with water
R 15	Contact with water liberates extremely flammable gases
R 16	Explosive when mixed with oxidizing substances
R 17	Spontaneously flammable in air
R 18	In use, may form flammable / explosive vapour-air mixture
R 19	May form explosive peroxides
R 20	Harmful by inhalation
R 21	Harmful in contact with skin
R 22	Harmful if swallowed
R 23	Toxic by inhalation
R 24	Toxic in contact with skin
R 25	Toxic if swallowed
R 26	Very toxic by inhalation
R 27	Very toxic in contact with skin
R 28	Very toxic if swallowed
R 29	Contact with water liberates toxic gas
R 30	Can become highly flammable in use
R 31	Contact with acids liberates toxic gas
R 32	Contact with acids liberates very toxic gas
R 33	Danger of cumulative effects
R 34	Causes burns
R 35	Causes severe burns
R 36	Irritating to eyes
R 37	Irritating to respiratory system
R 38	Irritating to skin
R 39	Danger of very serious irreversible effects
R 40	Limited evidence of a carcinogenic effect
R 41	Risk of serious damage to eyes
R 42	May cause sensitization by inhalation
R 43	May cause sensitization by skin contact
R 44	Risk of explosion if heated under confinement
R 45	May cause cancer
R 46	May cause heritable genetic damage
R 48	Danger of serious damage to health by prolonged exposure
R 49	May cause cancer by inhalation
R 50	Very toxic to aquatic organisms
R 51	Toxic to aquatic organisms
R 52	Harmful to aquatic organisms
R 53	May cause long-term adverse effects in the aquatic environment
R 54	Toxic to flora
R 55	Toxic to fauna
R 56	Toxic to soil organisms
R 57	Toxic to bees
R 58	May cause long-term adverse effects in the environment
R 59	Dangerous for the ozone layer
R 60	May impair fertility
R 61	May cause harm to the unborn child
R 62	Possible risk of impaired fertility
R 63	Possible risk of harm to the unborn child
R 64	May cause harm to breastfed babies
R 65	Harmful: May cause lung damage if swallowed.
R 66	Repeated exposure may cause skin dryness or cracking
R 67	Vapours may cause drowsiness and dizziness
R 68	Possible risk of irreversible effects

Combination of particular risks

R 14/15	Reacts violently with water, liberating extremely flammable gases
R 15/29	Contact with water liberates toxic, extremely flammable gas
R 20/21	Harmful by inhalation and in contact with skin
R 20/22	Harmful by inhalation and if swallowed
R 20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R 21/22	Harmful in contact with skin and if swallowed
R 23/24	Toxic by inhalation and in contact with skin
R 23/25	Toxic by inhalation and if swallowed
R 23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R 24/25	Toxic in contact with skin and if swallowed
R 26/27	Very toxic by inhalation and in contact with skin
R 26/28	Very toxic by inhalation and if swallowed
R 26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R 27/28	Very toxic in contact with skin and if swallowed
R 36/37	Irritating to eyes and respiratory system
R 36/38	Irritating to eyes and skin
R 36/37/38	Irritating to eyes, respiratory system and skin
R 37/38	Irritating to respiratory system and skin
R 39/23	Toxic: danger of very serious irreversible effects through inhalation
R 39/24	Toxic: danger of very serious irreversible effects in contact with skin
R 39/25	Toxic: danger of very serious irreversible effects if swallowed
R 39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R 39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R 39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R 39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation in contact with skin and if swallowed
R 39/26	Very toxic: danger of very serious irreversible effects through inhalation
R 39/27	Very toxic: danger of very serious irreversible effects in contact with skin
R 39/28	Very toxic: danger of very serious irreversible effects if swallowed
R 39/26/27	Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R 39/26/28	Very toxic: danger of very serious irreversible effects through inhalation and if swallowed
R 39/27/28	Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R 39/26/27/28	Very toxic: danger of very serious irreversible effects through inhalation in contact with skin and if swallowed
R 42/43	May cause sensitization by inhalation and skin contact
R 48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R 48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R 48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R 48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R 48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R 48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R 48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation in contact with skin and if swallowed
R 48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R 48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
R 48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R 48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R 48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R 48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R 48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation in contact with skin and if swallowed
R 50/53	Very toxic to aquatic organism, may cause long-term adverse effects in the aquatic environment
R 51/53	Toxic to aquatic organism, may cause long-term adverse effects in the aquatic environment
R 52/53	Harmful to aquatic organism, may cause long-term adverse effects in the aquatic environment
R 68/20	Harmful: possible risk of irreversible effects through inhalation
R 68/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin
R 68/20/21/22	Harmful: possible risk of irreversible effects through inhalation and in contact with skin and if swallowed
R 68/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed
R 68/21	Harmful: possible risk of irreversible effects through in contact with skin
R 68/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed
R 68/22	Harmful: possible risk of irreversible effects if swallowed

Safety Precautions (Safety phrases)

S 1	Keep locked up
S 3	Keep in a cool place
S 4	Keep away from living quarters
S 5	Keep contents under ... (appropriate liquid to be specified by the manufacturer)
S 5.1	Keep contents under water
S 5.2	Keep contents under petroleum
S 5.3	Keep contents under paraffin oil
S 6	Keep under ... (inert gas to be specified by the manufacturer)
S 6.1	Keep under nitrogen
S 6.2	Keep under argon
S 7	Keep container tightly closed
S 8	Keep container dry
S 9	Keep container in a well-ventilated place
S 12	Do not keep the container sealed
S 13	Keep away from food, drink and animal feeding stuffs
S 14	Keep away from ... (incompatible materials to be indicated by the manufacturer)
S 14.1	Keep away from reducing agents, heavy metal compounds, acids and alkalis
S 14.2	Keep away from oxidizing and acidic substances and heavy metal compounds
S 14.3	Keep away from iron

S 14.4	Keep away from water and alkalis
S 14.5	Keep away from acids
S 14.6	Keep away from alkalis
S 14.7	Keep away from metals
S 14.8	Keep away from oxidizing agents and acidic substances
S 14.9	Keep away from flammable organic substances
S 14.10	Keep away from acids, reducing agents and flammable material
S 14.11	Keep away from flammable material
S 15	Keep away from heat
S 16	Keep away from sources of ignition - No Smoking
S 17	Keep away from combustible material
S 18	Handle and open container with care
S 20	When using do not eat or drink
S 21	When using do not smoke
S 22	Do not breathe dust
S 23	Do not breathe gas/fumes/vapour/spray (appropriate according to be specified by manufacturer)
S 23.1	Do not breathe gas
S 23.2	Do not breathe vapour
S 23.3	Do not breathe spray
S 23.4	Do not breathe fumes
S 23.5	Do not breathe vapour/spray
S 24	Avoid contact with skin
S 25	Avoid contact with eyes
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S 27	Take off immediately all contaminated clothing
S 28	After contact with skin, wash immediately with plenty of (to be specified by the manufacturer)
S 28.1	After contact with skin, wash immediately with plenty of water
S 28.2	After contact with skin, wash immediately with plenty of soap and water
S 28.3	After contact with skin, wash immediately with plenty of soap and water, if possible also with polyethyleneglycol 400
S 28.4	After contact with skin, wash immediately with plenty of polyethyleneglycol 300 and ethanol (2:1) followed by plenty of soap and water
S 28.5	After contact with skin, wash immediately with plenty of polyethyleneglycol 400
S 28.6	After contact with skin, wash immediately with plenty of polyethyleneglycol 400, then rinse with plenty of water
S 28.7	After contact with skin, wash immediately with plenty of water and acidic soap
S 29	Do not empty into drains
S 30	Never add water to this product
S 33	Take precautionary measures against static discharges
S 35	This material and its container must be disposed of in a safe way
S 36	Wear suitable protective clothing
S 37	Wear suitable gloves
S 38	In case of insufficient ventilation, wear suitable respiratory equipment
S 39	Wear eye/face protection
S 40	To clean the floor and all objects contaminated by this material use ... (to be specified by the manufacturer)
S 40.1	To clean the floor and all objects contaminated by this material use plenty of water
S 41	In case of fire and/or explosion do not breathe fumes
S 42	During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer)
S 43	In case of fire, use ... (indicate in the space the precise type of fire-fighting equipment. If water increases the risk, never use water)
S 43.1	In case of fire, use water
S 43.2	In case of fire, use water or powder extinguisher
S 43.3	In case of fire, use powder extinguisher - never use water
S 43.4	In case of fire, use carbon dioxide - never use water
S 43.6	In case of fire, use sand - never use water
S 43.7	In case of fire, use metal fire powder - never use water
S 43.8	In case of fire, use sand, carbon dioxide or powder extinguisher - never use water
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
S 46	If swallowed seek medical advice immediately and show this container or label
S 47	Keep at temperature not exceeding ... C (to be specified by the manufacturer)
S 47	Keep at temperature not exceeding 25 C
S 48	Keep wet with ... (appropriate material to be specified by the manufacturer)
S 48.1	Keep wet with water
S 49	Keep only in the original container
S 50	Do not mix with ... (to be specified by the manufacturer)
S 50.1	Do not mix with acids
S 50.2	Do not mix with alkalis
S 50.3	Do not mix with strong acids, strong bases, non-ferrous heavy metals or their salts
S 51	Use only in well ventilated areas
S 52	Not recommended for interior use on large surface areas
S 53	Avoid exposure - obtain special instructions before use. Restricted to professional users
S 56	Dispose of this material and its container at hazardous or special waste collection point
S 57	Use appropriate container to avoid environmental contamination
S 59	Refer to manufacturer/supplier for information on recovery/recycling
S 60	This material and its container must be disposed of as hazardous waste
S 61	Avoid release to the environment. Refer to special instructions/safety data sheet
S 62	If swallowed, do not induce vomiting. seek medical advice immediately and show this container or label
S 63	In case of accident by inhalation: remove casualty to fresh air and keep at rest
S 64	If swallowed, rinse mouth with water (only if the person is conscious)

Combination of safety precautions

S 1/2	Keep locked up and out of reach of children
S 3/7/9	Keep container tightly closed, in a cool well ventilated place
S 3/9/14	Keep in a cool, well ventilated place away from ... (incompatible materials to be indicated by the manufacturer)

S 3/9/14.1	Keep in a cool, well ventilated place away from reducing agents, heavy metal compounds, acids and alkalis
S 3/9/14.2	Keep in a cool, well ventilated place away from oxidizing agents and acidic substances as well as heavy metal compounds
S 3/9/14.3	Keep in a cool, well ventilated place away from iron
S 3/9/14.4	Keep in a cool, well ventilated place away from water and alkalis
S 3/9/14.5	Keep in a cool, well ventilated place away from acids
S 3/9/14.6	Keep in a cool, well ventilated place away from alkalis
S 3/9/14.7	Keep in a cool, well ventilated place away from metals
S 3/9/14.8	Keep in a cool, well ventilated place away from oxidizing and acidic substances
S 3/9/14/49	Keep only in the original container in a cool, well ventilated place away from ... (incompatible materials to be indicated by the manufacturer)
S 3/9/14.1/49	Keep only in the original container in a cool, well ventilated place away from reducing agents, heavy metal compounds, acids and alkalis
S 3/9/14.2/49	Keep only in the original container in a cool, well ventilated place away from oxidizing and acidic substances as well as heavy metal compounds
S 3/9/14.3/49	Keep only in the original container in a cool, well ventilated place away from iron
S 3/9/14.4/49	Keep only in the original container in a cool, well ventilated place away from water and alkalis
S 3/9/14.5/49	Keep only in the original container in a cool, well ventilated place away from acids
S 3/9/14.6/49	Keep only in the original container in a cool, well ventilated place away from alkalis
S 3/9/14.7/49	Keep only in the original container in a cool, well ventilated place away from metals
S 3/9/14.8/49	Keep only in the original container in a cool, well ventilated place away from oxidizing and acidic substances
S 3/9/49	Keep only in the original container in a cool, well ventilated place
S 3/14	Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer)
S 3/14.1	Keep in a cool place away from reducing agents, heavy metal compounds, acids and alkalis
S 3/14.2	Keep in a cool place away from oxidizing and acidic substances as well as heavy metal compounds
S 3/14.3	Keep in a cool place away from iron
S 3/14.4	Keep in a cool place away from water and alkalis
S 3/14.5	Keep in a cool place away from acids
S 3/14.6	Keep in a cool place away from alkalis
S 3/14.7	Keep in a cool place away from metals
S 3/14.8	Keep in a cool place away from oxidizing and acidic substances
S 7/8	Keep container tightly closed and dry
S 7/9	Keep container tightly closed and in a well ventilated place
S 7/47	Keep container tightly closed and at a temperature not exceeding ... C (to be specified by the manufacturer)
S 20/21	When using do not eat, drink or smoke
S 24/25	Avoid contact with skin and eyes
S27/28	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (to be specified by the manufacturer)
S 36/37	Wear suitable protective clothing and gloves
S 36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S 36/39	Wear suitable protective clothing and eye/face protection
S 37/39	Wear suitable gloves and eye/face protection
S 47/49	Keep only in the original container at temperature not exceeding ... C (to be specified by the manufacturer)

German classification of water pollution risk (WGK)

WGK nwg

WGK 1
WGK 2
WGK 3
WGK 3*

Storage class (LGK)

1	Explosive material (2nd German Explosives Act: Storage groups 1.1 - 1.4)
2 A	Compressed, liquified or pressure-dissolved gases
2 B	Pressurized gas packages (aerosol containers)
3 A	Flammable liquid materials (Flp below 55°C)
3 B	Flammable liquids (VbF Hazard class: AIII)
4.1 A	Flammable solid materials (2nd German Explosives Act: Storage groups I-III)
4.1 B	Flammable solid materials (EC Method A 10)
4.2	Spontaneously combustible materials
4.3	Materials that form flammable gases in contact of water
5.1 A	Oxidizing agents (TRGS 515 Group 1)
5.1 B	Oxidizing agents (TRGS 515 Group 2 + 3)
5.1 C	Oxidizing agents (TRGS 511 Group A - C)
5.2	Organic peroxides
6.1 A	Flammable toxic materials
6.1 B	Non-flammable toxic materials
6.2	Infectious materials
7	Radioactive materials
8	Corrosive materials
9	Vacant
10	Flammable liquids if not LGK 3 A or LGK 3 B
11	Flammable solids
12	Non-flammable liquids in non-flammable packages
13	Non-flammable solids in non-flammable packages

Transport regulations (RID/ADR)

1	Explosive substances
2	Gases
3	Flammable liquids
4.1	Flammable solids
4.2	Spontaneously flammable solids
4.3	Substances which form flammable gases in contact of water
5.1	Substances which promote combustion (oxidants)
5.2	Organic peroxides
6.1	Toxic substances
6.2	Infectious substances
7	Radioactive substances
8	Corrosive substances
9	Various hazardous substances

German classification of flammable liquids (VbF)**Hazard class A I**

Liquids having a flash point below 21°C that do not dissolve in water at 15 °C (or whose flammable constituents do not dissolve in water at 15 °C).

Hazard class A II

Liquids having a flash point of 21-55°C that do not dissolve in water at 15 °C (or whose flammable constituents do not dissolve in water at 15 °C).

Hazard class A III

Liquids having a flash point of 55-100°C that do not dissolve in water at 15 °C (or whose flammable constituents do not dissolve in water at 15 °C).
Flammable liquids of hazard class A III heated to or above their flash point are treated as flammable liquids of hazard class A I.

Hazard class B

Liquids having a flash point below 21°C that dissolve in water at 15 °C (or whose flammable constituents dissolve in water at 15 °C).

Disposal of laboratory waste

Small quantities of chemical residues and remnants arising in the laboratory generally count as special waste which must be disposed of in compliance with anti-pollution and other laws in force in the country concerned. To assure compliance, we recommend that you contact an approved waste disposal company. They will advise you on matters of classification, collection and containers for this type of special waste. The alphabetical list provides you with short instructions for safe disposal. Some of the most important explanations and abbreviations used you will find here.

Laboratory waste should be placed into separate containers according to the type of chemical being collected. Please note that it is often necessary to neutralize reactive chemicals using one of the methods detailed in the next section. Waste containers should be clearly labelled with their contents and the appropriate hazard symbols attached.

- A** Organic solvents and organic substances in solution, containing no halogens.
- B** Organic solvents and organic substances in solution, containing halogens. important: Do not use containers made of aluminium !
- C** Solid residues of organic laboratory chemicals, safely packed in plastic sachets or bottles or in the original containers supplied by the manufacturer.
- D** Salts in solution: the contents of this container should be adjusted to pH 6-8.
- E** Toxic inorganic residues and salts of heavy metals, and solutions of these substances, in tightly closed, nonbreakable packages which are clearly and durably labelled.
- F** Toxic flammable compounds in tightly sealed nonbreakable containers clearly labelled with the contents.
- G** Mercury and residues of inorganic mercury salts.
- H** Metal salt residues for recovery; each metal should be collected separately.
- I** Inorganic solids.
- K** Separate collection of glass, metal and plastic waste, HPLC-Stainless steel columns and cartridges.

Neutralization of laboratory waste

To enable small quantities of laboratory waste to be safely collected and disposed of, reactive chemicals must first be converted into harmless products. When handling laboratory chemicals and particularly when neutralizing reactive chemicals, utmost care is needed as often violent chemical reactions occur. All work must therefore be carried out by qualified personnel and with strict observance of the safety measures described, using an efficient fume cupboard with the front screen closed.

- 1 Organic halogen-free solvents: container A. Small quantities of halogen-free solvents may be collected and disposed of together with halogenated solvents. Be sure to test for absence of peroxides, before handing over to the waste disposal company.
- 2 Organic halogenated solvents: container B. Important: Do not use containers made of aluminium!
- 3 Relatively unreactive organic reagents should be collected in container A. If halogenated, they should be placed in container B. For solid residues use container C.
- 4 Aqueous solutions of organic acids should be carefully neutralized with sodium hydrogen carbonate or sodium hydroxide. Before placing in container D, check the pH with pH universal indicator strips. Aromatic carboxylic acids should be precipitated with dilute hydrochloric acid and filtered off. Precipitate: container C. Filtrate: container D.
- 5 Organic bases and amines in solution: container A or B. To prevent unpleasant odours (fume cupboard), we recommend careful neutralization with dilute hydrochloric acid or sulfuric acid. Check the pH with pH universal indicator strips.
- 6 Nitrites and mercaptans should be oxidized by stirring for several hours (preferably overnight) with sodium hypochlorite solution. Any excess oxidant should be neutralized with sodium thiosulfate. Organic phase: container A. Aqueous phase: container D.
- 7 Water-soluble aldehydes should be converted to bisulfite adducts using a concentrated aqueous sodium hydrogen sulfite solution: container A or B.
- 9 Carcinogenic compounds and flammable compounds marked 'very toxic' or 'toxic': container F. Alkyl sulfates are carcinogenic. Take special care to avoid inhalation and skin contact. To deactivate alkyl sulfates, add dropwise (from a dropping funnel) to concentrated ice-cool ammonia solution, with vigorous stirring. Before placing in container D, check the pH with pH universal indicator strips.
- 11 Acid halides should be added dropwise to an excess of methanol in order to convert them to the corresponding methyl esters. A few drops of hydrochloric acid can be added to accelerate the reaction. Neutralize with sodium hydroxide solution. Before placing in container B, check the pH with pH universal indicator strips.

- 12 Inorganic acids and anhydrides thereof should first be diluted or hydrolyzed by stirring carefully into ice-water, then neutralized (gloves, fume cupboard) with sodium hydroxide solution. Before placing in container D, check the pH with pH universal indicator strips. Fuming sulfuric acid should be carefully stirred a drop at a time into 40 % sulfuric acid. Have plenty of ice on hand for cooling. When sufficiently cool, treat the highly concentrated sulfuric acid as above. Acid gases (hydrogen bromide, hydrogen chloride and hydrogen iodide, chlorine, phosgene, sulfur dioxide) should be bubbled into dilute sodium hydroxide solution and treated as under 'Inorganic acids' above.
- 13 Inorganic bases should be diluted if necessary, by carefully stirring them into water, then neutralized (gloves, fume cupboard) with hydrochloric acid. Before placing in container D, check the pH with pH universal indicator strips.
- 14 Inorganic salts: container 1. Neutral solutions of these salts: container D. Before placing in container D, check the pH with pH universal indicator strips.
- 15 Solutions and solids containing heavy metals: container E.
- 17 Inorganic selenium compounds are toxic and must be handled with caution. Container E. Elemental selenium can be recovered by first oxidizing the salts in aqueous solution with concentrated nitric acid. Addition of sodium hydrogen sulfite solution then causes elemental selenium to precipitate out. Aqueous phase: container D.
- 21 Cyanides should first be oxidized to cyanates with hydrogen peroxide of pH 10-11. Further addition of oxidant of pH 8-9 oxidizes the cyanates to CO₂. In other words, no harmful substance remains. The oxidation reaction can be checked for completeness using Merckoquant? Cyanide test strips. container D. Azides are decomposed to nitrogen by reacting them with iodine in presence of sodium thiosulfate: container D.
- 22 Inorganic peroxides and oxidants, as well as bromine and iodine, can be rendered harmless by reduction with acidic sodium thiosulfate solution. Container D.
- 27 Residues containing valuable recoverable metals should be recycled. container H.
- 28 Aqueous solutions: container D.
- 31 Natural substances, e. g. carbohydrates, amino acids and other aqueous residues accumulating in the biochemical laboratory: container D. When mixed with organic solvents or reagents: container A or B.

Literature (German language):

- [1] Bernabei, D.; Sicherheit - Handbuch für das Labor, GIT-Verlag, Darmstadt
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- [3] EG-Richtlinien (in Fremdsprachen) Amt für amtliche Veröffentlichungen der Europäischen Gemeinschaft 2, rue Mercier, L2985 Luxemburg
- [4] Richtlinien für Laboratorien, Berufsgenossenschaft der Chemischen Industrie, Carl Heymans Verlag, Köln
- [5] Müller, K.R. Handbuch der Abfall-Entsorgung, ecomed-Verlagsgesellschaft, Landsberg

Prod.-No.	Page
A0367	428
A0369	41
A0380	733
A0382	341
A0384	734
A0385	56
A0386	800
A0387	82
A0388	652
A0389	741
A0391	41
A0392	845
A0393	529
A0394	134
A0395	803
A0397	754
A0399	745
A0400	657
A0401	733
A0405	754
A0407	277
A0408	588
A0410	784
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A0412	627
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A0440	537
A0442	60
A0443	381
A0444	613
A0445	630
A0446	252
A0447	614
A0451	753
A0452	95
A0455	274

Prod.-No.	Page
A0458	40
A0459	570
A0460	872
A0461	216
A0462	815
A0463	658
A0464	877
A0465	795
A0466	422
A0467	816
A0468	771
A0470	772
A0474	771
A0476	771
A0478	771
A0480	771
A0482	770
A0486	770
A0490	770
A0492	771
A0494	770
A0496	770
A0498	769
A0500	769
A0502	769
A0504	770
A0506	769
A0508	769
A0510	768
A0512	768
A0514	768
A0516	768
A0518	769
A0520	768
A0522	768
A0524	767
A0526	830
A0527	822
A0528	818
A0529	815
A0530	609
A0531	665
A0532	667
A0533	569
A0534	418
A0535	780

Prod.-No.	Page
A0536	713
A0537	806
A0538	609
A0539	605
A0540	757
A0541	732
A0542	744
A0543	749
A0544	754
A0545	542
A0546	744
A0547	733
A0548	729
A0549	723
A0550	540
A0552	544
A0553	548
A0554	539
A0556	534
A0557	246
A0558	331
A0559	173
A0560	340
A0561	346
A0562	637
A0563	644
A0564	646
A0565	336
A0566	648
A0567	385
A0568	403
A0569	184
A0571	451
A0572	420
A0573	637
A0574	241
A0575	502
A0576	508
A0577	248
A0578	533
A0579	538
A0580	247
A0581	540
A0582	542
A0583	474
A0585	590

Prod.-No.	Page
A0586	95
A0589	382
A0590	829
A0591	490
A0592	738
A0596	273
A0600	741
A0601	352
A0618	276
A0619	403
A0620	792
A0621	785
A0622	256
A0623	125
A0624	691
A0625	412
A0626	423
A0629	402
A0633	717
A0634	665
A0635	665
A0636	871
A0637	624
A0638	707
A0639	807
A0641	603
A0642	205
A0643	739
A0644	707
A0645	535
A0646	781
A0647	171
A0648	658
A0649	660
A0650	100
A0651	660
A0652	648
A0653	465
A0654	465
A0655	781
A0656	404
A0657	407
A0658	413
A0659	412
A0660	568
A0661	40

Prod.-No.	Page
A0662	39
A0663	871
A0665	868
A0666	851
A0667	849
A0668	842
A0669	833
A0670	815
A0671	802
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A0673	759
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A0677	663
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A0680	619
A0681	340
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A0694	413
A0695	464
A0696	412
A0697	833
A0698	452
A0699	446
A0700	431
A0701	394
A0702	394
A0703	393
A0704	63
A0705	63
A0706	63
A0707	63
A0708	63
A0709	62
A0710	62

Prod.-No.	Page
A0711	62
A0712	62
A0713	62
A0714	64
A0715	64
A0716	64
A0718	64
A0719	64
A0720	64
A0721	63
A0722	63
A0723	63
A0724	64
A0725	64
A0726	64
A0727	64
A0728	65
A0729	65
A0730	65
A0731	65
A0732	65
A0733	65
A0734	65
A0735	65
A0736	65
A0738	65
A0739	144
A0740	145
A0741	146
A0742	194
A0744	47
A0746	195
A0747	83
A0748	360
A0749	360
A0750	361
A0751	96
A0752	97
A0753	131
A0754	109
A0758	609
A0759	609
A0760	608
A0761	610
A0762	610
A0763	132

Prod.-No.	Page
A0764	725
A0765	135
A0766	775
A0768	154
A0769	308
A0770	679
A0771	170
A0772	171
A0773	172
A0774	177
A0775	178
A0776	677
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A0778	181
A0779	182
A0781	251
A0782	251
A0783	251
A0784	252
A0785	209
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A0787	279
A0788	279
A0789	289
A0790	289
A0791	307
A0792	307
A0793	307
A0794	307
A0795	307
A0796	307
A0797	307
A0798	661
A0799	94
A0800	307
A0801	307
A0802	308
A0803	308
A0804	308
A0805	194
A0806	206
A0807	208
A0808	208
A0809	209
A0810	209
A0811	209

Prod.-No.	Page
A0812	221
A0813	221
A0814	256
A0815	258
A0816	262
A0817	269
A0818	284
A0819	306
A0820	39
A0821	328
A0822	328
A0823	355
A0826	291
A0827	566
A0828	358
A0829	641
A0830	577
A0832	59
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A0834	102
A0835	179
A0836	100
A0837	615
A0838	89
A0839	108
A0840	52
A0841	52
A0842	53
A0843	53
A0844	54
A0845	75
A0846	77
A0847	77
A0848	77
A0849	78
A0850	75
A0851	56
A0852	56
A0853	56
A0854	57
A0855	57
A0856	58
A0857	57
A0858	569
A0859	340
A0860	392

Prod.-No.	Page
A0861	393
A0862	590
A0863	132
A0869	459
A0870	55
A0871	359
A0872	664
A0875	463
A0877	355
A0878	318
A0879	252
A0880	478
A0881	268
A0883	377
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A0885	373
A0886	875
A0887	479
A0888	739
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A0890	633
A0892	668
A0893	483
A0895	741
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A0899	341
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A0902	567
A0903	622
A0905	183
A0909	373
A0913	336
A0917	70
A0920	104
A0922	701
A0926	858
A0927	482
A0928	308
A0930	602
A0931	104
A0933	60
A0934	45
A0936	356
A0937	359

Prod.-No.	Page
A0938	639
A0939	67
A0940	569
A0941	60
A0942	400
A0943	809
A0944	616
A0946	56
A0947	57
A0948	68
A0949	70
A0950	56
A0951	56
A0952	345
A0953	128
A0954	482
A0955	811
A0956	52
A0957	678
A0958	492
A0959	566
A0960	678
A0962	54
A0963	567
A0964	593
A0965	593
A0966	86
A0967	55
A0968	687
A0969	140
A0970	385
A0971	614
A0972	797
A0973	800
A0974	798
A0975	799
A0979	728
A0980	720
A0981	874
A0982	476
A0983	858
A0984	95
A0985	755
A0986	645
A0988	94
A0989	624

Prod.-No.	Page
A0990	875
A0991	738
A0992	648
A0993	45
A0995	668
A0996	627
A0998	114
A0999	630
A1000	877
A1001	259
A1002	711
A1003	129
A1004	477
A1006	497
A1007	869
A1008	458
A1009	710
A1010	581
A1011	664
A1012	170
A1013	603
A1014	408
A1015	404
A1016	581
A1017	576
A1018	260
A1019	305
A1020	705
A1021	332
A1022	146
A1024	138
A1025	148
A1028	574
A1029	496
A1030	93
A1031	101
A1032	103
A1033	219
A1034	244
A1035	461
A1036	503
A1037	507
A1038	514
A1039	638
A1040	655
A1041	656

Prod.-No.	Page
A1042	646
A1043	643
A1045	721
A1046	735
A1047	731
A1048	752
A1049	850
A1050	877
A1051	159
A1052	120
A1055	565
A1057	83
A1058	206
A1059	160
A1060	38
A1061	67
A1062	136
A1063	185
A1064	185
A1065	199
A1066	290
A1067	386
A1068	388
A1069	401
A1070	402
A1071	402
A1072	403
A1073	445
A1074	531
A1075	108
A1076	549
A1077	550
A1078	550
A1079	628
A1080	628
A1081	635
A1082	792
A1083	793
A1084	802
A1085	831
A1086	835
A1087	837
A1088	37
A1089	52
A1090	51
A1091	73

Prod.-No.	Page
A1092	242
A1094	319
A1095	144
A1096	144
A1097	154
A1098	192
A1099	195
A1100	195
A1101	310
A1102	309
A1103	313
A1104	314
A1105	317
A1106	392
A1107	393
A1108	529
A1109	691
A1110	692
A1111	692
A1112	705
A1113	869
A1114	869
A1116	870
A1117	130
A1118	803
A1119	259
A1120	162
A1123	384
A1124	556
A1125	776
A1126	192
A1129	552
A1131	367
A1132	617
A1134	423
A1135	148
A1136	185
A1137	388
A1138	470
A1139	471
A1140	628
A1141	796
A1142	102
A1144	502
A1145	582
A1148	801

Prod.-No.	Page
A1149	726
A1150	463
A1151	338
A1152	338
A1153	615
A1154	54
A1155	52
A1156	52
A1157	53
A1158	88
A1159	822
A1160	129
A1161	849
A1162	778
A1163	480
A1164	639
A1166	154
A1167	120
A1168	160
A1170	752
A1171	362
A1174	353
A1242	869
A1243	562
A1246	463
A1249	631
A1250	164
A1251	165
A1252	165
A1253	165
A1254	166
A1255	166
A1256	167
A1257	167
A1258	167
A1259	167
A1260	167
A1261	167
A1262	167
A1263	537
A1264	738
A1268	533
A1269	574
A1270	574
A1271	574
A1272	573

Prod.-No.	Page
A1273	552
A1274	552
A1275	553
A1278	812
A1279	285
A1280	572
A1281	548
A1282	874
A1283	498
A1284	847
A1285	847
A1286	157
A1287	840
A1288	629
A1289	278
A1294	164
A1295	165
A1297	777
A1298	104
A1299	364
A1304	457
A1305	418
A1306	744
A1308	528
A1309	865
A1310	150
A1311	150
A1312	150
A1313	151
A1314	291
A1315	292
A1316	292
A1317	293
A1318	293
A1320	374
A1321	374
A1322	462
A1323	484
A1324	520
A1325	523
A1326	523
A1327	523
A1328	523
A1329	525
A1330	525
A1331	526

Prod.-No.	Page
A1332	526
A1333	526
A1334	526
A1335	527
A1336	527
A1337	527
A1338	528
A1339	693
A1340	536
A1341	409
A1342	499
A1343	586
A1344	620
A1345	117
A1346	330
A1348	68
A1349	377
A1350	214
A1351	729
A1352	724
A1353	734
A1354	93
A1355	101
A1356	102
A1357	103
A1358	219
A1359	461
A1360	850
A1361	850
A1362	638
A1363	646
A1364	643
A1365	655
A1366	657
A1367	244
A1368	507
A1369	515
A1370	721
A1371	727
A1372	735
A1373	731
A1374	752
A1375	752
A1376	714
A1377	387
A1378	445

Prod.-No.	Page
A1379	835
A1380	132
A1381	157
A1382	612
A1383	161
A1384	399
A1385	493
A1386	524
A1387	632
A1388	840
A1389	847
A1390	847
A1391	76
A1392	139
A1393	557
A1394	557
A1395	557
A1396	761
A1397	761
A1398	51
A1399	84
A1400	762
A1401	345
A1402	538
A1403	539
A1404	585
A1405	635
A1406	679
A1407	777
A1408	872
A1409	54
A1410	61
A1411	61
A1414	214
A1415	707
A1416	791
A1417	798
A1418	838
A1419	814
A1420	382
A1421	69
A1422	377
A1423	831
A1424	832
A1425	254
A1426	486

Prod.-No.	Page
A1427	509
A1428	178
A1429	179
A1430	723
A1431	829
A1432	743
A1433	772
A1434	418
A1436	654
A1437	412
A1438	313
A1440	464
A1441	843
A1442	575
A1443	743
A1446	783
A1447	503
A1460	778
A1464	38
A1465	548
A1467	98
A1471	155
A1485	84
A1488	610
A1489	66
A1491	185
A1492	372
A1493	469
A1494	572
A1495	774
A1496	823
A1497	175
A1498	636
A1499	392
A1502	706
A1503	716
A1504	659
A1505	315
A1506	878
A1507	364
A1508	186
A1511	629
A1512	210
A1522	720
A1523	86
A1524	713

Prod.-No.	Page
A1525	396
A1526	396
A1527	865
A1528	563
A1529	390
A1530	750
A1531	729
A1532	504
A1533	704
A1536	852
A1537	332
A1538	693
A1539	467
A1545	50
A1546	254
A1547	558
A1548	158
A1549	723
A1551	738
A1552	873
A1553	844
A1554	412
A1556	505
A1557	59
A1559	573
A1560	186
A1561	139
A1563	560
A1565	44
A1566	575
A1567	44
A1568	538
A1569	204
A1570	820
A1571	204
A1572	214
A1573	250
A1574	144
A1575	648
A1576	250
A1577	57
A1578	613
A1579	274
A1581	284
A1582	44
A1584	287

Prod.-No.	Page
A1585	205
A1586	289
A1587	641
A1588	858
A1589	858
A1590	666
A1591	409
A1592	666
A1594	612
A1595	806
A1596	67
A1597	821
A1599	822
A1600	45
A1601	665
A1603	46
A1604	46
A1605	46
A1606	46
A1607	275
A1608	276
A1609	275
A1611	175
A1612	332
A1613	333
A1614	339
A1615	334
A1616	339
A1618	403
A1619	403
A1620	407
A1621	406
A1622	68
A1623	407
A1624	613
A1625	464
A1627	465
A1629	602
A1631	602
A1633	533
A1635	534
A1637	853
A1640	55
A1642	510
A1643	341
A1644	647

Prod.-No.	Page
A1645	845
A1646	176
A1647	745
A1649	804
A1652	147
A1653	543
A1654	543
A1655	283
A1656	173
A1658	834
A1659	834
A1661	834
A1662	405
A1663	147
A1666	455
A1667	96
A1668	121
A1669	157
A1670	756
A1671	728
A1672	57
A1673	59
A1677	848
A1679	381
A1682	359
A1687	780
A1688	74
A1689	460
A1690	199
A1691	791
A1692	39
A1693	370
A1694	577
A1698	264
A1699	182
A1700	118
A1701	121
A1702	255
A1703	255
A1704	380
A1705	427
A1706	499
A1707	664
A1708	710
A1709	603
A1710	414

Prod.-No.	Page
A1711	397
A1712	311
A1713	785
A1714	871
A1716	452
A1724	365
A1726	415
A1731	88
A1732	822
A1738	816
A1740	135
A1742	828
A1743	659
A1748	627
A1749	817
A1754	161
A1756	203
A1758	278
A1759	279
A1760	285
A1764	407
A1765	406
A1766	406
A1771	608
A1772	609
A1777	415
A1778	415
A1779	739
A1787	777
A1790	461
A1791	431
A1793	876
A1795	364
A1797	471
A1798	96
A1799	823
A1801	824
A1803	394
A1804	243
A1806	202
A1809	592
A1810	623
A1811	506
A1812	655
A1816	560
A1823	561

Prod.-No.	Page
A1825	623
A1826	618
A1827	778
A1828	843
A1831	477
A1832	575
A1833	535
A1835	605
A1837	601
A1839	853
A1841	509
A1845	423
A1847	270
A1848	839
A1851	53
A1852	774
A1854	655
A1856	53
A1857	54
A1858	785
A1865	95
A1867	644
A1868	334
A1869	657
A1870	660
A1871	176
A1872	177
A1873	178
A1874	173
A1875	219
A1877	502
A1878	505
A1879	506
A1880	724
A1881	724
A1882	655
A1883	756
A1884	484
A1885	267
A1886	752
A1887	745
A1889	559
A1891	59
A1894	558
A1895	313
A1900	818

Prod.-No.	Page
A1903	515
A1905	280
A1907	107
A1908	593
A1909	462
A1910	865
A1911	368
A1913	525
A1914	525
A1915	151
A1916	151
A1917	151
A1918	151
A1919	151
A1920	293
A1921	294
A1922	293
A1923	294
A1924	291
A1925	292
A1926	292
A1927	397
A1931	670
A1932	573
A1935	206
A1937	410
A1938	731
A1939	731
A1940	734
A1941	43
A1942	182
A1943	253
A1944	578
A1945	470
A1946	207
A1947	802
A1948	396
A1949	525
A1950	293
A1951	293
A1952	396
A1953	396
A1954	484
A1955	520
A1956	526
A1957	527

Prod.-No.	Page
A1958	527
A1959	693
A1960	693
A1961	865
A1962	866
A1963	397
A1964	458
A1965	293
A1966	866
A1967	484
A1968	484
A1969	396
A1970	395
A1971	525
A1972	525
A1973	865
A1974	467
A1975	528
A1976	150
A1977	150
A1978	151
A1979	293
A1980	525
A1981	865
A1982	396
A1983	150
A1984	150
A1985	292
A1986	292
A1988	151
A1989	396
A1990	151
A1991	858
A1993	200
A1997	375
A1999	576
A2001	264
A2002	263
A2003	268
A2004	265
A2005	739
A2006	658
A2007	736
A2008	753
A2010	329
A2011	330

Prod.-No.	Page
A2012	329
A2017	799
A2018	526
A2019	526
A2020	562
A2021	523
A2022	523
A2023	390
A2024	374
A2025	374
A2026	396
A2027	458
A2028	462
A2029	462
A2030	523
A2031	523
A2032	526
A2033	799
A2034	520
A2035	520
A2036	704
A2037	820
A2038	833
A2039	311
A2040	693
A2041	527
A2042	527
A2043	527
A2044	692
A2047	803
A2051	47
A2052	82
A2053	113
A2054	122
A2055	188
A2056	326
A2057	368
A2059	399
A2060	400
A2061	430
A2062	431
A2063	429
A2064	466
A2065	468
A2066	469
A2067	627

Prod.-No.	Page
A2068	676
A2069	680
A2070	686
A2071	708
A2072	708
A2073	852
A2074	272
A2075	336
A2076	875
A2078	412
A2079	263
A2080	265
A2081	265
A2082	268
A2083	40
A2084	383
A2085	354
A2086	461
A2087	514
A2088	590
A2089	856
A2090	856
A2091	528
A2092	342
A2094	856
A2096	786
A2097	456
A2098	316
A2099	91
A2100	716
A2101	796
A2102	782
A2106	176
A2107	159
A2108	59
A2109	59
A2110	37
A2111	70
A2112	70
A2113	70
A2114	71
A2115	71
A2116	71
A2117	72
A2118	72
A2119	72

Prod.-No.	Page
A2120	72
A2121	72
A2122	73
A2123	74
A2124	78
A2125	79
A2126	86
A2128	91
A2129	111
A2130	510
A2131	53
A2132	116
A2135	591
A2136	775
A2137	137
A2138	156
A2139	160
A2140	175
A2141	186
A2142	604
A2143	207
A2144	211
A2145	256
A2146	250
A2147	250
A2148	250
A2149	260
A2150	263
A2151	264
A2152	265
A2153	269
A2155	277
A2156	358
A2157	311
A2158	131
A2159	701
A2160	701
A2161	337
A2162	351
A2163	351
A2164	353
A2165	363
A2166	364
A2167	366
A2169	388
A2170	390

Prod.-No.	Page
A2171	730
A2172	428
A2173	429
A2175	430
A2176	146
A2177	457
A2178	664
A2179	644
A2180	650
A2182	483
A2183	488
A2184	476
A2185	497
A2186	501
A2187	516
A2188	776
A2189	547
A2190	547
A2191	561
A2192	335
A2193	746
A2194	747
A2195	747
A2196	748
A2197	750
A2198	563
A2199	565
A2200	583
A2201	588
A2202	372
A2203	630
A2204	632
A2205	604
A2206	605
A2207	604
A2208	604
A2210	604
A2211	776
A2212	611
A2213	618
A2214	624
A2215	395
A2216	675
A2217	677
A2218	483
A2219	688

Prod.-No.	Page
A2220	688
A2221	701
A2222	758
A2223	772
A2224	772
A2225	776
A2226	777
A2227	659
A2228	805
A2229	810
A2230	821
A2231	811
A2232	821
A2233	838
A2234	838
A2235	845
A2237	851
A2238	853
A2239	577
A2240	870
A2241	873
A2242	846
A2243	383
A2244	76
A2245	77
A2246	100
A2247	246
A2248	263
A2249	269
A2250	270
A2251	343
A2252	350
A2253	386
A2254	604
A2255	633
A2256	395
A2257	633
A2258	634
A2259	634
A2260	634
A2261	669
A2263	705
A2264	835
A2265	267
A2266	87
A2267	187

Prod.-No.	Page
A2268	266
A2269	789
A2270	782
A2271	623
A2272	147
A2273	338
A2275	331
A2276	395
A2279	616
A2282	44
A2283	44
A2286	361
A2287	85
A2288	91
A2289	98
A2290	80
A2291	97
A2292	115
A2293	80
A2294	46
A2295	80
A2296	133
A2297	94
A2298	158
A2299	160
A2300	45
A2301	97
A2302	85
A2303	179
A2304	159
A2305	45
A2306	79
A2307	91
A2308	95
A2309	163
A2310	80
A2311	162
A2312	97
A2313	360
A2314	80
A2315	46
A2316	109
A2317	133
A2318	154
A2319	158
A2320	161

Prod.-No.	Page
A2321	183
A2322	680
A2323	163
A2324	180
A2325	160
A2326	179
A2327	163
A2329	203
A2330	159
A2331	161
A2332	206
A2335	163
A2336	204
A2337	214
A2338	275
A2339	284
A2340	163
A2342	163
A2343	680
A2344	213
A2345	274
A2347	289
A2348	286
A2349	278
A2350	204
A2351	214
A2352	275
A2353	328
A2354	39
A2355	286
A2356	339
A2357	335
A2358	346
A2359	284
A2360	275
A2361	279
A2363	331
A2364	384
A2365	406
A2366	451
A2367	637
A2368	641
A2369	635
A2370	329
A2371	420
A2372	403

Prod.-No.	Page
A2373	637
A2374	712
A2375	645
A2376	246
A2377	660
A2378	247
A2379	641
A2381	340
A2382	407
A2383	645
A2385	241
A2387	506
A2388	508
A2389	533
A2390	474
A2391	534
A2392	542
A2394	541
A2395	538
A2396	548
A2397	543
A2398	553
A2399	723
A2400	534
A2401	542
A2402	729
A2403	729
A2404	724
A2405	541
A2406	743
A2407	749
A2408	757
A2409	564
A2410	732
A2411	739
A2413	606
A2414	608
A2416	754
A2417	587
A2418	627
A2419	677
A2420	744
A2421	666
A2423	609
A2424	568
A2425	419

Prod.-No.	Page
A2426	609
A2427	411
A2428	418
A2431	668
A2432	783
A2433	568
A2434	418
A2435	806
A2436	815
A2437	818
A2440	762
A2441	762
A2442	763
A2443	763
A2444	764
A2445	763
A2446	763
A2447	763
A2448	763
A2449	764
A2450	764
A2452	765
A2453	764
A2454	764
A2455	764
A2456	765
A2457	765
A2458	766
A2459	765
A2460	765
A2461	765
A2462	766
A2463	766
A2464	766
A2465	766
A2466	767
A2467	767
A2469	767
A2470	766
A2471	767
A2472	857
A2473	422
A2474	821
A2475	795
A2476	871
A2477	876

Prod.-No.	Page
A2478	872
A2480	858
A2481	216
A2483	414
A2484	715
A2485	796
A2488	282
A2489	616
A2490	216
A2492	617
A2493	616
A2495	158
A2497	61
A2499	415
A2501	357
A2502	358
A2503	783
A2504	692
A2505	722
A2506	481
A2509	742
A2511	414
A2512	398
A2514	850
A2515	496
A2516	830
A2517	742
A2518	743
A2519	508
A2520	628
A2527	419
A2529	55
A2530	736
A2533	418
A2534	797
A2535	814
A2536	76
A2538	417
A2540	315
A2541	78
A2542	702
A2544	737
A2547	618
A2548	748
A2549	867
A2551	334

Prod.-No.	Page
A2552	144
A2553	252
A2554	49
A2556	55
A2561	411
A2562	851
A2563	583
A2564	655
A2565	451
A2568	123
A2569	772
A2570	493
A2571	494
A2572	705
A2574	371
A2575	800
A2579	426
A2580	127
A2581	68
A2582	174
A2585	421
A2586	421
A2587	361
A2591	266
A2592	419
A2593	817
A2594	817
A2595	661
A2596	654
A2597	526
A2599	780
A2600	91
A2601	170
A2606	513
A2608	392
A2610	463
A2611	83
A2614	155
A2615	414
A2616	92
A2617	172
A2618	40
A2619	155
A2620	362
A2621	174
A2622	92

Prod.-No.	Page	Prod.-No.	Page	Prod.-No.	Page	Prod.-No.	Page
A2623	421	A2676	571	A2737	165	A2808	315
A2624	357	A2677	417	A2738	166	A2809	95
A2625	92	A2678	782	A2739	169	A2810	713
A2626	42	A2679	785	A2740	169	A2811	636
A2628	357	A2680	784	A2741	169	A2812	126
A2629	362	A2681	417	A2742	169	A2816	506
A2630	92	A2682	50	A2743	169	A2817	220
A2631	42	A2683	714	A2744	169	A2818	419
A2632	431	A2684	786	A2745	168	A2819	456
A2633	356	A2685	572	A2746	168	A2820	406
A2634	421	A2686	782	A2747	168	A2824	727
A2636	155	A2687	419	A2748	168	A2825	532
A2637	174	A2688	786	A2749	168	A2830	684
A2639	587	A2689	783	A2750	168	A2832	755
A2640	205	A2690	571	A2756	835	A2833	756
A2641	736	A2691	714	A2757	716	A2834	209
A2642	651	A2692	717	A2759	477	A2835	264
A2643	42	A2693	784	A2760	690	A2838	848
A2644	154	A2695	714	A2761	738	A2845	784
A2646	650	A2696	784	A2762	783	A2853	630
A2647	43	A2697	718	A2763	167	A2856	676
A2648	413	A2698	715	A2764	168	A2857	467
A2649	431	A2699	785	A2765	287	A2858	749
A2650	42	A2700	716	A2766	173	A2865	342
A2651	739	A2704	266	A2767	210	A2866	79
A2652	624	A2711	126	A2768	415	A2869	636
A2653	744	A2712	783	A2769	316	A2870	488
A2655	741	A2714	772	A2770	570	A2878	803
A2656	569	A2715	717	A2771	417	A2922	221
A2657	625	A2717	718	A2772	742	A2923	129
A2658	744	A2718	715	A2773	516	A2925	180
A2660	736	A2719	830	A2774	627	A2926	383
A2661	625	A2720	422	A2776	751	A2927	753
A2662	753	A2721	717	A2777	180	A2935	635
A2663	414	A2722	780	A2779	457	A2936	93
A2664	745	A2723	715	A2782	561	A2937	314
A2665	625	A2724	830	A2783	347	A2938	615
A2666	741	A2725	718	A2787	243	A2939	638
A2667	321	A2726	423	A2795	333	A2940	154
A2668	417	A2728	424	A2796	385	A2941	102
A2669	781	A2729	397	A2797	735	A2942	726
A2670	626	A2732	164	A2798	572	A2943	735
A2671	783	A2733	164	A2799	572	A2944	730
A2672	414	A2734	164	A2800	424	A2945	646
A2674	783	A2735	165	A2801	424	A2946	642
A2675	626	A2736	165	A2802	678	A2947	549

Prod.-No.	Page
A2948	310
A2949	92
A2951	308
A2952	51
A2954	535
A2955	737
A2957	385
A2959	477
A2964	58
A2966	412
A2968	519
A3004	401
A3006	286
A3007	92
A3008	827
A3009	287
A3014	530
A3020	103
A3026	311
A3029	866
A3066	170
A3092	384
A3095	642
A3098	274
A3099	631
A3100	832
A3101	532
A3115	558
A3118	559
A3120	833
A3121	569
A3122	568
A3124	828
A3125	746
A3127	311
A3128	91
A3131	818
A3132	246
A3133	376
A3134	292
A3135	693
A3136	866
A3137	292
A3139	292
A3140	397
A3144	493

Prod.-No.	Page
A3145	316
A3146	800
A3147	494
A3148	836
A3149	98
A3150	813
A3152	456
A3153	360
A3154	813
A3155	561
A3166	382
A3169	414
A3176	610
A3177	276
A3185	276
A3189	46
A3190	413
A3195	282
A3196	191
A3197	749
A3198	75
A3199	704
A3200	260
A3202	631
A3204	311
A3205	342
A3208	261
A3212	261
A3215	510
A3216	581
A3223	738
A3225	98
A3230	651
A3233	411
A3234	314
A3237	531
A3238	639
A3240	392
A3249	79
A3251	454
A3255	754
A3259	569
A3260	94
A3261	270
A3264	877
A3267	667

Prod.-No.	Page
A3268	401
A3269	700
A3272	559
A3273	589
A3274	599
A3276	612
A3277	802
A3278	649
A3280	559
A3281	98
A3282	179
A3283	99
A3284	127
A3285	186
A3286	98
A3287	101
A3288	468
A3290	288
A3291	560
A3292	599
A3293	740
A3294	99
A3295	98
A3296	201
A3297	128
A3298	104
A3300	99
A3301	179
A3302	320
A3303	100
A3305	201
A3306	316
A3307	462
A3308	427
A3309	454
A3310	648
A3311	638
A3312	469
A3313	316
A3314	656
A3315	426
A3316	649
A3317	99
A3318	656
A3319	642
A3320	455

Prod.-No.	Page
A3321	315
A3322	661
A3323	455
A3324	725
A3325	649
A3326	662
A3327	244
A3328	504
A3330	510
A3331	716
A3332	722
A3333	315
A3334	588
A3335	725
A3336	717
A3337	649
A3338	617
A3339	423
A3340	649
A3342	656
A3343	642
A3344	42
A3345	640
A3346	661
A3347	653
A3348	244
A3349	650
A3350	316
A3351	579
A3352	149
A3353	588
A3354	756
A3355	740
A3356	725
A3357	740
A3358	626
A3359	653
A3360	42
A3361	649
A3362	657
A3363	642
A3364	722
A3365	606
A3366	640
A3367	654
A3368	606

Prod.-No.	Page
A3369	629
A3370	757
A3371	738
A3372	722
A3373	640
A3374	588
A3375	657
A3376	707
A3377	120
A3378	291
A3380	571
A3381	58
A3383	41
A3384	707
A3385	626
A3386	491
A3387	460
A3388	112
A3389	374
A3390	551
A3391	118
A3392	398
A3393	822
A3394	857
A3395	187
A3396	839
A3397	413
A3398	571
A3399	850
A3400	107
A3401	848
A3402	55
A3403	836
A3404	838
A3405	363
A3406	852
A3407	106
A3408	373
A3409	149
A3410	844
A3411	840
A3412	662
A3413	107
A3415	680
A3416	107
A3417	197

Prod.-No.	Page
A3418	298
A3419	123
A3420	106
A3421	296
A3422	796
A3423	107
A3424	498
A3425	106
A3426	55
A3427	839
A3428	106
A3430	852
A3431	390
A3432	113
A3433	106
A3434	99
A3435	824
A3436	106
A3437	848
A3438	106
A3441	732
A3442	620
A3444	105
A3445	844
A3446	107
A3448	499
A3449	106
A3450	586
A3452	837
A3453	664
A3454	105
A3455	647
A3456	105
A3457	480
A3458	106
A3459	671
A3460	486
A3461	581
A3462	105
A3464	620
A3465	667
A3466	499
A3468	732
A3469	495
A3470	319
A3473	679

Prod.-No.	Page
A3475	643
A3476	495
A3477	70
A3478	492
A3479	81
A3480	242
A3481	494
A3482	586
A3483	74
A3484	495
A3485	103
A3486	481
A3487	751
A3488	694
A3490	495
A3491	535
A3492	405
A3493	534
A3494	446
A3495	628
A3496	486
A3497	494
A3498	386
A3499	171
A3500	102
A3501	203
A3502	461
A3503	184
A3504	340
A3505	497
A3506	747
A3507	508
A3508	172
A3509	476
A3510	720
A3511	727
A3512	625
A3514	459
A3515	748
A3516	566
A3517	668
A3518	127
A3519	745
A3520	565
A3521	413
A3522	566

Prod.-No.	Page
A3524	541
A3525	757
A3526	713
A3527	180
A3529	758
A3530	625
A3531	424
A3532	191
A3533	813
A3534	727
A3535	530
A3536	668
A3537	751
A3538	508
A3539	82
A3540	191
A3541	272
A3542	460
A3543	387
A3544	659
A3545	217
A3546	878
A3547	216
A3548	97
A3550	340
A3551	651
A3552	384
A3553	314
A3554	274
A3555	217
A3556	652
A3557	459
A3559	731
A3560	94
A3561	385
A3562	313
A3563	652
A3565	216
A3566	285
A3567	736
A3568	814
A3569	728
A3570	530
A3571	651
A3572	172
A3574	424

Prod.-No.	Page
A3575	712
A3576	502
A3577	460
A3578	83
A3579	658
A3580	217
A3581	154
A3582	638
A3583	96
A3584	459
A3586	461
A3587	178
A3588	203
A3589	646
A3590	734
A3591	217
A3592	356
A3593	652
A3594	377
A3595	193
A3597	726
A3598	103
A3599	735
A3600	388
A3601	659
A3602	748
A3604	120
A3605	109
A3606	359
A3607	217
A3608	287
A3609	368
A3611	463
A3612	652
A3613	317
A3615	607
A3616	192
A3617	378
A3618	503
A3619	792
A3620	643
A3623	478
A3625	636
A3626	57
A3627	775
A3628	721

Prod.-No.	Page
A3629	99
A3630	483
A3631	511
A3632	54
A3633	204
A3634	254
A3635	445
A3636	143
A3639	483
A3640	162
A3641	112
A3642	464
A3643	363
A3644	509
A3645	101
A3646	74
A3648	214
A3649	460
A3651	54
A3652	178
A3653	117
A3654	91
A3655	446
A3657	144
A3658	55
A3659	260
A3660	320
A3661	94
A3664	365
A3665	255
A3666	377
A3667	336
A3668	310
A3669	121
A3670	181
A3671	255
A3672	286
A3674	93
A3675	117
A3676	284
A3677	464
A3678	332
A3679	182
A3680	118
A3682	341
A3684	357

Prod.-No.	Page
A3685	255
A3686	39
A3687	118
A3688	364
A3689	96
A3690	74
A3691	204
A3693	332
A3694	254
A3697	358
A3698	255
A3699	335
A3701	39
A3702	121
A3704	381
A3706	339
A3707	387
A3708	404
A3709	118
A3710	427
A3711	500
A3712	380
A3713	499
A3714	579
A3715	121
A3718	662
A3719	409
A3720	738
A3721	121
A3722	399
A3723	380
A3724	401
A3725	284
A3726	409
A3728	410
A3729	407
A3730	377
A3731	645
A3732	873
A3733	409
A3734	381
A3735	499
A3737	663
A3738	409
A3739	385
A3740	334

Prod.-No.	Page
A3741	387
A3742	427
A3744	598
A3746	682
A3749	478
A3750	501
A3751	552
A3752	48
A3753	48
A3754	49
A3755	50
A3756	58
A3757	58
A3758	394
A3759	54
A3760	344
A3761	68
A3762	72
A3763	145
A3764	84
A3765	85
A3766	90
A3768	122
A3769	730
A3770	134
A3771	607
A3772	145
A3773	149
A3774	119
A3776	171
A3777	173
A3778	305
A3779	179
A3780	184
A3781	256
A3782	193
A3783	200
A3784	148
A3785	203
A3786	206
A3787	211
A3788	256
A3789	378
A3790	462
A3791	607
A3792	262

Prod.-No.	Page
A3793	272
A3794	281
A3795	281
A3796	420
A3797	532
A3798	536
A3799	536
A3800	608
A3801	555
A3802	721
A3803	727
A3804	734
A3805	734
A3806	746
A3808	573
A3809	575
A3810	623
A3811	580
A3812	51
A3813	592
A3814	595
A3815	614
A3820	496
A3821	723
A3822	756
A3823	579
A3824	591
A3825	591
A3826	611
A3827	622
A3829	622
A3830	674
A3831	678
A3832	689
A3834	759
A3835	773
A3836	799
A3837	800
A3838	805
A3839	808
A3840	808
A3842	823
A3843	824
A3844	829
A3845	832
A3846	832

Prod.-No.	Page
A3847	104
A3848	841
A3849	841
A3850	843
A3851	845
A3852	851
A3853	851
A3854	865
A3855	44
A3857	55
A3858	359
A3865	400
A3866	636
A3867	639
A3868	501
A3869	812
A3870	647
A3871	648
A3872	654
A3873	660
A3874	656
A3875	657
A3876	658
A3877	660
A3879	119
A3880	244
A3881	381
A3882	644
A3883	644
A3885	478
A3886	502
A3887	503
A3888	504
A3889	508
A3890	507
A3891	511
A3892	514
A3893	524
A3894	329
A3895	530
A3896	654
A3897	535
A3900	724
A3901	728
A3902	730
A3903	732

Prod.-No.	Page
A3904	733
A3905	736
A3906	736
A3907	623
A3908	809
A3910	737
A3911	746
A3912	750
A3913	363
A3914	751
A3915	752
A3916	718
A3917	565
A3918	567
A3920	591
A3922	618
A3924	708
A3926	663
A3927	607
A3928	666
A3929	105
A3930	686
A3931	688
A3932	678
A3933	690
A3934	687
A3935	776
A3937	105
A3940	106
A3942	706
A3943	710
A3944	713
A3945	797
A3946	814
A3947	721
A3949	473
A3950	706
A3951	856
A3953	155
A3954	831
A3955	327
A3957	106
A3959	181
A3960	105
A3961	876
A3964	842

Prod.-No.	Page
A3965	254
A3966	821
A3967	661
A3969	814
A3970	801
A3971	777
A3972	713
A3973	710
A3975	212
A3977	155
A3978	686
A3979	166
A3980	638
A3981	836
A3982	321
A3983	653
A3984	639
A3986	38
A3988	138
A3989	653
A3991	836
A3992	147
A3993	325
A3994	148
A3995	781
A3996	324
A3997	184
A3999	99
A4000	100
A4001	646
A4011	195
A4012	551
A4014	392
A4015	560
A4029	754
A4030	243
A4031	807
A4036	694
A4038	832
A4039	570
A4042	858
A4043	591
A4054	815
A4065	490
A4073	367
A4076	611

Prod.-No.	Page
A4078	416
A4082	221
A4084	538
A4088	177
A4089	780
A4090	490
A4097	199
A4099	259
A4101	507
A4107	701
A4108	540
A4120	421
A4134	242
A4138	288
A4139	155
A4147	306
A4148	842
A4149	857
A4150	248
A4153	805
A4155	616
A4179	417
A4181	473
A4186	808
A4187	58
A4198	740
A4199	620
A4201	406
A4202	757
A4203	659
A4206	659
A4207	48
A4208	757
A4209	740
A4212	214
A4214	215
A4215	677
A4217	655
A4220	314
A4222	640
A4224	737
A4227	791
A4228	797
A4229	731
A4230	333
A4231	625

Prod.-No.	Page
A4232	804
A4233	619
A4235	796
A4239	742
A4240	693
A4244	279
A4245	669
A4248	655
A4251	285
A4256	726
A4259	705
A4261	867
A4263	836
A4264	592
A4265	837
A4268	191
A4269	422
A4271	615
A4272	774
A4273	751
A4274	563
A4277	485
A4278	867
A4279	635
A4280	639
A4281	837
A4283	873
A4285	89
A4286	249
A4289	603
A4291	220
A4292	681
A4293	158
A4294	782
A4295	742
A4296	181
A4298	531
A4301	338
A4302	43
A4303	394
A4305	719
A4309	780
A4313	646
A4315	357
A4316	383
A4317	201

Prod.-No.	Page
A4319	669
A4320	871
A4321	534
A4322	281
A4324	875
A4325	188
A4327	496
A4329	744
A4331	200
A4332	725
A4335	393
A4336	686
A4337	69
A4338	529
A4340	170
A4341	488
A4344	77
A4347	262
A4348	798
A4350	853
A4360	266
A4361	308
A4365	365
A4372	806
A4376	420
A4378	873
A4379	310
A4388	344
A4392	674
A4393	382
A4394	798
A4396	636
A4399	826
A4400	505
A4402	325
A4406	322
A4410	498
A4411	487
A4412	323
A4420	584
A4422	741
A4423	215
A4425	503
A4427	180
A4431	200
A4434	547

Prod.-No.	Page
A4437	200
A4438	133
A4439	691
A4441	613
A4442	40
A4443	384
A4444	387
A4445	470
A4448	83
A4450	778
A4451	617
A4452	617
A4454	559
A4456	740
A4458	612
A4462	509
A4466	560
A4473	193
A4476	243
A4478	392
A4480	426
A4487	193
A4488	130
A4489	40
A4492	205
A4493	251
A4495	603
A4498	279
A4504	807
A4506	761
A4508	119
A4509	373
A4510	498
A4517	549
A4518	702
A4522	728
A4527	119
A4531	211
A4532	843
A4534	749
A4541	588
A4553	86
A4554	387
A4555	720
A4556	213
A4557	777

Prod.-No.	Page
A4558	386
A4560	92
A4561	782
A4565	740
A4568	404
A4569	712
A4573	818
A4575	81
A4576	166
A4577	836
A4579	135
A4584	804
A4586	372
A4589	212
A4592	402
A4595	41
A4596	743
A4598	876
A4599	40
A4600	605
A4604	739
A4610	559
A4614	855
A4617	296
A4619	111
A4630	645
A4632	114
A4637	136
A4640	773
A4643	542
A4653	811
A4660	761
A4661	726
A4662	561
A4663	515
A4667	797
A4669	378
A4670	812
A4673	872
A4674	514
A4680	679
A4681	570
A4682	846
A4683	386
A4686	791
A4687	282

Prod.-No.	Page
A4688	681
A4689	178
A4691	877
A4692	591
A4699	172
A4701	539
A4703	378
A4706	317
A4707	547
A4709	276
A4712	71
A4713	455
A4716	93
A4718	553
A4725	837
A4727	134
A4730	531
A4731	532
A4732	735
A4733	548
A4734	776
A4735	454
A4737	182
A4738	122
A4740	792
A4743	847
A4744	312
A4746	135
A4747	750
A4748	128
A4750	755
A4753	388
A4756	393
A4759	566
A4760	451
A4761	524
A4762	492
A4763	219
A4773	458
A4778	489
A4779	746
A4780	177
A4781	213
A4783	425
A4786	677
A4787	244

Prod.-No.	Page
A4789	469
A4802	190
A4803	153
A4804	511
A4807	831
A4810	805
A4811	277
A4813	570
A4815	817
A4816	586
A4817	41
A4818	133
A4820	425
A4825	220
A4827	871
A4831	515
A4837	506
A4839	647
A4840	519
A4849	541
A4850	59
A4854	372
A4857	727
A4858	361
A4859	750
A4861	41
A4863	342
A4865	605
A4866	670
A4868	842
A4872	781
A4873	286
A4880	362
A4881	772
A4883	620
A4885	334
A4886	571
A4887	408
A4891	606
A4892	316
A4897	794
A4904	419
A4906	282
A4907	472
A4911	129
A4915	253

Prod.-No.	Page
A4922	685
A4925	426
A4928	558
A4930	333
A4937	416
A4939	726
A4942	794
A4951	282
A4956	536
A4963	529
A4965	537
A4968	162
A4969	350
A4970	270
A4972	500
A4973	166
A4974	846
A4975	840
A4976	872
A4978	868
A4983	56
A4984	510
A4985	539
A4987	836
A4989	57
A4992	758
A4993	733
A4998	504
A4999	465
A5001	799
A5002	334
A5007	333
A5011	647
A5020	755
A5023	335
A5025	117
A5027	745
A5030	134
A5034	626
A5039	419
A5041	616
A5042	331
A5047	616
A5048	722
A5055	829
A5059	741

Prod.-No.	Page
A5060	599
A5062	686
A5063	130
A5065	845
A5069	221
A5070	868
A5076	504
A5080	508
A5084	354
A5096	169
A5097	313
A5104	104
A5109	342
A5115	753
A5116	507
A5117	756
A5127	513
A5158	639
A5162	642
A5166	876
A5169	90
A5171	415
A5172	297
A5175	460
A5176	301
A5177	505
A5179	301
A5180	800
A5181	817
A5182	298
A5183	817
A5185	298
A5186	793
A5187	303
A5188	790
A5189	689
A5190	845
A5191	320
A5192	795
A5193	297
A5194	323
A5196	304
A5197	303
A5198	300
A5199	268
A5200	597

Prod.-No.	Page
A5202	265
A5203	790
A5204	351
A5205	344
A5206	161
A5207	321
A5208	301
A5209	794
A5210	124
A5211	685
A5212	495
A5213	790
A5214	597
A5216	320
A5217	304
A5218	599
A5219	451
A5220	323
A5221	676
A5222	554
A5223	324
A5225	117
A5226	303
A5227	140
A5228	295
A5229	323
A5230	450
A5231	793
A5232	595
A5233	554
A5234	849
A5235	324
A5237	825
A5238	325
A5239	826
A5240	554
A5241	795
A5242	825
A5243	827
A5244	794
A5246	775
A5247	836
A5248	826
A5250	825
A5252	382
A5253	297

Prod.-No.	Page
A5255	827
A5256	215
A5257	589
A5258	557
A5259	729
A5260	296
A5262	48
A5263	66
A5264	125
A5265	66
A5266	296
A5267	712
A5268	720
A5269	47
A5270	215
A5271	838
A5272	326
A5273	263
A5274	839
A5275	711
A5276	249
A5277	248
A5278	156
A5279	245
A5280	48
A5281	196
A5282	126
A5283	137
A5285	155
A5287	569
A5292	515
A5293	712
A5295	755
A5298	405
A5299	398
A5300	379
A5301	326
A5302	405
A5303	428
A5304	466
A5305	466
A5306	470
A5307	562
A5308	562
A5309	584
A5310	586

Prod.-No.	Page
A5311	498
A5313	692
A5314	702
A5315	719
A5316	719
A5319	466
A5321	47
A5322	528
A5324	504
A5326	191
A5329	504
A5336	631
A5337	283
A5338	670
A5345	371
A5347	429
A5350	110
A5355	408
A5356	413
A5368	411
A5412	174
A5418	325
A5422	634
A5423	479
A5424	653
A5434	793
A5438	127
A5441	479
A5448	201
A5456	808
A5457	514
A5459	210
A5470	851
A5474	687
A5476	811
A5481	588
A5485	181
A5488	606
A5537	630
A5540	833
A5549	355
A5564	330
A5581	79
A5589	324
A5595	302
A5598	717

Prod.-No.	Page
A5603	317
A5604	219
A5616	128
A5626	579
A5634	416
A5639	124
A5648	126
A5652	139
A5655	156
A5657	149
A5669	193
A5688	202
A5689	208
A5694	218
A5700	241
A5701	264
A5718	273
A5731	309
A5738	328
A5744	345
A5750	400
A5758	469
A5768	481
A5776	491
A5789	511
A5799	491
A5802	550
A5810	551
A5814	312
A5819	589
A5826	552
A5838	662
A5841	605
A5852	684
A5854	694
A5856	701
A5885	694
A5889	844
A5890	305
A5895	844
A5920	870
A5922	873
A5932	832
A6107	315
A6109	532
A6216	493

Prod.-No.	Page
A6220	612
A6245	809
A6246	809
A6248	457
A6253	540
A6259	180
A6273	134
A6274	728
A6276	782
A6277	651
A6279	687
A6280	665
A6284	194
A6285	875
A6286	492
A6287	507
A6288	214
A6289	425
A6292	735
A6297	516
A6300	274
A6304	278
A6306	839
A6307	494
A6315	500
A6316	837
A6318	837
A6320	420
A6324	509
A6327	492
A6328	631
A6329	465
A6331	252
A6338	853
A6352	108
A6354	607
A6361	288
A6362	177
A6393	634
A6402	587
A6406	644
A6408	471
A6414	507
A6415	87
A6417	140
A6420	821

Prod.-No.	Page
A6422	632
A6430	322
A6431	575
A6433	128
A6434	784
A6435	202
A6438	459
A6485	448
A6550	479
A6551	637
A6554	800
A6556	758
A6560	366
A6561	82
A6564	632
A6571	420
A6572	818
A6578	416
A6579	742
A6580	103
A6586	446
A6587	304
A6588	76
A6591	85
A6592	350
A6593	343
A6595	101
A6598	670
A6600	350
A6603	539
A6607	213
A6609	506
A6611	77
A6615	445
A6619	470
A6620	541
A6621	290
A6666	482
A6741	425
A6742	577
A6743	82
A6744	113
A6745	137
A6746	139
A6747	176
A6748	187

Prod.-No.	Page
A6749	212
A6751	312
A6752	326
A6753	374
A6754	397
A6755	410
A6756	374
A6757	513
A6758	709
A6759	857
A6760	373
A6762	430
A6763	709
A6764	694
A6765	709
A6766	718
A6768	577
A6769	261
A6770	849
A6771	831
A6775	124
A6778	641
A6779	583
A6782	786
A6783	786
A6784	786
A6785	787
A6786	787
A6787	787
A6788	787
A6789	788
A6790	788
A6791	788
A6792	788
A6793	789
A6794	675
A6795	455
A6798	367
A6799	208
A6801	580
A6803	675
A6804	183
A6805	90
A6806	91
A6807	404
A6808	849

Prod.-No.	Page
A6809	582
A6810	674
A6813	581
A6814	578
A6816	261
A6817	306
A6820	408
A6821	306
A6823	368
A6824	582
A6825	516
A6828	353
A6829	737
A6830	755
A6831	875
A6832	851
A6833	664
A6834	133
A6858	365
A6859	367
A6860	378
A6863	477
A6864	501
A6872	377
A6875	512
A6876	516
A6880	590
A6882	681
A6886	501
A6890	688
A6891	791
A6896	846
A6900	792
A6902	876
A6904	73
A6905	249
A6906	401
A6907	638
A6908	397
A6909	584
A6910	796
A6912	330
A6915	497
A6916	402
A6917	425
A6918	131

Prod.-No.	Page
A6919	131
A6920	787
A6921	183
A6925	833
A6926	411
A6927	323
A6929	411
A6932	156
A6933	649
A6934	50
A6935	347
A6936	111
A6937	544
A6938	544
A6939	245
A6940	186
A6941	184
A6942	188
A6943	210
A6944	245
A6945	183
A6946	111
A6947	685
A6948	109
A6949	109
A6950	188
A6951	245
A6952	346
A6953	345
A6954	379
A6956	210
A6957	398
A6958	487
A6959	319
A6960	475
A6961	491
A6962	245
A6963	347
A6964	380
A6965	490
A6966	478
A6967	490
A6968	475
A6969	555
A6970	327
A6971	500

Prod.-No.	Page
A6972	555
A6973	603
A6975	346
A6976	475
A6977	622
A6978	662
A6979	671
A6980	604
A6981	671
A6982	684
A6983	685
A6985	475
A6986	816
A6987	841
A6988	816
A6989	346
A6993	816
A6995	485
A6996	841
A6997	476
A6998	601
A6999	503
A7000	601
A7002	563
A7003	774
A7004	114
A7005	721
A7006	727
A7008	502
A7009	107
A7010	542
A7011	87
A7012	95
A7013	385
A7014	747
A7016	799
A7038	619
A7039	253
A7054	775
A7061	298
A7080	760
A7086	493
A7087	372
A7089	302
A7091	461
A7092	354

Prod.-No.	Page
A7095	60
A7099	447
A7100	60
A7101	449
A7134	449
A7135	446
A7136	448
A7137	450
A7138	454
A7140	450
A7146	726
A7148	446
A7150	448
A7153	691
A7154	661
A7158	450
A7211	459
A7213	590
A7215	322
A7220	712
A7222	322
A7226	399
A7243	104
A7248	286
A7249	706
A7252	448
A7258	58
A7261	731
A7271	505
A7274	656
A7279	711
A7282	137
A7311	630
A7312	619
A7313	572
A7318	717
A7326	514
A7350	608
A7398	857
A7402	480
A7405	587
A7409	303
A7413	380
A7416	643
A7419	93
A7421	833

Prod.-No.	Page	Prod.-No.	Page	Prod.-No.	Page	Prod.-No.	Page
A7424	631	A7615	618	A7669	864	A7733	299
A7425	631	A7617	861	A7670	257	A7734	472
A7428	802	A7619	632	A7671	567	A7735	672
A7438	632	A7622	862	A7672	864	A7736	295
A7448	819	A7623	867	A7673	585	A7737	365
A7449	632	A7624	861	A7674	258	A7739	512
A7451	49	A7626	773	A7675	859	A7740	62
A7455	836	A7627	467	A7680	105	A7741	379
A7456	287	A7628	860	A7681	452	A7742	759
A7459	481	A7629	258	A7682	116	A7745	471
A7490	410	A7630	215	A7684	218	A7746	596
A7492	108	A7631	212	A7685	136	A7747	585
A7495	201	A7632	211	A7686	354	A7749	331
A7496	213	A7633	112	A7688	247	A7750	142
A7503	543	A7634	861	A7690	580	A7751	596
A7507	113	A7635	73	A7695	868	A7752	62
A7508	220	A7636	267	A7696	452	A7754	379
A7516	447	A7637	862	A7697	489	A7755	299
A7518	650	A7638	192	A7698	529	A7756	473
A7524	533	A7639	294	A7699	592	A7757	672
A7527	803	A7640	863	A7700	257	A7758	295
A7535	187	A7641	258	A7701	267	A7759	119
A7538	687	A7643	863	A7702	142	A7777	300
A7564	847	A7644	468	A7704	297	A7778	473
A7578	863	A7645	576	A7705	472	A7779	673
A7581	861	A7646	862	A7706	672	A7780	486
A7583	861	A7647	452	A7708	447	A7781	62
A7585	861	A7649	863	A7710	295	A7782	512
A7587	862	A7650	110	A7711	487	A7784	81
A7589	861	A7651	474	A7714	804	A7786	198
A7591	862	A7652	863	A7715	524	A7787	138
A7592	537	A7653	453	A7716	383	A7788	89
A7593	859	A7654	863	A7717	299	A7789	592
A7596	862	A7656	863	A7718	472	A7800	300
A7597	621	A7657	257	A7719	672	A7801	473
A7598	862	A7658	864	A7720	294	A7802	673
A7600	123	A7659	371	A7721	524	A7803	576
A7601	859	A7660	864	A7722	366	A7804	336
A7603	859	A7661	280	A7724	549	A7806	456
A7605	860	A7662	864	A7725	61	A7808	675
A7606	812	A7663	683	A7726	299	A7809	141
A7607	860	A7664	864	A7728	511	A7811	69
A7608	483	A7665	375	A7729	432	A7812	830
A7609	860	A7666	452	A7730	556	A7813	689
A7612	860	A7667	859	A7731	62	A7814	196
A7614	860	A7668	267	A7732	596	A7816	150

Prod.-No.	Page
A7817	38
A7819	389
A7820	593
A7821	140
A7822	290
A7823	125
A7824	760
A7826	152
A7827	78
A7828	828
A7830	301
A7831	466
A7833	520
A7834	513
A7835	337
A7836	141
A7839	474
A7840	299
A7843	136
A7844	283
A7845	138
A7846	318
A7847	37
A7848	472
A7850	85
A7852	176
A7853	852
A7854	702
A7855	410
A7856	141
A7857	427
A7858	762
A7859	152
A7861	112
A7862	301
A7863	253
A7864	366
A7865	779
A7866	585
A7867	142
A7870	143
A7871	218
A7873	337
A7874	703
A7875	868
A7877	81

Prod.-No.	Page
A7878	300
A7879	198
A7880	813
A7881	143
A7888	474
A7889	773
A7890	689
A7891	159
A7892	78
A7895	87
A7897	152
A7900	681
A7901	90
A7906	75
A7907	152
A7910	593
A7912	142
A7913	290
A7914	484
A7918	789
A7920	779
A7921	378
A7923	143
A7924	848
A7927	601
A7929	583
A7930	141
A7931	343
A7932	673
A7934	711
A7937	143
A7938	309
A7940	487
A7941	676
A7943	874
A7945	779
A7947	510
A7949	874
A7950	152
A7951	757
A7953	426
A7956	810
A7960	855
A7961	164
A7962	719
A7971	834

Prod.-No.	Page
A7979	476
A7980	602
A7981	310
A7983	367
A8020	579
A8023	413
A8028	643
A8031	199
A8032	420
A8034	259
A8035	352
A8044	649
A8055	198
A8060	133
A8062	402
A8065	622
A8067	331
A8070	467
A8073	809
A8078	621
A8080	692
A8081	846
A8088	190
A8091	390
A8093	678
A8094	811
A8101	395
A8112	681
A8113	850
A8119	283
A8126	343
A8175	478
A8183	424
A8186	778
A8187	593
A8194	855
A8196	520
A8204	828
A8211	453
A8212	190
A8216	349
A8218	546
A8224	546
A8225	318
A8227	828
A8230	347

Prod.-No.	Page
A8231	705
A8232	546
A8233	389
A8234	348
A8236	521
A8238	522
A8239	683
A8240	248
A8241	704
A8242	349
A8246	453
A8247	434
A8249	441
A8250	545
A8251	683
A8252	348
A8253	599
A8254	439
A8255	544
A8256	555
A8257	352
A8258	441
A8259	600
A8260	438
A8261	521
A8263	349
A8264	545
A8265	485
A8266	440
A8267	556
A8268	348
A8269	438
A8270	369
A8271	546
A8272	564
A8273	439
A8275	683
A8276	349
A8277	435
A8278	545
A8279	564
A8280	352
A8281	368
A8282	600
A8283	682
A8284	369

Prod.-No.	Page
A8285	438
A8286	130
A8289	391
A8290	444
A8291	855
A8292	600
A8293	432
A8294	434
A8295	855
A8296	189
A8297	820
A8299	442
A8301	522
A8302	218
A8303	440
A8304	545
A8305	439
A8306	441
A8307	522
A8308	369
A8309	433
A8310	703
A8311	486
A8312	442
A8313	810
A8314	433
A8315	318
A8316	442
A8317	522
A8318	704
A8319	433
A8320	820
A8321	435
A8322	522
A8323	435
A8324	819
A8325	391
A8326	442
A8327	317
A8328	453
A8329	436
A8330	391
A8331	854
A8332	521
A8333	553
A8334	437

Prod.-No.	Page
A8335	370
A8336	842
A8337	436
A8338	208
A8339	843
A8340	444
A8341	389
A8342	443
A8343	207
A8344	228
A8345	436
A8346	443
A8347	521
A8348	444
A8349	225
A8350	350
A8351	441
A8352	190
A8353	485
A8354	458
A8355	444
A8356	153
A8357	207
A8359	325
A8360	553
A8361	363
A8363	231
A8364	695
A8366	554
A8370	695
A8436	229
A8444	202
A8448	229
A8452	228
A8454	856
A8459	430
A8461	228
A8467	227
A8473	228
A8482	227
A8489	227
A8491	631
A8495	229
A8501	229
A8502	49
A8506	229

Prod.-No.	Page
A8507	116
A8509	597
A8510	857
A8511	789
A8512	504
A8513	229
A8514	597
A8517	131
A8519	229
A8523	213
A8525	698
A8528	578
A8529	711
A8530	433
A8531	587
A8532	153
A8533	408
A8534	67
A8536	291
A8540	125
A8541	824
A8542	439
A8543	578
A8544	434
A8545	434
A8546	437
A8547	440
A8548	440
A8554	231
A8555	326
A8556	697
A8567	232
A8568	347
A8569	801
A8570	240
A8571	272
A8574	828
A8577	239
A8583	237
A8587	709
A8589	236
A8590	270
A8594	233
A8595	271
A8599	232
A8600	351

Prod.-No.	Page
A8605	231
A8609	230
A8612	228
A8619	226
A8621	563
A8623	240
A8624	800
A8625	449
A8628	239
A8630	775
A8633	237
A8634	629
A8637	235
A8640	321
A8641	233
A8642	188
A8644	684
A8645	232
A8647	449
A8649	231
A8651	621
A8654	230
A8655	801
A8656	189
A8658	228
A8662	226
A8665	224
A8668	685
A8669	223
A8670	191
A8671	813
A8673	222
A8674	249
A8676	261
A8677	240
A8678	708
A8679	621
A8680	256
A8681	239
A8684	709
A8685	237
A8687	866
A8688	262
A8689	236
A8690	621
A8691	189

Prod.-No.	Page
A8692	375
A8693	233
A8695	376
A8697	232
A8700	399
A8701	230
A8704	512
A8705	230
A8707	582
A8709	226
A8710	271
A8711	874
A8712	479
A8713	224
A8716	489
A8717	223
A8720	512
A8721	222
A8723	600
A8724	153
A8725	240
A8728	556
A8729	239
A8730	319
A8731	582
A8733	237
A8734	601
A8735	348
A8737	235
A8738	718
A8740	269
A8741	233
A8742	352
A8743	718
A8744	189
A8745	232
A8746	866
A8748	369
A8749	226
A8750	866
A8753	225
A8755	153
A8756	370
A8757	223
A8761	222
A8762	432

Prod.-No.	Page
A8765	234
A8769	232
A8770	432
A8773	226
A8777	224
A8781	223
A8782	434
A8785	222
A8786	435
A8789	235
A8791	435
A8793	225
A8795	436
A8797	224
A8799	437
A8801	223
A8802	437
A8805	235
A8807	438
A8809	225
A8811	439
A8813	224
A8814	440
A8817	222
A8819	443
A8821	235
A8822	271
A8823	443
A8825	225
A8826	471
A8829	224
A8831	489
A8833	223
A8836	521
A8837	235
A8841	225
A8842	545
A8845	224
A8847	578
A8849	222
A8850	600
A8853	236
A8854	663
A8857	236
A8859	703
A8861	236

Prod.-No.	Page
A8863	703
A8865	236
A8866	710
A8869	227
A8870	271
A8871	819
A8873	226
A8875	820
A8877	239
A8881	231
A8882	854
A8886	114
A8887	854
A8889	325
A8892	227
A8894	699
A8898	398
A8899	115
A8902	682
A8907	327
A8922	110
A8930	389
A8934	488
A8943	602
A8946	698
A8963	71
A8964	696
A8965	699
A8967	699
A8968	533
A8970	696
A8971	249
A8973	695
A8974	262
A8978	376
A8981	696
A8982	376
A8985	699
A8986	376
A8989	513
A8990	699
A8992	584
A8993	663
A8994	598
A8995	700
A8998	699

Prod.-No.	Page
A8999	306
A9001	238
A9002	115
A9004	670
A9005	238
A9006	697
A9007	513
A9009	238
A9010	697
A9011	550
A9013	238
A9014	697
A9017	238
A9018	698
A9019	598
A9020	806
A9021	237
A9022	700
A9024	46
A9025	234
A9026	700
A9027	115
A9029	234
A9030	698
A9032	858
A9033	234
A9034	698
A9035	339
A9037	234
A9038	698
A9041	233
A9042	699
A9045	230
A9046	699
A9049	230
A9080	854
A9131	637
A9158	637
A9162	594
A9166	595
A9177	594
A9191	594
A9199	595
A9201	594
A9202	594
DS-1	43

Prod.-No.	Page
DS-2	45
DS-3	47
DS-4	132
DS-5	205
DS-6	251
DS-7	859
DS-9	285

Prod.-No.	Page
DS-10	288
DS-11	288
DS-12	289
DS-13	337
DS-14	535
DS-15	277
DS-16	677

Prod.-No.	Page
DS-17	807
DS-18	822
DS-20	280
DS-21	416
DS-22	669
MB007	517
MB008	518

Prod.-No.	Page
MB009	518
MB010	518
MB011	518
MB012	519
MB1AX	517

CAS-No.	Prod.-No.	Page
50-00-0		355
50-01-1		392
50-02-2	A2153	289
50-07-7	A2190	547
50-14-6	A2089	856
50-23-7	A8032	420
50-63-5	A2143	207
50-69-1	A2219	688
50-70-4		758
50-76-0	A1489	66
50-81-7		120
50-89-5	A2265	267
50-99-7		377
51-21-8	A7686	354
51-35-4		427
52-90-4		254
53-84-9	A1124	556
54-21-7	A4273	751
54-42-2	A3152	456
54-47-7	A3831	678
54-62-6	A3766	90
54-64-8	A1278	812
55-21-0	A2158	131
56-34-8	A3838	805
56-40-6		386
56-41-7		74
56-45-1		710
56-75-7		201
56-81-5		385
56-84-8		121
56-85-9		381
56-86-0		380
56-89-3		255
56-92-8		408
56-95-1	A3785	203
57-09-0		194
57-11-4	A4640	773
57-13-6		850
57-48-7		364
57-50-1		776
57-55-6		664
57-83-0	A0677	663
57-88-5		208
58-08-2	A1611	175
58-22-0	A0671	802
58-27-5	A2091	528

CAS-No.	Prod.-No.	Page
58-56-0		678
58-58-2	A2856	676
58-60-6	A7941	676
58-61-7	A0833	67
58-63-9	A0698	452
58-85-5		140
58-86-6	A2241	873
58-96-8	A0666	851
59-05-2	A3798	536
59-14-3	A2139	160
59-23-4		367
59-30-3		354
59-67-6	A0963	567
60-00-4		313
60-01-5	A8574	828
60-11-7	A3290	288
60-12-8	A7597	621
60-18-4		848
60-24-2		529
60-29-7		278
60-32-2		87
60-33-3	A4778	489
60-35-5	A1464	38
61-54-1	A3850	843
61-73-4		538
61-90-5		486
62-55-5	A7606	812
62-56-6		814
63-68-3		535
63-74-1		777
63-91-2		620
64-17-5		335
64-18-6		359
64-19-7		39
64-72-2	A1946	207
64-75-5	A2228	805
64-86-8	A4082	221
65-22-5	A0960	678
65-46-3	A0814	256
65-71-4	A0670	815
65-85-0		133
66-22-8	A0667	849
66-81-9	A0879	252
66-84-2	A6872	377
67-03-8		811
67-42-5	A0878	318

CAS-No.	Prod.-No.	Page
67-43-6	A6304	278
67-48-1	A0785	209
67-56-1		533
67-63-0		666
67-64-1		44
67-66-3		204
67-68-5		286
67-99-2	A7665	375
68-11-1		813
68-12-2		284
68-19-9		856
68-41-7		253
68-94-0	A0700	431
69-52-3		108
69-57-8	A7000	601
69-65-8		515
69-72-7		701
69-78-3	A3378	291
69-89-6	A0665	868
69-93-2	A2562	851
70-18-8	A2084	383
71-00-1		409
71-23-8		665
71-30-7	A0815	258
71-36-3		170
71-41-0		109
71-43-2		132
71-44-3	A0672	760
71-67-0	A4450	778
72-18-4		852
72-19-5		814
72-48-0	A2125	79
72-57-1	A0668	842
73-22-3		844
73-24-5	A0939	67
73-32-5		464
73-40-5	A0702	394
73-78-9	A2870	488
74-79-3		117
75-05-8		45
75-09-2		275
75-12-7		358
75-36-5	A3752	48
75-47-8	A2819	456
75-57-0	A3839	808
75-60-5	A1497	175

CAS-No.	Prod.-No.	Page
75-65-0		172
75-75-2	A7524	533
75-77-4	A1658	834
75-78-5	A1655	283
76-03-9		829
76-05-1		833
76-59-5	A2340	163
76-60-8	A1051	159
76-61-9	A0462	815
77-06-5	A4586	372
77-09-8	A1132	617
77-52-1	A7853	852
77-86-1		835
77-92-9		213
77-93-0	A6925	833
78-78-4		537
78-83-1		463
78-92-2		171
78-93-3		538
78-96-6	A4285	89
79-01-6		830
79-06-1		51
79-09-4	A4319	669
79-14-1		387
79-21-0	A4600	605
79-33-4	A3509	476
81-25-4	A2834	209
81-27-6	A6758	709
81-88-9	A3930	686
83-07-8	A1523	86
83-44-3	A2835	264
83-46-5	A4305	719
83-88-5		687
85-61-0	A0812	221
85-83-6	A4557	777
87-11-6	A7880	813
87-66-1	A2802	678
87-69-4		795
87-81-0	A6891	791
87-89-8	A1716	452
87-99-0	A4378	873
88-89-1	A2520	628
89-83-8	A4054	815
90-65-3	A7927	601
91-20-3	A1547	558
91-22-5	A4688	681

CAS-No.	Prod.-No.	Page
92-31-9	A3842	823
92-32-0	A1406	679
92-36-4	A7507	113
94-13-3	A6598	670
95-14-7	A4727	134
95-54-5	A4883	620
96-47-9	A7503	543
97-59-6	A7784	81
97-65-4	A2857	467
97-67-6		510
98-88-4		135
98-92-0	A0959	566
99-76-3	A6603	539
99-96-7		425
100-10-7	A8119	283
100-37-8	A4811	277
100-51-6		135
100-52-7	A0753	131
102-71-6		831
102-76-1	A4683	386
103-47-9		199
105-59-9	A4965	537
106-50-3	A4199	620
106-51-4	A0394	134
107-06-2		274
107-15-3	A0382	341
107-21-1		341
107-22-2	A2169	388
107-35-7		796
107-41-5	A6620	541
107-83-5		406
107-88-0	A5096	169
107-92-6	A2582	174
107-95-9		74
107-98-2	A4956	536
108-01-0	A5337	283
108-10-1		541
108-20-3		281
108-32-7	A4866	670
108-87-2	A7592	537
108-88-3		821
108-93-0	A0783	251
108-94-1		252
108-95-2		612
109-59-1	A4863	342
109-66-0		602

CAS-No.	Prod.-No.	Page
109-69-3		203
109-70-6	A2107	159
109-99-9		806
110-15-6		775
110-16-7	A1841	509
110-17-8		365
110-18-9	A1148	801
110-26-9		143
110-27-0	A6329	465
110-44-1	A3529	758
110-54-3		406
110-63-4	A4340	170
110-71-4	A4687	282
110-80-5	A0413	339
110-82-7		250
110-83-8	A0784	252
110-86-1		677
111-03-5	A8992	584
111-30-8	A4316	383
111-42-2	A2155	277
111-46-6	A1289	278
111-65-9	A6801	580
111-76-2		342
111-87-5		581
112-30-1	A3212	261
112-63-0	A4108	540
112-80-1	A4420	584
113-24-6		750
113-98-4		601
114-07-8	A2275	331
115-39-9	A2331	161
115-40-2	A1059	160
115-69-5	A1158	88
117-39-5	A3415	680
117-92-0	A2322	680
118-00-3	A0701	394
118-34-3	A6752	326
119-36-8		542
120-47-8	A6593	343
120-82-1	A0526	830
121-44-8		832
121-54-0		133
121-57-3	A8186	778
121-79-9	A5338	670
122-99-6		619
123-31-9		425

CAS-No.	Prod.-No.	Page
123-42-2	A3541	272
123-51-3		463
123-86-4		172
123-91-1		289
124-04-9	A2581	68
124-20-9	A0674	759
124-68-5	A0838	89
125-20-2	A1738	816
125-31-5	A2478	872
126-96-5	A5259	729
127-07-1	A2173	429
127-08-2		635
127-09-3		720
127-17-3		679
127-18-4	A4584	804
127-19-5	A2488	282
127-40-2	A1283	498
127-47-9	A2094	856
128-00-7	A2959	477
128-37-0	A3777	173
128-44-9	A4036	694
128-53-0	A2251	343
130-01-8	A2071	708
130-40-5	A0601	352
131-48-6	A1002	711
134-03-2	A5048	722
134-11-2	A4301	338
136-47-0	A7714	804
137-08-6		590
137-16-6		480
137-40-6	A1931	670
138-52-3	A3269	700
138-59-0	A7279	711
139-05-9	A2402	729
139-13-9		572
140-72-7	A3782	193
141-43-5	A2161	337
141-53-7	A0380	733
141-78-6		339
141-82-2	A3330	510
142-82-5		403
143-07-7	A5423	479
143-66-8	A5020	755
143-74-8		618
144-48-9	A1666	455
144-55-8		734

CAS-No.	Prod.-No.	Page
144-68-3	A1282	874
146-14-5	A2163	351
146-68-9	A6248	457
147-85-3		663
148-24-3	A2172	428
149-29-1	A7910	593
150-13-0		86
150-25-4		138
150-90-3	A2136	775
151-21-3		705
153-18-4	A6764	694
154-23-4	A4325	188
154-60-9	A3737	663
154-61-0	A3718	662
154-87-0	A4653	811
156-57-0	A1546	254
288-32-4		445
298-14-6		645
298-83-9	A1243	562
298-93-1	A2231	811
298-96-4	A6246	809
299-11-6	A2212	611
299-27-4	A3133	376
302-17-0	A4431	200
302-79-4	A6947	685
302-95-4	A1531	729
303-47-9	A7690	580
303-98-0	A5069	221
305-53-3	A2097	456
305-72-6	A6408	471
306-67-2	A7080	760
313-67-7		118
314-13-6	A4388	344
321-30-2	A1596	67
328-42-7	A2201	588
328-50-7	A1138	470
329-98-6	A0999	630
333-20-0		661
333-93-7	A2217	677
334-50-9	A0673	759
361-09-1	A0979	728
367-51-1		755
367-93-1		458
369-07-3	A1272	573
371-47-1	A4462	509
372-75-8		215

CAS-No.	Prod.-No.	Page
389-08-2	A1894	558
402-40-4	A3763	145
402-71-1	A1801	824
446-72-0	A2202	372
458-37-7	A5277	248
464-49-3	A3503	184
465-99-6		399
469-32-9		397
471-34-1		177
471-66-9	A5285	155
472-15-1	A5283	137
473-98-3	A6745	137
474-25-9	A1690	199
475-80-9		119
476-32-4	A5281	196
477-30-5	A4347	262
477-73-6	A0427	700
478-43-3		686
479-91-4	A6748	187
479-98-1	A2054	122
480-10-4		469
480-18-2		796
480-19-3	A5304	466
480-36-4	A8716	489
480-41-1	A5307	562
480-44-4	A7817	38
480-54-6	A4922	685
480-81-9	A2072	708
481-72-1	A2052	82
482-36-0		431
485-35-8	A8680	256
485-47-2	A0902	567
487-60-5	A4760	451
488-81-3	A4337	69
490-46-0	A3894	329
491-67-8	A5264	125
491-70-3	A3424	498
493-52-7	A2392	542
497-19-8		724
499-30-9	A8695	376
502-65-8	A5311	498
504-17-6	A4670	812
513-77-9		126
517-28-2	A3865	400
518-18-5	A8750	866
518-47-8	A1161	849

CAS-No.	Prod.-No.	Page
518-67-2	A6361	288
518-75-2	A7630	215
518-82-1	A2056	326
520-12-7	A8723	600
520-18-3		468
520-26-3	A5302	405
520-33-2	A5298	405
520-36-5		112
521-31-3	A2185	497
521-62-0	A3405	363
522-12-3	A2069	680
525-79-1	A4907	472
527-07-1	A4993	733
528-50-7	A3196	191
528-58-5	A8674	249
528-66-5	A3272	559
531-55-5	A6775	124
532-32-1	A2399	723
532-40-1	A5476	811
533-31-3	A1009	710
533-67-5	A1885	267
534-16-7	A1524	713
536-46-9	A4873	286
538-75-0	A0407	277
540-72-7	A5295	755
540-84-1		464
541-15-1	A2141	186
547-25-1	A6896	846
547-58-0	A0581	540
548-04-9	A2061	430
548-24-3	A0821	328
548-62-9	A0691	247
553-24-2	A0683	564
553-54-8	A4762	492
554-13-2	A6327	492
554-88-1	A8982	376
554-91-6	A7087	372
556-50-3		388
557-04-0	A2816	506
557-05-1		877
565-73-1	A3273	589
569-58-4	A3768	122
573-58-0	A2385	241
578-74-5		113
579-13-5	A7747	585
583-50-6	A5042	331

CAS-No.	Prod.-No.	Page
584-08-7		637
584-42-9	A2295	80
585-29-5	A3100	832
585-95-5	A8993	663
587-98-4	A2825	532
590-46-5	A7282	137
593-84-0		393
603-45-2	A8080	692
604-32-0	A0809	209
604-35-3	A0808	208
604-44-4	A3786	206
605-65-2	A1119	259
606-68-8	A1393	557
608-66-2	A4379	310
616-91-1	A4207	48
617-48-1		509
624-18-0	A8078	621
631-61-8		93
631-69-6	A5278	156
632-69-9	A4439	691
632-85-9	A8746	866
632-99-5	A1795	364
633-03-4	A2298	158
635-39-2	A4303	394
635-65-4		139
637-01-4	A8073	809
637-39-8	A1424	832
643-84-5	A8720	512
652-78-8	A3431	390
653-14-5	A7086	493
657-27-2		499
666-52-4	DS-2	45
684-93-5	A6431	575
703-95-7	A1174	353
737-31-5	A3769	730
751-94-0	A6560	366
759-73-9	A1566	575
811-98-3	DS-14	535
819-83-0	A2253	386
830-81-9	A1563	560
830-96-6	A2565	451
845-10-3	A2401	542
859-18-7	A7697	489
860-22-0	A2366	451
863-57-0	A3804	734
865-49-6	DS-5	205

CAS-No.	Prod.-No.	Page
867-55-0	A2184	476
867-56-1	A1004	477
868-14-4	A4839	647
868-63-3	A3795	281
872-50-4		541
877-24-7	A1644	647
886-86-2	A6415	87
893-36-7	A7711	487
910-31-6	A0810	209
911-77-3	A5030	134
921-60-8	A6860	378
922-32-7	A2247	246
927-20-8	A4558	386
961-07-9	A2152	265
965-03-7	A6273	134
970-74-1	A2010	329
987-65-5	A1348	68
987-78-0	A6607	213
989-38-8	A5474	687
989-51-5		330
996-50-9	A1661	834
997-43-3	A1797	471
999-97-3	A1662	405
1052-38-6	A2176	146
1064-48-8	A1399	84
1066-33-7		96
1076-43-3	DS-4	132
1077-28-7	A4065	490
1109-28-0	A7782	512
1114-34-7	A6864	501
1118-90-7	A3765	85
1119-34-2		118
1119-94-4	A4147	306
1132-61-2		549
1135-40-6		184
1163-67-3	A3115	558
1182-34-9	A3965	254
1184-05-0	A0811	209
1184-16-3	A1394	557
1185-53-1		837
1186-52-3	DS-1	43
1214-39-7	A7685	136
1229-55-6	A1297	777
1239-45-8	A1151	338
1257-08-5	A2012	329
1263-89-4	A7699	592

CAS-No.	Prod.-No.	Page
1264-72-8	A2922	221
1302-78-9		130
1303-96-4		754
1305-62-0		180
1309-48-4		506
1310-58-3		649
1310-66-3	A2570	493
1310-73-2		737
1314-13-2		876
1314-56-3		627
1317-33-5	A1281	548
1317-38-0	A4030	243
1324-80-7	A2310	80
1330-20-7		871
1330-43-4		754
1332-58-7		470
1336-21-6	A4560	92
1343-88-0	A8035	352
1344-09-8	A3537	751
1344-28-1	A4448	83
1393-48-2	A8671	813
1393-92-6	A2390	474
1397-89-3		107
1400-61-9	A3811	580
1401-55-4	A3619	792
1404-19-9	A7673	585
1404-93-9		853
1405-10-3		563
1405-20-5	A0890	633
1405-41-0		372
1405-69-2	A2568	123
1405-87-4	A0623	125
1405-97-6	A2170	390
1465-25-4	A2782	561
1476-53-5	A1944	578
1492-18-8	A5549	355
1516-08-1	DS-13	337
1523-11-1	A1816	560
1596-56-1	A3291	560
1609-47-8	A0881	268
1619-16-5	A2063	429
1634-04-4		174
1665-00-5	DS-15	277
1670-14-0	A1380	132
1693-74-9	DS-17	807
1733-12-6		247

CAS-No.	Prod.-No.	Page
1735-17-7	DS-6	251
1762-95-4		103
1772-03-8	A6859	367
1787-61-7	A1346	330
1811-31-0	A7451	49
1829-00-1	A2437	818
1866-15-5	A3754	49
1871-22-3	A6245	809
1919-91-1	A1889	559
1936-15-8	A1404	585
1949-78-6	A6886	501
2001-95-8	A2238	853
2001-96-9	A3809	575
2013-26-5	A1945	470
2037-26-5	DS-18	822
2044-56-6	A1385	493
2058-46-0	A5257	589
2068-80-6	A4738	122
2206-26-0	DS-3	47
2206-27-1		288
2207-68-3	A1832	575
2216-51-5	A5322	528
2219-31-0	A3780	184
2244-11-3	A4575	81
2270-40-8	A8571	272
2303-01-7	A2376	246
2306-27-6	A8743	718
2353-45-9	A1401	345
2386-52-9	A2810	713
2386-53-0	A1019	305
2386-54-1	A1012	170
2386-57-4	A1268	533
2415-24-9	A3395	187
2437-29-8		508
2438-80-4	A4365	365
2492-87-7	A1269	574
2498-50-2	A2126	86
2530-85-0	A3797	532
2553-71-1	A2330	159
2591-17-5	A1029	496
2595-98-4	A6900	792
2611-67-8		249
2611-82-7	A4291	220
2645-08-1	A3770	134
2646-71-1	A1395	557
2679-89-2	DS-20	280

CAS-No.	Prod.-No.	Page
2687-91-4	A7931	343
2706-75-4	A3805	734
2747-05-9	A4012	551
2800-80-8	A2311	162
2816-24-2	A1270	574
2832-45-3	A1014	408
3012-65-5		96
3051-09-0	A2398	553
3121-70-8	A3155	561
3150-24-1	A1271	574
3184-13-2		586
3244-88-0	A2166	364
3326-32-7	A2162	351
3371-27-5	A2057	368
3374-05-8	A4928	558
3387-36-8	A3853	851
3458-28-4	A2187	516
3459-18-5	A1932	573
3483-11-2	A1941	43
3483-12-3		310
3486-66-6	A5279	245
3513-03-9	A3784	148
3536-49-0	A8187	593
3569-10-6	A2073	852
3593-13-8	A3761	68
3615-37-0	A6858	365
3618-43-7	A4673	872
3624-46-2	A2003	268
3625-57-8	A3918	567
3671-99-6	A3789	378
3681-93-4	A3394	857
3773-07-7	A7716	383
3810-74-0		774
3811-04-9		637
3844-45-9	A5564	330
3895-92-9	A7814	196
3952-78-1	A2866	79
3952-98-5		719
3992-42-5	A2151	264
4016-63-1	A1754	161
4033-27-6	A3794	281
4090-29-3	A5258	557
4197-25-5	A1407	777
4227-99-0	A4662	561
4261-42-1	A6755	410
4264-83-9	A1442	575

CAS-No.	Prod.-No.	Page
4265-07-0	A2271	623
4272-74-6	A1799	823
4356-52-9	A8692	375
4430-20-0	A1058	206
4432-31-9	A3237	531
4463-44-9		872
4472-41-7	DS-9	285
4499-86-9	A0943	809
4569-00-0	A4015	560
4578-31-8	A1622	68
4618-18-2	A0887	479
4800-94-6	A1491	185
4856-78-5	A7859	152
5115-71-9	A5300	379
5119-48-2	A8687	866
5144-89-8	A3826	611
5204-74-0	A3846	832
5263-02-5	A6902	876
5324-84-5	A1016	581
5325-43-9	A1021	332
5329-14-6		85
5373-11-5	A4510	498
5399-58-6	A2178	664
5451-09-2	A1731	88
5470-11-1		426
5550-12-9	A3758	394
5574-97-0		802
5625-37-6		628
5704-04-1		831
5743-28-2	A4780	177
5785-44-4	A2324	180
5793-89-5	A4737	182
5794-13-8		121
5934-29-2		409
5949-29-1		214
5950-69-6	A5368	411
5965-83-3		779
5968-70-7	A5280	48
5970-45-6		875
5990-32-9	A1793	876
6004-24-6	A0742	194
6009-70-7		102
6014-81-9	A8670	191
6020-87-7	A3132	246
6080-56-4	A7608	483
6100-05-6	A2379	641

CAS-No.	Prod.-No.	Page
6104-58-1	A3480	242
6104-59-2	A1092	242
6106-04-3	A0443	381
6106-24-7		753
6108-17-4	A3478	492
6112-76-1	A7698	529
6131-90-4		720
6131-98-2	A2544	737
6131-99-3	A2140	175
6132-02-1		725
6132-04-3		728
6138-23-4	A1742	828
6147-53-1		219
6153-56-6		587
6156-78-1	A2606	513
6160-78-7	A1274	552
6160-80-1	A1129	552
6226-79-5	A1405	635
6303-21-5		431
6342-17-2	A2074	272
6363-53-7		511
6381-59-5		660
6381-92-6		314
6409-77-4	A8020	579
6484-52-2		101
6487-48-5		657
6578-06-9	A1117	130
6754-58-1	A7875	868
6757-06-8	A3788	256
6805-41-0	A7749	331
6807-83-6	A7971	834
6833-84-7	A7803	576
6850-28-8	A2234	838
6882-01-5	A6765	709
6892-68-8	A1102	309
6906-38-3	A8688	262
6926-08-5	A5299	398
6976-37-0		147
6992-39-8	A5271	838
7048-04-6		255
7059-24-7	A7632	211
7080-50-4		200
7084-24-4	A7888	474
7114-03-6	A1403	539
7177-48-2	A7492	108
7228-78-6		582

CAS-No.	Prod.-No.	Page
7240-37-1	A7850	85
7240-90-6		868
7291-22-7	DS-16	677
7298-84-2	A4411	487
7308-90-9	A6828	353
7365-44-8	A1084	802
7365-45-9		401
7365-82-4		38
7380-40-7	A7843	136
7411-49-6	A0596	273
7423-31-6	A1400	762
7439-95-4	A0575	502
7440-44-0	A0746	195
7446-20-0		877
7447-40-7		638
7447-41-8		492
7449-74-3	A1653	543
7487-88-9	A4837	506
7488-55-3	A2593	817
7512-17-6	A2554	49
7553-56-2		454
7558-79-4		735
7585-39-9	A2147	250
7601-90-3		605
7631-86-9		711
7631-99-4		746
7632-00-0		747
7646-85-7		875
7647-01-0	A6578	416
7647-10-1	A0862	590
7647-14-5		726
7647-15-6		724
7647-17-8		192
7664-38-2		626
7664-39-3		420
7664-93-9		780
7681-11-0		654
7681-49-4		733
7681-52-9		745
7681-55-2	A5027	745
7681-57-4		732
7681-82-5		745
7695-91-2		821
7697-37-2		569
7698-05-7	DS-21	416
7704-34-9	A1687	780

CAS-No.	Prod.-No.	Page
7722-64-7		658
7722-76-1		95
7722-84-1		423
7727-43-7	A4911	129
7727-54-0		102
7727-73-3		752
7732-18-5		857
7757-79-1		656
7757-82-6		751
7757-83-7		752
7758-02-3		636
7758-05-6		654
7758-11-4		646
7758-87-4	A0779	182
7758-89-6	A4134	242
7758-98-7	A2358	346
7758-99-8		244
7761-88-8		713
7772-98-7		755
7774-34-7		179
7778-50-9		641
7778-77-0		642
7778-80-5		660
7779-25-1	A1556	505
7782-61-8		460
7782-63-0		461
7783-18-8	A7243	104
7783-20-2		103
7783-28-0		97
7783-35-9		529
7783-83-7		99
7783-85-9		97
7784-13-6		82
7784-24-9		636
7784-26-1	A6561	82
7789-00-6	A4222	640
7789-20-0	DS-7	859
7789-23-3		645
7789-33-5	A2779	457
7789-79-9	A5485	181
7790-28-5	A3806	746
7791-07-3		749
7791-11-9	A4240	693
7791-13-1		219
7791-18-6		503
7791-20-0		565

CAS-No.	Prod.-No.	Page
7803-63-6		97
8001-85-2	A4803	153
8002-33-3	A4682	846
8002-43-5		483
8002-48-0	A3215	510
8002-74-2	A1809	592
8004-87-3	A2397	543
8004-92-0	A4292	681
8007-47-4	A0569	184
8009-03-8	A4350	853
8012-95-1		591
8047-15-2		702
8049-47-6	A0585	590
8063-24-9	A2952	51
9000-70-8	A1693	370
9000-86-6	A6964	380
9000-90-2	A6949	109
9000-97-9		379
9001-00-7	A1548	158
9001-37-0	A4669	378
9001-60-9	A6960	475
9001-62-1	A4090	490
9001-63-2		500
9001-73-4	A3824	591
9001-75-6	A4289	603
9001-77-8	A3829	622
9001-78-9		623
9001-99-4		689
9002-07-7	A4148	842
9002-08-8	A4532	843
9002-18-0		70
9002-61-3	A6943	210
9002-89-5	A9011	550
9002-92-0	A1381	157
9002-93-1		840
9003-11-6	A1288	629
9003-39-8		634
9003-98-9	A3778	305
9003-99-0	A6969	555
9004-06-2	A6959	319
9004-07-3		211
9004-54-0	A2249	269
9004-95-9	A1669	157
9005-32-7	A5581	79
9005-38-3	A3249	79
9005-64-5		846

CAS-No.	Prod.-No.	Page
9005-65-6		847
9005-84-9		772
9006-59-1		75
9007-43-6	A7674	258
9007-49-2		701
9007-73-2	A6989	346
9011-18-1		270
9012-36-6		71
9013-20-1	A1495	774
9013-34-7	A2149	260
9013-53-0	A3823	579
9026-12-4	A3933	690
9029-44-1	A3377	120
9029-60-1	A3386	491
9035-75-0	A3975	212
9035-81-8		843
9036-06-0	A3459	671
9036-19-5	A3848	841
9041-08-1	A3004	401
9041-35-4	A8507	116
9041-92-3	A6936	111
9041-93-4	A3773	149
9048-46-8		75
9050-36-6	A4804	511
9076-44-2	A2144	211
9087-69-8	A6957	398
9087-70-1	A2132	116
10010-67-0	A1080	628
10016-20-3	A2146	250
10025-69-1		817
10025-70-4	A7054	775
10025-77-1		459
10026-24-1	A4825	220
10028-24-7		735
10030-67-8	A7721	524
10030-80-5	A6876	516
10030-85-0	A4336	686
10031-43-3	A4476	243
10034-85-2	A8183	424
10034-96-5		514
10034-99-8		507
10035-04-8		178
10035-10-6		411
10039-26-6		478
10039-32-4		736
10043-11-5	A1471	155

CAS-No.	Prod.-No.	Page
10043-35-3		154
10043-52-4		177
10048-13-2	A7889	773
10049-21-5		731
10060-12-5	A5459	210
10101-41-4		183
10101-89-0		749
10101-97-0		566
10102-17-7		756
10102-18-8	A2776	751
10102-40-6		746
10114-58-6	A2272	147
10125-13-0	A2787	243
10127-02-3	A1398	51
10190-99-5	A4527	119
10191-18-1		136
10191-41-0	A2232	821
10196-18-6	A5166	876
10231-84-2	A1559	573
10236-47-2	A5308	562
10277-43-7	A5441	479
10279-57-9	A2374	712
10294-26-5		717
10294-42-5		191
10323-20-3	A5025	117
10326-27-9		127
10344-94-2	A1028	574
10361-29-2	A0799	94
10378-23-1		317
10416-59-8	A1652	147
10534-89-1	A3492	405
10597-60-1	A5303	428
11024-24-1	A1905	280
11027-65-7	A6904	73
11028-71-0	A1884	484
11050-94-5	A7866	585
11080-17-4	A6972	555
11089-65-9	A2242	846
11096-37-0	A3008	827
11103-72-3	A3488	694
11141-17-6	A3419	123
12054-85-2		100
12124-97-9		94
12125-02-9		94
12125-28-9		505
12230-71-6	A2923	129

CAS-No.	Prod.-No.	Page
12627-35-9	A7980	602
12627-53-1	A4277	485
12650-69-0	A4718	553
12771-72-1	A7960	855
12772-57-5	A7900	681
12954-41-9	A1114	869
13268-67-2	A8678	708
13292-46-1	A2220	688
13419-61-9	A1018	260
13446-18-9		505
13446-34-9		514
13463-67-7	A1900	818
13472-35-0		730
13472-36-1		750
13477-34-4		182
13478-00-7		565
13478-10-9		459
13517-20-9		748
13598-36-2		627
13721-39-6	A2196	748
13746-66-2		644
14101-04-3	A3913	363
14110-64-6	A7700	257
14431-43-7		377
14459-95-1		644
14463-68-4	A2191	561
14464-46-1		707
14533-63-2	A1011	664
14552-35-3	A1804	243
14623-54-2	A4963	529
14684-37-8	A1536	852
14807-96-6	A0620	792
14930-96-2	A7657	257
14933-08-5	A1460	778
14933-09-6	A1162	778
15121-94-5	A3412	662
15244-36-7		506
15291-75-5	A6753	374
15291-76-6	A6756	374
15291-77-7	A3389	374
15471-17-7	A4215	677
15503-86-3	A8668	685
15548-60-4	A1242	869
15674-58-5	A8974	262
15879-93-3	A1993	200
16009-13-5	A0942	400

CAS-No.	Prod.-No.	Page
16052-06-5	A1071	402
16178-48-6	A0948	68
16373-93-6	A2150	263
16423-68-0	A0558	331
16561-29-8	A0903	622
16595-80-5	A4341	488
16674-78-5		502
16727-30-3		512
16731-55-8		643
16788-57-1	A4001	646
16940-66-2		723
16941-32-5	A1997	375
16961-25-4	A1649	804
16980-89-5	A0455	274
17019-92-0	A5306	470
17372-87-1	A0822	328
17397-89-6	A7638	192
17465-86-0	A2148	250
17466-45-4	A1488	610
17575-22-3	A8712	479
17606-72-3	A6875	512
17629-30-0	A6882	681
17647-74-4	DS-12	289
17912-87-7	A8728	556
17924-92-4	A7949	874
17927-65-0		83
18156-74-6	A1659	834
18172-33-3	A7863	253
18282-10-5	A2594	817
18378-89-7	A2189	547
18439-24-2	A0813	221
18449-82-6	A4810	805
18472-87-2	A8065	622
18618-55-8	A4268	191
18642-44-9	A5263	66
18719-76-1	A8971	249
18829-70-4	A2055	188
18851-33-7	A4076	611
18883-66-4	A4272	774
18996-35-5	A6274	728
18997-57-4	A1273	552
19041-09-9	A8986	376
19046-60-7	A6823	368
19210-12-9	A3392	398
19473-49-5		381
19545-26-7	A7623	867

CAS-No.	Prod.-No.	Page
19817-92-6	A2237	851
20196-67-2	A8738	718
20229-56-5	A7824	780
20283-92-5	A5313	692
20310-89-8	A5314	702
20350-15-6	A2138	156
20554-84-1	A7789	592
20562-02-1	A7951	757
20624-25-3	A2171	730
20816-12-0	A7405	587
21259-20-1	A7918	789
21462-39-5	A7684	218
21637-25-2		466
21736-83-4	A3834	759
21967-41-9	A5282	126
21973-56-8	A8978	376
22144-76-9	A7670	257
22144-77-0	A7641	258
22155-91-5	A4680	679
22202-68-2	A1139	471
22739-76-0	DS-22	669
22767-49-3	A1709	603
22767-50-6	A1015	404
22862-76-6	A7650	110
22888-70-6	A6766	718
22919-26-2	A1275	553
23109-05-9	A1485	84
23110-15-8	A7737	365
23273-91-8	A1137	388
23481-50-7	A1279	285
23491-45-4	A0740	145
23491-52-3	A0741	146
23513-08-8	A4509	373
23513-14-6	A3408	373
23646-68-6	A3808	573
24259-59-4	A6890	688
24280-93-1	A3801	555
24390-14-5	A2951	308
24394-09-0	A7871	218
24589-78-4	A1654	543
24634-61-5	A2377	660
25102-12-9	A4220	314
25249-54-1	A2257	633
25316-40-9	A4361	308
25322-68-3		630
25339-99-5	A2225	776

CAS-No.	Prod.-No.	Page
25389-94-0		469
25425-12-1	A8523	213
25535-16-4	A2261	669
25561-30-2	A1663	147
25952-53-8	A1438	313
26239-55-4	A1061	67
26305-03-3	A2205	604
26544-34-3	A2053	113
26628-22-8	A1430	723
26645-35-2	A3176	610
26873-85-8		350
26934-87-2	A7855	410
27013-76-9		399
27013-91-8	A2060	400
27025-41-8	A2243	383
27061-78-5	A7635	73
27580-13-8	A4610	559
27821-45-0	A3852	851
27848-80-2	A0982	476
27871-49-4		539
28305-25-1		181
28500-00-7	A8676	261
28537-70-4	A7816	150
28540-82-1	A8655	801
28608-75-5	A5310	586
28633-45-6		460
28643-80-3	A7671	567
28718-90-3		259
28822-58-4	A0695	464
28836-03-5	A5350	110
28978-02-1	A8734	601
28983-56-4	A1545	50
29836-26-8		581
29915-38-6		792
30525-89-4	A3813	592
30562-34-6	A7659	371
30827-99-7	A1421	69
30925-07-6	A0622	256
30931-67-0	A1088	37
31282-04-9	A5347	429
31430-18-9	A1999	576
32449-92-6	A7754	379
32503-27-8		803
32619-42-4		584
32638-88-3	A3932	678
33069-62-4	A4667	797

CAS-No.	Prod.-No.	Page
33401-87-5	A6880	590
33570-04-6	A6746	139
33864-99-2	A2124	78
34393-59-4	A3781	256
34487-61-1	A4233	619
34523-28-9	A8034	259
34612-38-9	A7739	512
34620-76-3	A7728	511
34722-90-2	A2335	163
34725-61-6		162
35013-72-0	A7702	142
35192-74-6	A1017	576
35245-26-2	A4454	559
35556-70-8	A1810	623
35891-70-4	A7730	556
36011-19-5	A7629	258
36476-29-6	A0687	551
36519-25-2	A8621	563
36546-50-6	A3755	50
36653-82-4	A3595	193
37288-57-6	A4712	71
37326-33-3		410
37682-72-7	A2129	111
38183-12-9	A2164	353
38412-46-3	A6743	82
38710-26-8	A8684	709
38953-85-4	A5305	466
38966-21-1	A7633	112
39012-20-9	A2067	627
39028-27-8	A7806	456
39156-67-7	A7661	280
39432-56-9	A5301	326
39450-01-6	A3830	674
39537-23-0	A3198	75
39665-12-8		499
39946-25-3	A6109	532
40070-59-5	A2309	163
43053-62-9	A7924	848
45738-97-4	A7729	432
50722-38-8	A8502	49
50909-86-9	A7508	220
51481-10-8	A4360	266
51805-45-9	A2233	838
51811-82-6	A0909	373
52665-69-7	A2110	37
53123-88-9	A7663	683

CAS-No.	Prod.-No.	Page
53411-70-4	A1825	623
54549-23-4	A6824	582
54827-17-7	A3840	808
54970-72-8	A3098	274
55750-62-4	A7897	152
55779-48-1	A2817	220
55954-61-5	A2068	676
56001-37-7	A1803	394
56092-81-0	A1304	457
56092-82-1	A2177	457
56401-20-8	A4703	378
57186-25-1	A7820	593
57282-49-2	A6315	500
57444-62-9	A8644	684
57757-57-0	A7938	309
58477-85-3	A3793	272
58626-38-3	A7833	520
58846-77-8	A3208	261
58880-19-6	A7812	830
59122-55-3	A5890	305
60529-33-1	A3643	363
60539-23-3	A5272	326
60940-34-3	A4744	312
60984-57-8	A3772	145
61276-17-3	A5265	66
61303-13-7	A3790	462
61336-70-7	A7680	105
62069-75-4	A7913	290
62625-21-2	A2436	815
62758-13-8	A2830	684
62851-42-7	A8070	467
62996-74-1	A7626	773
63231-63-0	A3931	688
63449-41-2		131
63450-15-7	A4880	362
64431-96-5		148
64485-93-4	A4802	190
64742-49-0	A4632	114
64820-99-1	A6759	857
64887-73-6	A4984	510
64987-85-5	A7962	719
65162-13-2	A3799	536
65391-42-6	A2137	137
65501-24-8	A5603	317
65710-07-8	A7682	116
66009-10-7	A7715	524

CAS-No.	Prod.-No.	Page
66575-29-9	A2165	363
66640-86-6	A7809	141
66701-25-5	A2157	311
66778-17-4	A1537	332
66905-23-5	A6259	180
67416-61-9	A5262	48
67526-95-8	A2229	810
68181-17-9	A7742	759
68189-43-5	A1081	635
68303-40-2	A1642	510
68399-77-9	A1078	550
68399-78-0	A1072	403
68399-79-1	A1075	108
68399-80-4	A1066	290
68399-81-5	A1083	793
68412-54-4	A1694	577
68528-80-3	A6621	290
68807-90-9	A1826	618
69227-93-6		306
69256-54-8	A7681	452
69847-45-6	A2838	848
69984-73-2	A6742	577
70024-90-7	A6611	77
70331-82-7	A3277	802
70539-42-3	A7846	318
70831-56-0	A6749	212
70872-29-6	A7831	466
71010-52-1	A5345	371
71119-22-7	A1077	550
71119-23-8		532
71376-34-6	A7724	549
71888-67-0	A6825	516
71953-77-0	A7914	484
72040-63-2	A7836	141
72200-76-1	A1848	839
72741-87-8	A2269	789
72979-70-5	A6956	210
73049-73-7	A2235	845
73285-50-4	A2268	266
73463-39-5	A1064	185
74299-50-6	A2002	263
74938-88-8	A0998	114
75277-39-3		402
75520-41-1	A3753	48
75621-03-3		195
75747-14-7	A7877	81

CAS-No.	Prod.-No.	Page
76233-81-3	A4466	560
76455-82-8	A7891	159
76836-02-7	A1140	628
76896-80-5	A7828	828
76931-93-6	A7854	702
77108-40-8	A6987	841
77377-52-7	A1656	173
78111-17-8	A2200	583
78617-12-6	A6807	404
78832-65-2	A0952	345
79642-50-5	A7822	290
79831-76-8	A2267	187
80307-12-6	A7819	389
81012-87-5	A2145	256
81012-89-7	A1823	561
81025-04-9	A6863	477
81028-91-3	A1507	364
81029-05-2	A4293	158
81117-26-2	A0411	375
81397-67-3	A2051	47
82436-77-9	A7961	164
82473-24-3	A1100	195
82494-09-5		261
82692-93-1	A1496	823
82854-37-3	A6751	312
84100-15-2	A3280	559
84478-11-5	A2276	395
85138-49-4	A1160	129
85169-32-0	A5274	839
85261-19-4	A3893	524
85261-20-7	A4761	524
85316-98-9	A1386	524
85618-21-9	A1145	582
85721-33-1	A4589	212
86303-22-2	A1698	264
86393-32-0		212
87081-35-4	A7780	486
87090-18-4	A6978	662
87095-89-4	A4915	253
88191-84-8	A6945	183
88497-87-4	A8989	513
88497-88-5	A9007	513
88899-55-2	A7823	125
89889-52-1	A7856	141
91053-39-3	A7745	471
91796-88-2	A7696	452

CAS-No.	Prod.-No.	Page
92921-24-9	A7920	779
93919-41-6	A2004	265
93982-72-0	A2306	79
96702-03-3	A5814	312
97161-97-2	A7627	467
99570-78-2	A7644	468
100037-69-2	A1511	629
100938-10-1	A3764	84
102185-33-1	A1116	870
102568-47-8	A4286	249
102783-51-7	A2001	264
103404-75-7	A1006	497
103404-87-1	A8062	402
103476-89-7	A2183	488
104987-11-3	A8600	351
104987-12-4	A7759	119
105140-23-6	A1136	185
107200-92-0	A6942	188
108068-98-0	A7651	474
108321-42-2	A6798	367
108340-81-4	A7653	453
109276-34-8	A7821	140

CAS-No.	Prod.-No.	Page
110044-82-1	A6804	183
111072-31-2	A2240	870
114162-64-0	A1113	869
114460-21-8		176
115408-94-1	A1494	572
115457-83-5	A1384	399
116183-64-3	A8999	306
116355-83-0	A7722	366
116355-84-1	A7864	366
116970-50-4	A2256	395
117464-70-7	A1003	129
117961-20-3	A4517	549
119616-38-5	A7750	142
119942-99-3	A2214	624
120685-11-2	A8634	629
126643-37-6	A7839	474
127062-22-0	A7923	143
128446-35-5	A0367	428
133052-90-1	A1022	146
135027-59-7	A7666	452
136632-32-1	A6921	183
138182-20-4	A1110	692

CAS-No.	Prod.-No.	Page
138182-21-5	A1109	691
140663-38-3	A2215	395
141176-92-3	A6946	111
142760-33-6	A7647	452
144110-43-0	A1144	502
145224-94-8		531
150849-52-8	A2549	867
159954-33-3	A1111	692
161617-45-4	A7695	868
165542-15-4	A6741	425
170552-39-3		849
183506-66-3	A7861	112
207300-70-7	A7741	379
207605-40-1	A1013	603
209266-80-8	A2563	583
238074-03-8	A8459	430
264624-38-6	A5273	263
301206-84-8	A7808	675
303136-82-5	A4274	563
441769-43-3	A5269	47

A			
A23187	37	3-Acetyl- β -boswellic acid HPLC grade	48
4-Bromo-A23187 see 4-Bromo-A23187 <i>BioChemica</i>	159	3-Acetyl-11-keto- β -boswellic acid HPLC grade	48
A23187 calcium magnesium salt <i>BioChemica</i>	37	Acetyl chloride <i>BioChemica</i>	48
7AAD see 7-Aminoactinomycin D <i>BioChemica</i>	85	N-Acetylchondrosamine see N-Acetyl-D-galactosamine	49
AA-dUTP see Deoxyribonucleotides with aminolinkers	267	Acetyl-S-CoA see Acetyl-Coenzyme A trithium salt <i>BioChemica</i>	48
17AAG see 17-(Allylamino)-17-demethoxy-geldanamycin <i>BioChemica</i>	81	Acetyl-Coenzyme A trithium salt <i>BioChemica</i>	48
ABTS® <i>BioChemica</i>	37	N-Acetyl-L-cysteine <i>BioChemica</i>	48
Aburamycin B see Chromomycin A3 <i>BioChemica</i>	211	3-Acetyldeoxynivalenol	49
Acacetin HPLC grade	38	3 ^B -O-(4-O-Acetyl-2,6-dideoxy-3-C-methyl- α -L-arabino-hexopyranosyl)-7-methylolivomycin D see Chromomycin A3 <i>BioChemica</i>	211
Acacetin-7-rutinoside see Linarin HPLC grade	489	3-Acetyl don see 3-Acetyldeoxynivalenol	49
ACES	38	N-Acetyl-D-galactosamine	49
Acetamide Molecular biology grade	38	N-Acetyl-D-glucosamine <i>BioChemica</i>	49
N-(2-Acetamido)-2-aminoethanesulfonic acid see ACES	38	N-Acetyl-L-leucyl-L-leucyl-L-methioninal see Calpain Inhibitor II	183
2-Acetamido-2-deoxy-D-galactose see N-Acetyl-D-galactosamine	49	N-Acetyl-L-leucyl-L-leucyl-L-norleucinal see Calpain Inhibitor I	183
2-Acetamido-2-deoxy-D-glucose see N-Acetyl-D-glucosamine <i>BioChemica</i>	49	N-Acetylneuraminic acid see Sialic acid <i>BioChemica</i>	711
N-(2-Acetamido)-iminodiacetic acid see ADA Buffer grade	67	Acetylthiocholine iodide <i>BioChemica</i>	49
2-Acetamido-3-mercaptopropionic acid see N-Acetyl-L-cysteine <i>BioChemica</i>	48	N-Acetyl-L-tyrosine ethyl ester monohydrate (ATEE) <i>BioChemica</i>	50
Acetic acid ($\geq 90\%$)	39	3 α -Acetyl vomitoxin see 3-Acetyldeoxynivalenol	49
Acetic acid ($>50\% - \leq 80\%$)	40	Achromycin hydrochloride see Tetracycline hydrochloride	805
Acetic acid (25% - $< 50\%$)	41	Acid blue 9 disodium salt see Erioglaucine (C.I. 42090)	330
Acetic acid 10% pure	41	Acid blue 93 (C.I. 42780)	50
Acetic acid - Standard volumetric solutions	42	Acid Fuchsin see Fuchsin acidic disodium salt (C.I. 42685)	364
Acetic acid : Chloroform 3 : 2 - Mixture (v/v) pure	43	α_1 -Acid Glycoprotein, human	50
Acetic acid D ₄	43	recombinant Mouse acidic Fibroblast Growth Factor see rM aFGF	348
Acetic acid amide see Acetamide Molecular biology grade	38	recombinant Human basic acidic Fibroblast Growth Factor see rHu aFGF bioconfident grade	347
Acetic acid-n-butylester see n-Butyl acetate	172	Acid Mixture Sulfuric acid 96% : Phosphoric acid 85% (1 : 1, v/v) p. A.	50
Acetic acid calcium salt hydrate see Calcium acetate hydrate	176	Acidol see Betaine hydrochloride pure	137
Acetic acid chloride see Acetyl chloride <i>BioChemica</i>	48	Acid Orange 10 see Orange G (C.I. 16230)	585
Acetic acid cobalt(II) salt see Cobalt(II) acetate tetrahydrate	219	Acid Red 18 see Cochenille Red (C.I. 16255)	220
Acetic acid dimethylamide see N,N-Dimethylacetamide pure	282	Acid Red 51 see Erythrosin B (C.I. 45430)	331
Acetic acid ethylester see Ethyl acetate	339	Acid Red 94 see Rose Bengal (C.I. 45440)	691
Acetic acid magnesium salt tetrahydrate see Magnesium acetate tetrahydrate	502	Acid violet 19 see Fuchsin acidic disodium salt (C.I. 42685)	364
Acetic acid-4-methylumbelliferyl ester see MUAcetate <i>BioChemica</i>	551	Ac-Leu-Leu-Met-al see Calpain Inhibitor II	183
Acetic acid 1-naphthyl ester see 1-Naphthyl acetate <i>BioChemica</i>	560	Ac-Leu-Leu-Nle-al see Calpain Inhibitor I	183
Acetic acid 2-naphthyl ester see 2-Naphthyl acetate <i>BioChemica</i>	560	Acridine orange (C.I. 46005)	51
Acetic acid potassium salt see Potassium acetate	635	Acridine orange zinc chloride double salt see Acridine orange (C.I. 46005)	51
Acetic acid sodium salt see Sodium acetate anhydrous	720	Acriflavine hydrochloride <i>BioChemica</i>	51
Acetic acid sodium salt - Solution see Sodium acetate - Solutions 3 M	721	Acrylamide crystalline	51
Acetic acid sodium salt - Solutions see Sodium acetate - Standard volumetric solutions	722	Acrylamide - Powder mixtures	52
Acetic acid sodium salt trihydrate see Sodium acetate trihydrate	720	Acrylamide - AquaPlus - Mixes	53
Aceto ester see Ethyl acetate	339	Acrylamide - Solutions	54
Acetoacetic acid lithium salt <i>BioChemica</i>	43	Acrylamide : Diacryloylpiperazine - Solution (40%) - Mix 39 : 1	58
Acetone	44	Acrylamide - Sequencing solutions	59
Acetone D ₆	45	Acrylamide - Sequencing solutions (DGGE)	60
Acetonitrile	45	Acrylamide - Sequencing buffer	60
Acetonitrile D ₃	47	Acrylamide - Diluent for sequencing gels	60
Acetopyrrothrin see Thiolutin <i>BioChemica</i>	813	Acrylamide - Sequencing kits	60
3 β -Acetoxy-5-cholestene see Cholesteryl acetate <i>BioChemica</i>	208	Acrylamide - Stacking gel buffer for protein gels (8X)	61
(3 α ,4 β)-3-Acetoxy-olean-12-en-23-oic acid see 3-Acetyl- α -boswellic acid	47	Acrylamide - Resolving gel buffer for protein gels (4X)	61
3 α -Acetoxy-urs-12-en-11-keto-23-oic acid see 3-Acetyl-11-keto- β -boswellic acid	48	Acrylamide 4K - Ready-to-use solutions acc. to Ahn "single gels"	61
(3 α ,4 β)-3 α -Acetoxy-urs-12-en-23-oic acid see 3-Acetyl- β -boswellic acid	48	Acrylamide 4K - Ready-to-use solutions for SDS-PAGE	62
Acetoxy valeric acid HPLC grade	47	Acrylamide 2K - Ready-to-use solutions for SDS-PAGE	63
6-O-Acetylacteoside HPLC grade	47	Acrylamide 4K - Ready-to-use solutions for non-denaturing DNA-PAGE	63
3-Acetyl- α -boswellic acid HPLC grade	47	Acrylamide 2K - Ready-to-use solutions for non-denaturing DNA-PAGE	64
	47	Acrylamide 4K - Ready-to-use solutions for denaturing DNA-PAGE	65
	47	Acrylamide 2K - Ready-to-use solutions for denaturing DNA-PAGE	65
	47	Acrylic acid amide see Acrylamide crystalline	51

α_1 -ACT see α_1 -Antichymotrypsin, human	111	Alcohol see Ethanol $\leq$ 70 %	335
Actein HPLC grade	66	Alcohol C ₃ see 1-Propanol	665
Acteoside HPLC grade	66	Alcohol dehydrogenase, bacterial Technical grade	78
Actidion see Cycloheximide <i>BioChemica</i>	252	Alcohol dehydrogenase, bacterial Technical grade	78
Actinomycin C ₁ see Actinomycin D <i>BioChemica</i>	66	Alcylphenylpolyethylene glycol see Triton® X-114 <i>BioChemica</i>	841
Actinomycin D <i>BioChemica</i>	66	Alginate acid <i>BioChemica</i>	79
Actionospectacin see Spectinomycin dihydrochloride pentahydrate <i>BioChemica</i>	759	Alginic acid sodium salt <i>BioChemica</i>	79
recombinant Human Activin A see rHu Activin A	67	Alizarin (C.I. 58000)	79
rHu Activin A	67	Alizarin complexone	79
ADA Buffer grade	67	Alizarin Fluorine blue see Alizarin complexone	79
Adenine <i>BioChemica</i>	67	Alizarin-3-methylamine-N,N-diacetic acid see Alizarin complexone	79
Adenine deoxyriboside see 2'-Deoxyadenosine monohydrate <i>BioChemica</i>	263	Alizarin red S (C.I. 58005)	79
Adenine-9- β -D-ribofuranoside see Adenosine <i>BioChemica</i>	67	Alizarin red S - Solution	80
Adenine sulfate <i>BioChemica</i>	67	Alizarin sulfonic acid disodium salt see Alizarin red S (C.I. 58005)	79
Adenosine <i>BioChemica</i>	67	Alizarin yellow GG (C.I. 14025)	80
Adenosine 5'-diphosphoric acid disodium salt dihydrate <i>BioChemica</i>	68	Alizarin yellow GG - Solution	80
Adenosine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	68	Alizarin yellow GG - Solution	80
Adenosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	68	Alizarin yellow GG - Solution	80
S-(5'-Adenosyl)-L-methionine iodide <i>BioChemica</i>	68	Alizarin yellow GG - Solution	80
ADH, bacterial Technical grade see Alcohol dehydrogenase, bacterial Technical grade	78	Alizarin yellow GG - Solution	80
Adipic acid for synthesis	68	Alkaline Lysis - Solution III	81
Adonite see Adonitol <i>BioChemica</i>	69	Alkaline potassium sodium tartrate - Solution see Fehling's Reagents	346
Adonitol <i>BioChemica</i>	69	Alkanes C ₅ see n-Pentane	602
ADP disodium salt dihydrate see Adenosine 5'-diphosphoric acid disodium salt dihydrate <i>BioChemica</i>	69	Alkylbenzyltrimethylammonium chloride see Benzalkonium chloride	131
ADP-Na ₂ see Adenosine 5'-diphosphoric acid disodium salt dihydrate <i>BioChemica</i>	68	Alkyltrimethylammonium bromide see Dodecyltrimethylammonium bromide <i>BioChemica</i>	306
Adriamycin hydrochloride see Doxorubicin hydrochloride <i>BioChemica</i>	308	Allantoin <i>BioChemica</i>	81
Adsorbent for chromatography see Florisil® for chromatography 60-100 mesh	352	Alloxan monohydrate	81
AESBF hydrochloride <i>BioChemica</i>	69	(all-trans)-Lycopin see Lycopin HPLC grade	498
AEDP	69	17-(Allylamino)-17-demethoxy-geldanamycin <i>BioChemica</i>	81
Aerosil see Silica powdered, pure DAB	712	Allyl glucosinolate see Sinigrin monohydrate	719
Aerosporin see Polymyxin B sulfate <i>BioChemica</i>	633	Allylthiourea - Solution (1 g/L) for BOD determination	82
AES see Taurine	796	Aloe-Emodin synthetic HPLC grade	82
Aescin see Escin <i>BioChemica</i>	331	Aloenin A HPLC grade	82
rM aFGF see rM aFGF	348	Alphazurine FG see Erioglaucine (C.I. 42090)	330
rHu aFGF see rHu aFGF	347	Alumen see Potassium aluminium sulfate dodecahydrate	636
Ag ₂ SO ₄ see Silver sulfate	717	Aluminium ammonium sulfate dodecahydrate pure USP	82
Agar	70	Aluminium chloride hexahydrate	82
Agar-Agar see Agar	70	Aluminium chloride hexahydrate - Solution (104.61 g/L)	83
β -Agarase <i>BioChemica</i>	71	Aluminium oxide 90 active neutral Chromatography grade	83
Agaroses for Gel electrophoresis	71	Aluminium potassium sulfate see Potassium aluminium sulfate dodecahydrate	636
Agar substitute gelling agent see Gellan gum	371	Aluminium sulfate hydrate crystalline	83
AgNO ₃ - Solutions see Silver nitrate - Solutions	714	Aluminium sulfate - Solution 30 % pure	83
AgNO ₃ - Standard volumetric solutions see Silver nitrate - Standard volumetric solutions	715	Aluminon see Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122
Agnusid HPLC grade	73	α -Amanitine	84
AGP see α_1 -Acid Glycoprotein, human	50	Amastatin hydrochloride	84
ALA see 5-Aminolevulinic acid hydrochloride <i>BioChemica</i>	88	Amebacilin see Fumagillin <i>BioChemica</i>	365
Alamethicin <i>BioChemica</i>	73	(+)-Amethopterin see Methotrexate <i>BioChemica</i>	536
Alaninamide see Thiostrepton <i>BioChemica</i>	813	4-Aminodiphenylmethanesulfonyl fluoride hydrochloride see APMSF hydrochloride <i>BioChemica</i>	114
Alanin-Aminotransferase see Glutamate Pyruvate Transaminase (GPT), human	380	Amido black 10 B (C.I. 20470)	84
β -Alanine	74	Amidosulfonic acid see Amidosulfuric acid	85
L-Alanine	74	Amidosulfonic acid - Solution see Amidosulfuric acid - Solution 20 % technical grade	85
L-Alanine dehydrogenase, bacterial Technical grade	75	Amidosulfuric acid	85
L-Alanine : 2-Oxoglutarate Aminotransferase see Glutamate Pyruvate Transaminase (GPT), human	380	Amidosulfuric acid - Solution 20 % Technical grade	85
L-Alanyl-L-glutamine Cell culture grade	75	Aminoacetic acid see Glycine	386
Albumins	75	7-Aminoactinomycin D <i>BioChemica</i>	85
Albumin Fraction V - Solution (10 %), sterile	78	L- α -Amino adipic acid see L-2-Amino adipic acid <i>BioChemica</i>	85
Alcian blue 8 GS (C.I. 74240)	78	L-2-Amino adipic acid <i>BioChemica</i>	85
Alcian blue 8 GX see Alcian blue 8 GS (C.I. 74240)	78	5-(3-Aminoallyl)-2'-deoxyuridin-5'-triphosphat trilithium salt see Deoxyribonucleotides with aminolinkers	267
	78	4-Aminoantipyrine <i>BioChemica</i>	86

4-Aminobenzamidine dihydrochloride see <i>p</i> -Aminobenzamidine dihydrochloride <i>BioChemica</i>	86	L-2-Amino-3-(imidazolyl-4)-propionic acid hydrochloride monohydrate see L-Histidine hydrochloride monohydrate	409
<i>p</i> -Aminobenzamidine dihydrochloride <i>BioChemica</i>	86	L-2-Amino-3-(indol-3)-propionic acid see L-Tryptophan	844
4-Aminobenzene sulfonamide see Sulfanilamide	777	2-Aminoisobutanol see 2-Amino-2-methyl-1-propanol Buffer grade	89
4-Aminobenzenesulfonic acid see Sulfanilic acid for synthesis	778	L-2-Amino-iso-hexanoic acid see L-Leucine	486
4-Aminobenzoic acid	86	2-Aminoisopropanol see 1-Amino-2-propanol pure	89
3-Aminobenzoic acid ethyl ester methanesulfonate <i>BioChemica</i>	87	Aminoisopropyl alcohol see 1-Amino-2-propanol pure	89
D(-)- α -Aminobenzylpenicillin see Ampicillin trihydrate Molecular biology grade	108	L-2-Amino-iso-valeric acid see L-Valine	852
D(-)- α -Aminobenzylpenicillin sodium salt see Ampicillin sodium salt	108	D-4-Amino-3-isoxazolidinone see D-Cycloserine	253
2-Amino-8-bromo-6-hydroxypurine see 8-Bromoguanosine <i>BioChemica</i>	161	5-Aminolevulinic acid hydrochloride <i>BioChemica</i>	88
N-(4-Aminobutyl)-2'-deoxyadenosine-5'-triphosphate tetralithium salt see Deoxyribonucleotides with aminolinkers	267	L-2-Amino-3-mercaptopropionic acid see L-Cysteine	254
6-Aminocaproic acid see ϵ -Aminocaproic acid	87	L-2-Amino-3-mercaptopropionic acid hydrochloride monohydrate see L-Cysteine hydrochloride monohydrate	255
ϵ -Aminocaproic acid	87	L-2-Amino-3-methylbutanoic acid see L-Valine	852
(3S)-7-Amino-1-chloro-3-tosylamino-2-heptanone hydrochloride see N _α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) <i>BioChemica</i>	823	4-Amino-10-methyl folic acid see Methotrexate <i>BioChemica</i>	536
2-Amino-2-deoxy-D-galactopyranose hydrochloride see D(+)-Galactosamine hydrochloride <i>BioChemica</i>	367	L-2-Amino-4-methylmercaptoputyric acid see L-Methionine	535
2-Amino-2-deoxy-D-glucose hydrochloride see D(+)-Glucosamine hydrochloride <i>BioChemica</i>	377	L-2-Amino-3-methylpentanoic acid see L-Isoleucine	464
4-Amino-9,10-dihydro-1,3-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid sodium salt see Nuclear fast red (C.I. 60760) Microscopy grade	579	2-Amino-2-methyl-1,3-propanediol Buffer grade	88
4-Amino-N,N-dimethylaniline dihydrochloride see N,N-Dimethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	286	2-Amino-2-methyl-1-propanol Buffer grade	89
4-Amino-1,5-dimethyl-2-phenyl-3H-pyrazolone see L-2-Amino adipic acid <i>BioChemica</i>	85	4-Amino-10-methylpteroyl-L-glutamic acid see Methotrexate <i>BioChemica</i>	536
2-Aminoethanesulfonic acid see Taurine	796	5-Amino-4-oxopentanoic acid hydrochloride see 5-Aminolevulinic acid hydrochloride <i>BioChemica</i>	88
2-Aminoethanol see Ethanolamine <i>BioChemica</i>	337	(S)-2-Aminopentanedioic acid sodium salt see L-Glutamic acid sodium salt monohydrate pure	381
N-[2-[2-(2-Aminoethoxy)ethoxy]ethyl] biotinamide	87	N-(5-Aminopentyl)biotinamide trifluoroacetate salt	89
2-Aminoethyl alcohol see Ethanolamine <i>BioChemica</i>	337	2-(p-Aminophenyl)-6-methylbenzothiazole see APMBT ultrapure	113
4-(2-Aminoethyl)-benzenesulfonyl fluoride hydrochloride see AEBSF hydrochloride <i>BioChemica</i>	69	L-2-Amino-3-phenylpropionic acid see L-Phenylalanine	620
3-[(2-Aminoethyl)dithio]propionic acid see AEDP	69	3-Aminophthalhydrazide see Luminol	497
3-(2-Aminoethyl)-indol see Tryptamine	843	1-Amino-2-propanol pure	89
N-(2-Aminoethyl)-isoquinoline-5-sulfonamide hydrochloride see H-9 <i>BioChemica</i>	395	2-Aminopropionic acid see L-Alanine	74
4-Aminofolic acid see Aminopterin <i>BioChemica</i>	90	3-Aminopropionic acid see β -Alanine	74
L-2-Aminoglutaric acid see L-Glutamic acid	380	N-(3-[2-[2-(3-Aminopropoxy)ethoxy]ethoxy]propyl)biotinamide hydrochloride	90
L-2-Aminoglutaric acid-5-amide see L-Glutamine	381	N-(3-Aminopropyl)-1,4-diaminobutane see Spermidine <i>BioChemica</i>	759
L-2-Amino-5-guanidino-n-valerianic acid see L-Arginine base	117	N-(3-Aminopropyl)-1,4-diaminobutane trihydrochloride see Spermidine trihydrochloride <i>BioChemica</i>	759
L-2-Amino-5-guanidino-n-valerianic acid hydrochloride see L-Arginine hydrochloride	118	Aminopterin <i>BioChemica</i>	90
(S)-2-Aminohexanedioic acid see L-2-Amino adipic acid <i>BioChemica</i>	85	4-Aminopteroyl-L-glutamic acid see Aminopterin <i>BioChemica</i>	90
6-Amino-n-hexanoic acid see ϵ -Aminocaproic acid	87	6-Aminopurine see Adenine <i>BioChemica</i>	67
N-(6-Aminoheptyl)-2'-deoxycytidine-5'-triphosphate tetralithium salt see Deoxyribonucleotides with aminolinkers	267	Aminosidin see Paromomycin sulfate <i>BioChemica</i>	592
α -Amino-p-hydroxybenzylpenicillin see Amoxicillin trihydrate <i>BioChemica</i>	105	L-2-Aminosuccinic acid see L-Aspartic acid	121
L-2-Amino-3-hydroxybutyric acid see L-Threonine	814	L-2-Aminosuccinic acid-4-amide see L-Asparagine monohydrate	121
N-[(2S,3R)-3-Amino-2-hydroxy-5-methyl-hexanoyl]-L-valyl-L-valyl-L-aspartic acid hydrochloride see Amastatin hydrochloride	84	5-Amino-1,2,3,4-tetrahydrophthalazine-1,4-dione see Luminol	497
2-Amino-2-(hydroxymethyl)-propane-1,3-diol see Tris	835	(S)-2-Amino-5-ureidopentanoic acid see L-Citrulline	215
N-[(2S,3R)-3-Amino-2-hydroxy-4-phenylbutyryl]-L-leucine hydrochloride see Bestatin hydrochloride <i>BioChemica</i>	137	L-2-Amino-5-ureidovaleric acid see L-Citrulline	215
L-2-Amino-3-(4-hydroxyphenyl)-propionic acid see L-Tyrosine	848	Ammediol see 2-Amino-2-methyl-1,3-propanediol Buffer grade	88
L-2-Amino-3-hydroxypropionic acid see L-Serine	710	Ammonia - Solutions $\geq 25\%$	90
2-Amino-6-hydroxypurine see Guanine <i>BioChemica</i>	394	Ammonia - Solutions (Concentrations: $\geq 10\%$ - $< 25\%$)	91
2-Amino-6-hydroxypurine hydrochloride see Guanine hydrochloride <i>BioChemica</i>	394	Ammonia - Solution 3.5 % p. A.	92
4-Amino-2-hydroxypyrimidine see Cytosine <i>BioChemica</i>	258	Ammonia - Standard volumetric Solution (1 M)	92
2-Aminohypoxanthine see Guanine <i>BioChemica</i>	394	Ammonium - Stock Solution	92
L-2-Amino-3-(imidazolyl-4)-propionic acid see L-Histidine base	409	Ammonium acetate	93
		Ammonium acetate - Solutions Molecular biology grade	93
		Ammonium aluminium sulfate see Aluminium ammonium sulfate dodecahydrate pure USP	82
		Ammonium-8-anilino-1-naphthalene sulfonate see 8-Anilino-naphthalene-1-sulfonic acid ammonium salt <i>BioChemica</i>	110
		Ammonium bicarbonate see Ammonium hydrogen carbonate	96
		Ammonium bisulfate see Ammonium hydrogen sulfate	97
		Ammonium bromide	94
		Ammonium carbonate pure Food grade	94
		Ammonium chloride	94
		Ammonium chloride - Solutions	95

sec.-Ammonium citrate see <i>di</i> -Ammonium hydrogen citrate	96	p-Anilinesulfonic acid see Sulfanilic acid for synthesis	778
Ammonium dihydrogen phosphate	95	8-Anilidonaphthalene-1-sulfonic acid ammonium salt	110
Ammonium heptamolybdate tetrahydrate see Ammonium molybdate tetrahydrate	100	<i>BioChemica</i>	
Ammonium hydrogen carbonate	96	3-(4-Anilinophenylazo)-benzenesulfonic acid sodium salt see Metanil yellow	532
<i>di</i> -Ammonium hydrogen citrate	96	Anisomycin <i>BioChemica</i>	110
<i>di</i> -Ammonium hydrogen phosphate	97	ANS-NH ₄ see 8-Anilidonaphthalene-1-sulfonic acid ammonium salt <i>BioChemica</i>	110
Ammonium hydrogen sulfate	97	Antibiotic 69895 A see Chromomycin A3 <i>BioChemica</i>	211
Ammonium hydroxide - Solution see Ammonia - Solutions ≥ 25 %	90	Antibiotic A300 see Trichostatin A <i>BioChemica</i>	830
Ammonium hydroxide solutions see Ammonia - Solutions (Concentrations: ≥ 10 % - < 25 %)	91	Antibiotic AM-2282 see Staurosporine <i>BioChemica</i>	773
Ammonium hydroxide solution see Ammonia - Solution 3.5 % p. A.	92	Antibiotic AY 22989 see Rapamycin <i>BioChemica</i>	683
Ammonium hydroxide - Standard volumetric solution see Ammonia - Standard volumetric solutions	92	Antibiotic B 599 see Chromomycin A3 <i>BioChemica</i>	211
Ammonium hyposulfite see Ammonium thiosulfate pure	104	Antibiotic G418 see G418 disulfate <i>BioChemica</i>	366
Ammonium ionophore see Nonactin <i>BioChemica</i>	576	Antibiotic G418 - Solution see G418 disulfate - Solution, sterile	367
Ammonium iron(II) sulfate hexahydrate	97	Antibiotic K178 see Nigericin sodium salt <i>BioChemica</i>	567
Ammonium iron(II) sulfate - Standard volumetric solutions	98	Antibiotic U-22324 see Alamethicin <i>BioChemica</i>	73
Ammonium iron(III) sulfate dodecahydrate	99	Antibody dilution buffer (detergent-free) see Immunoassay Buffer	446
Ammonium iron(III) sulfate - Solution approx. 40 % p. A.	99	Antibody dilution buffer (with detergent) see Immunoassay Buffer	446
Ammonium iron(III) sulfate - Standard volumetric solution (0.01 M)	100	Antibody stabilizer (PBS-based) see Immunoassay Buffer	446
Ammonium isothiocyanate see Ammonium thiocyanate	103	Antibody Stabilizer (Tris-based) see Immunoassay Buffer	446
Ammonium molybdate tetrahydrate	100	Antichlor see Sodium thiosulfate anhydrous	755
Ammonium molybdate - Solutions	100	α ₁ -Antichymotrypsin, human	111
Ammonium nitrate	101	Antifade	111
<i>di</i> -Ammonium oxalate monohydrate	102	Antimycin see Citrinin <i>BioChemica</i>	215
Ammonium peroxodisulfate see Ammonium persulfate	102	Antipain dihydrochloride <i>BioChemica</i>	111
Ammonium persulfate	102	Antirrhin see Cyanidin-3-rutinoside HPLC grade	249
<i>prim.</i> -Ammonium phosphate see Ammonium dihydrogen phosphate	95	α ₁ -Antitrypsin, human	111
Ammonium phosphate dibasic see <i>di</i> -Ammonium hydrogen phosphate	97	(+)-Aphidicolin <i>BioChemica</i>	112
Ammonium sulfate	103	Apicidin <i>BioChemica</i>	112
Ammonium sulfate - Solution 10 % pure	103	Apigenin	112
Ammonium thiocyanate	103	Apigenin-7-apiosylglucoside see Apiin HPLC grade	113
Ammonium thiocyanate - Solutions	104	Apigenin-7-glucoside	113
Ammonium thiocyanate - Standard volumetric solutions	104	Apigenin-4'-methyl ether see Acacetin HPLC grade	38
Ammonium thiosulfate pure	104	Apigetrin see Apigenin-7-glucoside	113
Amoxicillin trihydrate <i>BioChemica</i>	105	Apiin HPLC grade	113
Amoxycillin trihydrate see Amoxicillin trihydrate <i>BioChemica</i>	105	Apiosid see Apiin HPLC grade	113
AMP buffer see 2-Amino-2-methyl-1-propanol Buffer grade	89	APMBT ultrapure	113
AMPD buffer see 2-Amino-2-methyl-1,3-propanediol Buffer grade	88	APMSF hydrochloride <i>BioChemica</i>	114
AMP disodium salt dihydrate see Adenosine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	68	AppliClear-Water	114
Ampholyte	105	AppliClear (Xylene substitute)	114
Amphotericin B	107	AppliFect	114
Ampicillin sodium salt	108	AppliFect Insect	115
Ampicillin trihydrate Molecular biology grade	108	AppliFect LowTox	115
AMP-Na ₂ see Adenosine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	68	AppliFect SI	115
AMPSO Buffer grade	108	AppliQUA™ MBH see Mixed-bed resin MBH 100 (AppliQUA™)	547
Amygdalose see β-D-Gentiobiose	372	AppliSorb - Chemicals absorber	115
<i>n</i> -Amyl alcohol	109	AppliXchange-G25 M	116
α-Amylase from Pancreas, human	109	Apramycin sulfate <i>BioChemica</i>	116
α-Amylase from Saliva, human	109	Aprotinin <i>BioChemica</i>	116
Amylum solubile see Starch	772	APS see Ammonium persulfate	102
Aneurine hydrochloride see Thiamine hydrochloride	811	Aquabator-Clean™	117
Aneurine monophosphate chloride see Thiamine monophosphate chloride dihydrate <i>BioChemica</i>	811	D-Arabinose <i>BioChemica</i>	117
Aneurinepyrophosphoric acid see Thiamine pyrophosphate	811	Archin see Emodin HPLC grade	326
rHu Angiogenin-1 bioconfident grade	110	L-Arginine base	117
Angiotensin forming enzyme see Renin, human	684	L-Arginine hydrochloride	118
Anguidin see Diacetoxyscirpenol <i>BioChemica</i>	272	Aristolochic acid I	118
Anguidine see Diacetoxyscirpenol <i>BioChemica</i>	272	Aristolochic acid II	119
Aniline blue water-soluble see Acid blue 93 (C.I. 42780)	50	Aristolochic acid - Mixture of I and II	119
		Aristolochic acid sodium salt	119
		Aristolochin see Aristolochic acid I	118
		ASAT see Glutamate Oxaloacetate Transaminase (GOT), human	379
		Ascomycin <i>BioChemica</i>	119
		L-Ascorbat : oxygen oxidoreductase see Ascorbate oxidase from <i>Cucurbita spec.</i>	120
		Ascorbate oxidase from <i>Cucurbita spec.</i>	120

L-(+)-Ascorbic acid powdered	120	Barium carbonate	126
Ascorbic acid - Solution (40 g/L)	120	Barium chloride dihydrate	127
L-Ascorbic acid calcium salt dihydrate see Calcium L-ascorbate dihydrate pure Ph. Eur.	177	Barium chloride - Solutions	127
L-Asparagine monohydrate	121	Barium hydroxide octahydrate p. A.	129
Aspartate Aminotransferase see Glutamate Oxaloacetate Transaminase (GOT), human	379	Barium sulfate pure Ph. Eur.	129
L-Aspartate : 2-Oxoglutarate Aminotransferase see Glutamate Oxaloacetate Transaminase (GOT), human	379	Basic Brown 1 see Bismarck brown Y (C.I. 21000)	147
Aspartate Transaminase see Glutamate Oxaloacetate Transaminase (GOT), human	379	Basic Brown 4 see Bismarck brown R (C.I. 21010)	146
L-Aspartic acid	121	recombinant Human basic Fibroblast Growth Factor see rHu bFGF bioconfident grade	348
L-Aspartic acid magnesium salt pure Ph. Eur.	122	Basic Fuchsin see Fuchsin basic (C.I. 42510) Microscopy grade	364
AST see Glutamate Oxaloacetate Transaminase (GOT), human	379	Basic Green 1 see Brilliant green (C.I. 42040)	158
Astragalin see Kaempferol-3-glucoside	469	Basic Green 4 see Malachite green oxalate (C.I. 42000)	508
ATA see Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122	Basic Orange 14 see Acridine orange (C.I. 46005)	51
ATEE see N-Acetyl-L-tyrosine ethyl ester monohydrate (ATEE) <i>BioChemica</i>	50	Basic Red 1 see Rhodamine 6G (C.I. 45160)	687
ATP disodium salt see Adenosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	68	Basic Red 5 see Neutral red (C.I. 50040)	564
ATP-Na ₂ see Adenosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	68	Basic Rhodamine Yellow see Rhodamine 6G (C.I. 45160)	687
ATRA see Retinoic acid pure Ph. Eur.	685	Basic Violet 1 see Methyl violet (C.I. 42535)	543
Aucubin HPLC grade	122	BCECF <i>BioChemica</i>	129
Aucubosid see Aucubin HPLC grade	122	BCECF-AM <i>BioChemica</i>	129
Aureine see Senecionin HPLC grade	708	recombinant Human B-cell Activating Factor see rHu BAFF	125
Aureomycin see Chlorotetracycline hydrochloride <i>BioChemica</i>	207	BCIP <i>BioChemica</i>	130
Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122	BCP see 1-Bromo-3-chloropropane <i>BioChemica</i>	159
Autoclave-ExitusPlus™	123	rHu BDNF	130
Avidin <i>BioChemica</i>	123	Benedict's Reagent for the qualitative determination of sugars	130
Azadirachtin	123	Bengale rose see Rose Bengal (C.I. 45440)	691
Azalomycin M see Nigericin sodium salt <i>BioChemica</i>	567	Bentonite	130
Azidin yellow 5 G see Titan yellow (C.I. 19540)	818	Benzaldehyde for synthesis	131
3'-Azido-3'-deoxythymidine 5'-triphosphate tri(triethylammonium) salt	124	Benzalkonium chloride	131
2,2'-Azino-bis-(3-ethylbenzthiazoline-6-sulfonic acid) diammonium salt see ABTS® <i>BioChemica</i>	37	Benzamide <i>BioChemica</i>	131
Azure B (C.I. 52010)	124	Benzamide hydrochloride <i>BioChemica</i>	132
Azure I see Azure B (C.I. 52010)	124	Benzamine blue see Trypan blue (C.I. 23850)	842
B			
6-BA see 6-Benzylaminopurine <i>BioChemica</i>	136	Benzene	132
BAA see Nα-Benzoyl-L-arginineamide hydrochloride monohydrate	134	Benzene D ₆	132
BAC see N,N'-Bisacryloyl cystamine <i>BioChemica</i>	145	Benzeneazo-1-(2-naphthalene-6,8-disulfonic acid) disodium salt see Orange G (C.I. 16230)	585
BACH see (+)-Biotinamidohehexanoic acid hydrazide	140	Benzene carboxylic acid see Benzoic acid	133
<i>Bacillus cereus</i> (PREP) Agar Base	124	1,4-Benzenediamine dihydrochloride see p-Phenylenediamine dihydrochloride <i>BioChemica</i>	621
Bacitracin <i>BioChemica</i>	125	Benzethonium chloride	133
BaCO ₃ see Barium carbonate	126	Benzethonium chloride - Solution (0.004 M)	133
Bacterial Alkaline Phosphatase see Phosphatase, alkaline bacterial (BAP)	622	Benzoic acid	133
BAEE see Nα-Benzoyl-L-arginine ethyl ester hydrochloride (BAEE) <i>BioChemica</i>	134	Benzoic acid amide see Benzamide <i>BioChemica</i>	131
rHu BAFF	125	Benzoic acid chloride see Benzoyl chloride	135
Bafilomycin A1 <i>BioChemica</i>	125	Benzoic acid lithium salt see Lithium benzoate pure	492
Baicalin HPLC grade	125	Benzoic acid sodium salt see Sodium benzoate pure Ph. Eur., NF	723
Baicalin-7-β-D-glycopyranosiduronate see Baicalin HPLC grade	126	1,4-Benzoquinone see p-Benzoquinone for synthesis	134
Baicalin HPLC grade	126	p-Benzoquinone for synthesis	134
Baird-Parker Agar Base	126	1 H-Benzotriazole see 1,2,3-Benzotriazole for synthesis	134
BAL in EtOH see 2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol	282	1,2,3-Benzotriazole for synthesis	134
Ba(OH) ₂ · 8H ₂ O see Barium hydroxide octahydrate p. A.	129	Nα-Benzoyl-DL-arginine p-nitroanilide hydrochloride <i>BioChemica</i>	134
BAP see 1,4-Diacryloyl piperazine <i>BioChemica</i>	272	Nα-Benzoyl-L-arginineamide hydrochloride monohydrate	134
L-BAPA see Nα-Benzoyl-DL-arginine p-nitroanilide hydrochloride <i>BioChemica</i>	134	Nα-Benzoyl-L-arginine ethyl ester hydrochloride (BAEE) <i>BioChemica</i>	134
Baptitoxin see Cytisine HPLC grade	256	Benzoyl chloride	135
		3β-Benzoyl-5-cholestene see Cholesteryl benzoate <i>BioChemica</i>	209
		Benzoylstauroporine see PKC412 <i>BioChemica</i>	629
		4-N-Benzoylstauroporine see PKC412 <i>BioChemica</i>	629
		N ⁶ -Benzyladenine see 6-Benzylaminopurine <i>BioChemica</i>	136
		Benzyl alcohol	135
		6-Benzylaminopurine <i>BioChemica</i>	136
		Benzyl carbinol see 2-Phenylethanol for synthesis	621
		Benzyl coelenterazine see Coelenterazine H <i>BioChemica</i>	220
		Benzylglucosinolate see Glucotropaeolin HPLC grade	379
		Benzylpenicillin potassium salt see Penicillin G potassium salt	601
		Benzylsulfonyl fluoride see PMSF <i>BioChemica</i>	630

Bergamottin HPLC grade	136	N,N'-Bisacryloyl cystamine <i>BioChemica</i>	145
BES	136	N,N'-Bisacryloyl-1,2-dihydroxy-1,2-ethylenediamine see 1,2-	281
Bestatin hydrochloride <i>BioChemica</i>	137	Dihydroxyethylene-bisacrylamide <i>BioChemica</i>	
Betaine hydrochloride pure	137	1,4-Bis-acryloylpiperazine see 1,4-Diacryloylpiperazine	272
beta-NGF see rHu NGF-β	564	<i>BioChemica</i>	
Betulin HPLC grade	137	1,5-Bis-(4-allyldimethylammoniumphenyl)-pentane-3-one	145
Betulinic acid HPLC grade	137	dibromide <i>BioChemica</i>	
Betulinol see Betulin HPLC grade	137	4,4'-Bis-(8-amino-3,6-disulfo-1-hydroxy- 2-naphthylazo)-3,3'-	842
rM bFGF see rM bFGF	349	dimethylbiphenyl) tetrasodium salt see Trypan blue (C.I.	
rHu bFGF see rHu bFGF (147)	348	23850)	
rHu bFGF (154) see rHu bFGF (154)	348	N,N'-Bis-(3-aminopropyl)-1,4-diaminobutane see Spermine	760
BHL see rHu Galectin-1	368	<i>BioChemica</i>	
BHT 1 % in EtOH abs. see Butylated hydroxytoluene - Solution	173	N,N'-Bis-(3-aminopropyl)-1,4-diaminobutane	760
1 % (in Ethanol)		tetrahydrochloride see Spermine tetrahydrochloride	
Bicine	138	<i>BioChemica</i>	
Bicinchoninic acid Protein Assay	138	Bisbenzimidazole H33258 <i>BioChemica</i>	145
Bicinchoninic acid Protein Assay Micro	138	Bisbenzimidazole H33342 <i>BioChemica</i>	146
Bile Esculin Agar	139	3',3''-Bis[bis(carboxymethyl)-	872
Bilirubin	139	aminomethyl]cresolsulfonphthalein tetrasodium salt see	
Biobalid HPLC grade	139	Xylenol orange tetrasodium salt for metal titration	
Binding silane see 3-Methacryloxypropyl trimethoxysilane	532	2',7'-Bis-(carboxyethyl)-5(6)- carboxyfluorescein see BCECF	129
NHS-Biotin see (+)-Biotin-N-hydroxysuccinimide ester	142	<i>BioChemica</i>	
<i>BioChemica</i>		2',7'-Bis-(carboxyethyl)-5(6)-carboxy-fluorescein	129
D(+)-Biotin	140	acetoxymethylester see BCECF-AM <i>BioChemica</i>	
Biotin-11-deoxyuridine 5'-triphosphate tetralithium salt see	140	3,7-Bis-(dimethylamino)-1,9-dimethyl-diphenothiazin-5-ium	285
Biotin-11-dUTP	140	hydrochloride see Dimethylmethylene blue hydrochloride	
Biotin-11-dUTP	140	<i>BioChemica</i>	
(+)-Biotinamidocaproate N-hydroxysuccinimide ester see	141	N,N-Bis-[3-(D-gluconamido)-propyl]-deoxycholate see	264
Biotinamidohexanoic acid N-hydroxysuccinimide ester		Deoxy-BIGCHAP <i>BioChemica</i>	
6-(Biotinamidocaproylamido)caproic acid N-	141	Bis-(2-hydroxyethyl)-amine see Diethanolamine <i>BioChemica</i>	277
hydroxysuccinimide ester see Biotinamidohexanoyl-6-		N,N-Bis-(2-hydroxyethyl)-2-aminoethane sulfonic acid see BES	136
aminohexanoic acid N-hydroxysuccinimide ester		N,N-Bis-(2-hydroxyethyl)-3-amino-2-hydroxypropanesulfonic	290
Biotinamidocaproyl hydrazide see (+)-Biotinamidohexanoic acid	140	acid see DIPSO Buffer grade	
hydrazide		N,N-Bis-(2-hydroxyethyl)-glycine see Bicine	138
(+)-Biotinamidohexanoic acid hydrazide	140	Bis-(2-hydroxyethyl)-imino-tris-(hydroxy methyl)-methane see	147
Biotinamidohexanoic acid N-hydroxysuccinimide ester	141	Bis-Tris	
6-(Biotinamidohexanoylamido)hexanoic acid 3-sulfo-N-	141	N,N-Bis(2-hydroxyethyl)-methylamine see N-	537
hydroxysuccinimide ester sodium salt		Methyldiethanolamine	
Biotinamidohexanoyl-6-aminohexanoic acid N-	141	3,3-Bis-(4-hydroxyphenyl)-phthalide see Phenolphthalein (C.I.	617
hydroxysuccinimide ester		764)	
Biotin-cadaverine see N-(5-Aminopentyl)biotinamide	89	Bisindolylmaleimide <i>BioChemica</i>	146
trifluoroacetate salt		1,8-Bis-maleimidetriethyleneglycol see BM(PEO) ₃	152
(+)-Biotin hydrazide	141	1,13-Bis-maleimido-4,7,10-trioxadecane see BM(PEO-PPO) ₂	152
(+)-Biotin N-hydroxysuccinimide ester <i>BioChemica</i>	142	1,4-Bis-maleimidobutane see BMB	150
Biotin pentafluorophenyl ester	142	1,2-Bis-maleimidoethane see BMOE	152
(+)-Biotin N-succinimide ester see (+)-Biotin-N-	142	1,6-Bis-maleimidoethane see BMH	152
hydroxysuccinimide ester <i>BioChemica</i>		Bismarck brown G see Bismarck brown Y (C.I. 21000)	147
(+)-Biotin-3-sulfo-N-hydroxysuccinimide ester sodium salt	142	Bismarck brown R (C.I. 21010)	146
<i>BioChemica</i>		Bismarck brown Y (C.I. 21000)	147
(+)-Biotin-X-hydrazide see (+)-Biotinamidohexanoic acid	140	2,3-Bis-(2-methoxy-4-nitro-5-sulfo-phenyl)-2H-tetrazolium-5-	870
hydrazide		carboxanilide sodium salt see XTT sodium salt <i>BioChemica</i>	
Biotin-X-X-NHS see Biotinamidohexanoyl-6-aminohexanoic	141	Bis(methylenedioxy)protuberberin see Coptisin HPLC grade	245
acid N-hydroxysuccinimide ester		Bis(sulfosuccinimide)suberate disodium salt see BS ³	164
9-Biotinylamino-4,7-dioxanonoic acid N-hydroxysuccinimide	142	N,O-Bis-(trimethylsilyl)-acetamide	147
ester		Bis-(trimethylsilyl)-amine see 1,1,1,3,3,3-Hexamethyldisilazane	405
3-[[2-(Biotinylamino)ethyl]dithio]propanoic acid 3-sulfo-N-	143	GC grade	
hydroxysuccinimide ester sodium salt		Bis-(trimethylsilyl)-trifluoroacetamide	147
6-(Biotinylamino)hexanoic acid 3-sulfo-N-hydroxysuccinimide	143	Bis-Tris	147
ester sodium salt		1,3-Bis-[tris-(hydroxymethyl)-methyl- amino]-propane see Bis-	148
15-Biotinylamino-4,7,10,13-tetraoxapentadecanoic acid N-	143	Tris-propane	
hydroxysuccinimide ester		1,3-Bis-[tris-(hydroxymethyl)-methyl amino]-propane see Bis-	148
12-Biotinylamino-4,7,10-trioxadodecanoic acid N-	143	Tris-propane	
hydroxysuccinimide ester		Bis-Tris-propane	148
Bis see Bisacrylamide	143	Blasticidin S hydrochloride <i>BioChemica</i>	148
3,5-Bis(acetyl-amino)-2,4,6-triiodobenzoic acid sodium salt see	730	Bleomycin see Bleomycin sulfate <i>BioChemica</i>	149
Sodium diatrizoate dihydrate Cell culture grade		Bleomycin sulfate <i>BioChemica</i>	149
Bisacrylamide	143	Blocking Reagent CA	149
Bisacrylamide - Solutions	144	Blood Agar Base	149
2,2'-Bisacrylamino diethyldisulfide see N,N'-Bisacryloyl	145	Blotting membranes see Transfer Membranes: Nitrocellulose,	825
cystamine <i>BioChemica</i>		Nylon, PVDF	

Blue Agar	149	5-Bromo-4-chloro-3-indolyl-β-D-glucuronide sodium salt	869
Blue-Green-Red Protein Marker see Electrophoresis Size Marker/Standard Protein	325	trihydrate see X-Glucuro sodium salt trihydrate <i>BioChemica</i>	
Blue tetrazolium chloride see Tetrazolium blue chloride	809	5-Bromo-4-chloro-3-indolyl phosphate disodium salt see X-Phos disodium salt <i>BioChemica</i>	870
BMB	150	5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt see BCIP <i>BioChemica</i>	130
BME, Basal medium with Earle's salts	150	Bromochlorophenol blue	159
BME, Basal medium with Hanks' salts	151	Bromochlorophenol blue - Solution	159
BMH	152	1-Bromo-3-chloropropane <i>BioChemica</i>	159
BMOE	152	Bromocresol green	159
BM(PEO) ₃	152	Bromocresol green - Solution (in diluted Ethanol)	160
BM(PEO-PPO) ₂	152	Bromocresol green - Solution (aqueous solution)	160
BMPS	152	Bromocresol purple	160
rHu BMP-2	153	Bromocresol purple - Solution	160
rHu BMP-4	153	5-Bromo-1-(2-deoxy-β-D-ribofuranosyl)-uracil see 5-Bromo-2'-deoxyuridine <i>BioChemica</i>	160
Boc-AAA-NHO-Bz see Elastase Inhibitor I	319	5-Bromo-2'-deoxyuridine <i>BioChemica</i>	160
Boc-Ala-Ala-Ala-NHO-Bz see Elastase Inhibitor I	319	5-Bromo-2'-deoxyuridine 5'-triphosphate tri(triethylammonium) salt <i>BioChemica</i>	161
Boc-Ala-Ala-NHO-Bz see Subtilisin Inhibitor I	775	8-Bromoguanosine <i>BioChemica</i>	161
Boc-Ala-Pro-Phe-NHO-Bz	153	Bromiodide see Iodomonomobromide for synthesis	457
Boc-Pro-Phe-NHO-Bz-p-Cl	153	Bromophenol blue	161
Boc-Val-Phe-NHO-Bz-p-Cl see Cathepsin/Subtilisin Inhibitor	189	Bromophenol blue - Solution (in diluted Ethanol)	161
Boc-VF-NHO-Bz-p-Cl see Cathepsin/Subtilisin Inhibitor	189	Bromophenol blue - Solution (aqueous solution)	161
recombinant Human Bone Morphogenetic Protein-4 see rHu BMP-4	153	Bromophenol blue sodium salt	162
recombinant Human Bone Morphogenic Protein-2 see rHu BMP-2	153	Bromophenol red	162
Bone oil	153	Bromophenol red - Solution	163
Borax see di-Sodium tetraborate decahydrate	754	Bromopotassium see Potassium bromide	636
Boric acid	154	Bromothymol blue	163
Boric acid - Solutions (w/v)	154	Bromothymol blue - Solution	163
Boric acid - Standard volumetric solutions	155	Bromothymol blue sodium salt	163
Boron nitride pure	155	Bromothymol blue Lactose Agar see Blue Agar	149
α-Boswellic acid HPLC grade	155	Bromothymol blue Lactose Cystine Agar see CLED Agar	218
β-Boswellic acid HPLC grade	156	Bromoxynolol blue	163
Bradford - Solution for Protein Determination	156	Bromoxynolol blue - Solution	163
recombinant Human Brain-Derived Neurotrophic Factor see rHu BDNF	130	Bromsulfalein see Sulfobromophthalein disodium salt	778
Brain Heart Infusion Agar	156	Bryamicin see Thiostrepton <i>BioChemica</i>	813
BrdU see 5-Bromo-2'-deoxyuridine <i>BioChemica</i>	160	BS ³	164
Brefeldin A <i>BioChemica</i>	156	BSA see Albumins	75
Brij® 35 <i>BioChemica</i>	157	BSTFA see Bis-(trimethylsilyl)-trifluoroacetamide	147
Brij® 35 - Solution 10 % peroxide-free	157	BTC see Tetrazolium blue chloride	809
Brij® 58 <i>BioChemica</i>	157	Bucladesine see N ⁶ -2'-O-Dibutyl-adenosine 3',5'-cyclophosphate sodium salt monohydrate	274
Brij® 58 - Solution 10 % peroxide-free	158	Buffer solutions	164
Brilliant blue FCF see Erioglaucine (C.I. 42090)	330	Buffer sets	166
Brilliant blue G see Coomassie® Brilliant blue G-250 (C.I. 42655)	242	Buffer solutions, color-coded	166
Brilliant blue R see Coomassie® Brilliant blue R-250 (C.I. 42660)	242	Buffer solutions, standardized, according to DIN 19266	167
Brilliant cresyl blue (C.I. 51010)	158	Buffersolutions, according to DIN 19267	168
Brilliant cresyl blue zinc chloride double salt see Brilliant cresyl blue (C.I. 51010)	158	Buffer solutions, different compositions	169
Brilliant green (C.I. 42040)	158	1,3-Butanediol for synthesis	169
Brilliant green - Solution	158	1,4-Butanediol for synthesis	170
Brilliant green hydrogensulfate see Brilliant green (C.I. 42040)	158	1-Butanesulfonic acid sodium salt IPC grade	170
Brilliantrose see Rhodamine B (C.I. 45170)	686	iso-Butanol see Isobutanol	463
Bromelain from pineapple <i>BioChemica</i>	158	1-Butanol	170
Bromelin see Bromelain from pineapple <i>BioChemica</i>	158	1-Butanol water-saturated <i>BioChemica</i>	171
4-Bromo-A23187 <i>BioChemica</i>	159	2-Butanol	171
4-Bromo-antibiotic A23187 see 4-Bromo-A23187 <i>BioChemica</i>	159	tert.-Butanol	172
4-Bromocalcimycin see 4-Bromo-A23187 <i>BioChemica</i>	159	2-Butanone see Methyl ethyl ketone	538
3-Bromo-4-chloro-3-indolyl-α-D-galactopyranoside see X-α-Gal <i>BioChemica</i>	868	cis-Butenedioic acid see Maleic acid pure Ph. Eur.	509
5-Bromo-4-chloro-3-indolyl-β-D-galactopyranoside see X-Gal	868	trans-Butenedioic acid see Fumaric acid	365
5-Bromo-4-chloro-3-indolyl-β-D-glucopyranoside see X-Glu <i>BioChemica</i>	869	cis-Butenedioic acid disodium salt see Maleic acid disodium salt pure	509
5-Bromo-4-chloro-3-indolyl-β-D-glucuronide	869	3-Butenylglucosinolate potassium salt see Gluconapin HPLC grade	376
cyclohexylammonium salt see X-Glucuro CHA salt <i>BioChemica</i>		2-Butoxy ethanol see Ethylene glycol monobutyl ether	342
5-Bromo-6-chloro-3-indolyl-β-D-glucuronide	502	n-Butyl acetate	172
cyclohexylammonium salt see Magenta-Glucuro CHA salt <i>BioChemica</i>		n-Butyl alcohol see 1-Butanol	170
		sec.-Butyl alcohol see 2-Butanol	171

tert.-Butyl alcohol see <i>tert.</i> -Butanol	172	Cancer-associated CEA see Carcinoembryonic Antigen (CEA), human	186
4-(Butylamino)benzoic acid 2-dimethylamino ethyl ester see Tetracaine hydrochloride <i>BioChemica</i>	804	Cancer-associated PSA see Prostate specific Antigen (PSA), human	671
Butylated hydroxytoluene (BHT)	173	Capryl alcohol see 1-Decanol for synthesis	261
Butylated hydroxytoluene - Solution 1 % (in Ethanol)	173	CAPS	184
n-Butylcarbinol see n-Amyl alcohol	109	CAPS sodium salt Buffer grade	185
Butyl chloride see 1-Chlorobutane	203	CAPSO Buffer grade	185
N-(tert.-Butyldimethylsilyl)-N-methyltrifluoroacetamide	173	Carbamide see Urea (Pellets)	850
1,3-Butylene glycol see 1,3-Butanediol for synthesis	169	Carbenicillin disodium salt <i>BioChemica</i>	185
1,4-Butylene glycol see 1,4-Butanediol for synthesis	170	Carbobenzoxy-valinyl-phenylalaninal see Calpain Inhibitor III	183
Butyl glycol see Ethylene glycol monobutyl ether	342	Carbol fuchsine - Solution see Ziehl-Neelsen - Solution	875
tert.-Butyl methyl ether	174	Carbolic acid see Phenol liquid water-saturated	613
n-Butyric acid for synthesis	174	Carbonic acid propylene glycol ester see Propylene carbonate pure	670
Butyric acid 1-naphthyl ester see 1-Naphthyl butyrate <i>BioChemica</i>	561	Carbonyldiamide see Urea (Pellets)	850
C			
CA19-9 see Cancer Antigen 19-9 (CA19-9), human	184	α-Carboxybenzylpenicillin see Carbenicillin disodium salt <i>BioChemica</i>	185
CaCO ₃ see Calcium carbonate precipitated	177	Carboxylic acid C ₁ see Formic acid	359
Cacodylic acid <i>BioChemica</i>	175	(Carboxymethyl)trimethylammonium chloride see Betaine hydrochloride pure	137
Cacodylic acid sodium salt trihydrate <i>BioChemica</i>	175	2-((1E,3E,5E)-5-(3-(5-Carboxypentyl)-1,1-dimethyl-1H-benzo[e]indol-2(3H)-ylidene)penta-1,3-dienyl)-3-ethyl-1,1-dimethyl-1H-benzo[e]indolium-6-sulfonate see Colorado 600 - 699 nm (blue spectrum)	225
Caffeine pure Ph. Eur., USP	175	2-((1E,3E,5E)-5-(3-(5-Carboxypentyl)-1,1-dimethyl-6-sulfonato-1H-benzo[e]indol-2(3H)-ylidene)penta-1,3-dienyl)-3-ethyl-1,1-dimethyl-1H-benzo[e]indolium-6-sulfonate potassium salt see Colorado 600 - 699 nm (blue spectrum)	225
2-Caffeoyltartaric acid see Cafataric acid HPLC grade	176	2-((1E,3E,5E)-5-(1-(5-Carboxypentyl)-3,3-dimethyl-indolin-2-ylidene)penta-1,3-dienyl)-1-ethyl-3,3-dimethyl-3H-indolium-5-sulfonate see Colorado 600 - 699 nm (blue spectrum)	225
Cafataric acid HPLC grade	176	2-((1E,3E)-3-(1-(5-Carboxypentyl)-3,3-dimethylindolin-2-ylidene)prop-1-enyl)-1-ethyl-3,3-dimethyl-3H-indolium-5-sulfonate see Colorado 550 - 599 nm (purple spectrum)	231
Calciferol see Vitamin D ₂	856	Carcinoembryonic Antigen (CEA), human	186
Calcimycin see A23187	37	L-Carnitine <i>BioChemica</i>	186
Calcimycin calcium magnesium salt see A23187 calcium magnesium salt <i>BioChemica</i>	37	β,ε-Carotene-3,3'-diol see Lutein pure	498
Calcium acetate hydrate	176	ψ,ψ-Carotene see Lycopin HPLC grade	498
Calcium L-ascorbate dihydrate pure Ph. Eur.	177	Carrez - Solutions	186
Calcium carbonate precipitated	177	Carrier-Ampholyte see Ampholyte	105
Calcium carbonate see Marble granular for producing CO ₂	516	Stainless Steel - Cartridge (AppliQUA) with Mixed-Bed Resin MBH 100	186
Calcium chloride granulated	177	Stainless Steel - Cartridge (AppliQUA) without Mixed-Bed Resin MBH 100	187
Calcium chloride dried, powdered	178	Cartridge for Mixed-Bed Resins see Stainless Steel - Cartridge (AppliQUA) with Mixed-Bed Resin MBH 100	186
Calcium chloride dihydrate	178	Cascarin see Frangulin (A : B approx. 1 : 4)	363
Calcium chloride hexahydrate	179	CaSO ₄ · 2H ₂ O see Calcium sulfate dihydrate	183
Calcium chloride - Solutions	179	CASO Agar see Tryptone Soya Agar	844
tri-Calcium dicitrate tetrahydrate pure	180	CASO Broth see Tryptone Soya Broth	844
Calcium folinate see Folinic acid calcium salt pentahydrate	355	Cassinic acid see Rhein	686
Calcium gluconate monohydrate pure Ph. Eur., USP	180	Castanospermine <i>BioChemica</i>	187
Calcium gluconate - Solution saturated pure	180	Casticin HPLC grade	187
Calcium hydroxide	180	Catalpol HPLC grade	187
Calcium hypophosphite pure DAC	181	(-)-Catechin HPLC grade	188
Calcium ionophore A23187 see A23187	37	(+)-Catechin HPLC grade	188
Calcium lactate pentahydrate	181	(+)-Catechol see (+)-Catechin HPLC grade	188
Calcium nitrate tetrahydrate	182	Catenulin see Paromomycin sulfate <i>BioChemica</i>	592
tri-Calcium orthophosphate see tri-Calcium phosphate pure Ph. Eur.	182	Cathepsin B,L,S Inhibitor see Z-Gly-Phe-NHO-Bz	874
Calcium D-pantothenate see D-Pantothenic acid calcium salt	590	Cathepsin G, human	188
tert.-Calcium phosphate see tri-Calcium phosphate pure Ph. Eur.	182	Cathepsin G-biotinylated, human	188
tri-Calcium phosphate pure Ph. Eur.	182	Cathepsin Inhibitor I	188
Calcium phosphinate see Calcium hypophosphite pure DAC	181	Cathepsin Inhibitor II	189
Calcium saccharate tetrahydrate pure USP	182	Cathepsin Inhibitor III	189
Calcium sulfate dihydrate	183	Cathepsin/Subtilisin Inhibitor	189
Calf Intestine Phosphatase see Phosphatase, alkaline from calf intestine (CIP)	623	Caustic soda see Sodium hydroxide pearls	737
Calpain Inhibitor I	183	CCL 3 see rM MIP-1α	545
Calpain Inhibitor II	183	CCL3 see rHu MIP-1α	545
Calpain Inhibitor III	183	CCL 4 see rM MIP-1β	545
Campari® see Staining reagent for juice	762		
D-Campher pure Ph. Eur., USP	184		
Canada balsam genuine	184		
Canavanine sulfate <i>BioChemica</i>	184		
Cancer Antigen 19-9 (CA19-9), human	184		

CCL5 see rHu RANTES	683	Chlorcalcium see Calcium chloride granulated	177
CCL7 see rHu MCP-3	521	Chlorhexidine diacetate pure Ph. Eur.	202
CCL 8 see rHu MCP-2	521	Chlorhexidine diacetate monohydrate <i>BioChemica</i>	203
CCL13 see rHu MCP-4	521	(R)-N-[(5-Chloro-3,4-dihydro-8-hydroxy-3-methyl-1-oxo-1H-2-benzopyran-7-yl)-carbonyl]-L-phenylalanine see Ochratoxin A <i>BioChemica</i>	580
CCL 18 see rHu MIP-4	546		
CCL 19 see rHu MIP-3β	546	3-Chloroacetoxy-2-naphthoic acid anilide see Naphthol AS chloroacetate <i>BioChemica</i>	559
CCL 20 see rM MIP-3α	546		
CCL20 see rHu MIP-3α	546	1-Chloro-3-bromopropane see 1-Bromo-3-chloropropane <i>BioChemica</i>	159
CD154 see rM CD40-L	190		
CD40L see rM CD40-L	190	1-Chlorobutane	203
rHu CD40-L	189	Chloro calcium see Calcium chloride dried, powdered	178
recombinant Human CD40-Ligand see rHu CD40-L	189	3β-Chloro-5-cholestene see Cholesteryl chloride <i>BioChemica</i>	209
recombinant Mouse CD40-Ligand see rM CD40-L	190	(7S)-7-Chloro-7-deoxylincosmycin hydrochloride see Clindamycin hydrochloride <i>BioChemica</i>	218
CDP-choline see Citicoline sodium salt <i>BioChemica</i>	213		
CDP-coline see Citicoline sodium salt <i>BioChemica</i>	213	Chloroform	204
CDP trisodium salt dihydrate see Cytidine 5'-diphosphoric acid trisodium salt dihydrate <i>BioChemica</i>	256	Chloroform D ₁	205
		Chloroform : Isoamyl alcohol	206
C ₁₆ E ₂₀ see Brij® 58 <i>BioChemica</i>	157	(-)-N-[(5-Chloro-8-hydroxy-3-methyl-1-oxo-7-isochromanyl)carbonyl]-3-phenylalanine see Ochratoxin A <i>BioChemica</i>	580
Cefotaxime sodium salt <i>BioChemica</i>	190		
Cell Proliferation Kit XTT	190	6-Chloro-3-indolyl-β-D-galactopyranoside see Rose-Gal <i>BioChemica</i>	691
AC-Cell Xeno-free Medium Immunology grade	190		
D(+)-Cellobiose <i>BioChemica</i>	191	6-Chloro-3-indolyl-β-D-glucuronide cyclohexylammonium salt see Rose-Glucuro CHA salt <i>BioChemica</i>	692
Cephalexine dihydrobromide HPLC grade	191		
Cer(III) chloride hydrate pure	191	6-Chloro-3-indolyl-phosphate p-toluidine salt see Rose-Phos p-toluidine salt <i>BioChemica</i>	692
Cer(IV) sulfate tetrahydrate	191		
Cer(IV) sulfate - Standard volumetric Solutions	191	Chloromycetin see Chloramphenicol	201
Cerulein <i>BioChemica</i>	192	4-Chloro-1-naphthol <i>BioChemica</i>	206
Cesium chloride	192	Chlorophenol red	206
Cesium chloride - Aluminium nitrate - Buffer solution for flame spectroscopy	193	Chlorophenol red - Solution	206
Ce(SO ₄) ₂ · 4H ₂ O see Cer(IV) sulfate tetrahydrate	191	Chloroquine diphosphate <i>BioChemica</i>	207
Cetrimide see Cetyltrimethylammonium bromide	194	7-Chlorotetracycline hydrochloride see Chlorotetracycline hydrochloride <i>BioChemica</i>	207
Cetrimide Agar Base	193		
Cetrimonium bromide see Cetyltrimethylammonium bromide	194	Chlorotetracycline hydrochloride <i>BioChemica</i>	207
Cetyl alcohol for synthesis	193	N-Chloro-4-toluenesulfonamide sodium salt see Chloramine T trihydrate	200
Cetylpyridinium bromide <i>BioChemica</i>	193		
Cetylpyridinium chloride monohydrate <i>BioChemica</i>	194	Chlorotrimethylsilane see Trimethylchlorosilane	834
Cetyltrimethylammonium bromide	194	AC-CHO adh SFM Base	207
N-Cetyl-N,N,N-trimethylammonium bromide see Cetyltrimethylammonium bromide	194	AC-CHO supp (100X)	207
		AC-CHO sus SFM Base	208
CGP 41251 see PKC412 <i>BioChemica</i>	629	Chocolate Agar Base	208
CH ₂ (COOH) ₂ see Malonic acid for synthesis	510	3-[(3-Cholamidopropyl)-dimethylammonio]- 2-hydroxy-1-propanesulfonate see CHAPSO <i>BioChemica</i>	195
CH ₃ CH ₂ COOH see Propionic acid for synthesis	669		
CH ₃ COOH - Standard volumetric solution see Acetic acid - Standard volumetric solutions	42	3-[(3-Cholamidopropyl)-dimethylammonio]-1-propanesulfonate see CHAPS	195
CH ₃ COOK see Potassium acetate	635		
CHAPS	195	Cholest-5-en-3-β-ol see Cholesterol	208
CHAPSO <i>BioChemica</i>	195	Cholesterol	208
Charcoal, activated granular	195	Cholesteryl acetate <i>BioChemica</i>	208
Chelerythrine chloride <i>BioChemica</i>	196	Cholesteryl benzoate <i>BioChemica</i>	209
Chelidonin HPLC grade	196	Cholesteryl chloride <i>BioChemica</i>	209
Cheluminate-HRP PicoDetect	197	Cholesteryl octadecanoate see Cholesteryl stearate <i>BioChemica</i>	209
Cheluminate-HRP PicoDetect Extended	198		
Cheluminate-HRP FemtoDetect Plus	198	Cholesteryl stearate <i>BioChemica</i>	209
CheLuminate-HRP ELISA FemtoDetect	198	Cholic acid <i>BioChemica</i>	209
CheLuminate-HRP ELISA FemtoDetect Plus	199	Cholic acid sodium salt see Sodium cholate <i>BioChemica</i>	728
Chenodeoxycholic acid <i>BioChemica</i>	199	Choline chloride <i>BioChemica</i>	209
CHES	199	D-Chondrosamine hydrochloride see D(+)-Galactosamine hydrochloride <i>BioChemica</i>	367
Chianti Classico see Ethanol 10 % - 39 %	336		
Chitosamin hydrochloride see D(+)-Glucosamine hydrochloride <i>BioChemica</i>	377	Chorionic Gonadotropin (HCG), human	210
Chloral hydrate pure Ph. Eur.	200	Chorionic Gonadotropin β-subunit, human	210
α-Chloralose	200	Chrome black see Eriochrome black T (C.I. 14645)	330
Chloramine T trihydrate	200	Chrome Violet CG see Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122
Chloramine T - Solutions	201		
Chloramphenicol	201	Chromic acid potassium salt see Potassium chromate p. A.	640
Chloramphenicol Glucose Agar	202	Chromic mixture for cleaning of glassware	210
		Chromium(III) chloride hexahydrate pure	210
		Chromium(III) potassium sulfate - Solution for COD-determination	210
		Chromogene black see Eriochrome black T (C.I. 14645)	330

Chromomycin A3 <i>BioChemica</i>	211	Coenzyme A trilithium salt dihydrate <i>BioChemica</i>	221
Chymostatin	211	Coenzyme Q ₁₀ <i>BioChemica</i>	221
α-Chymotrypsin	211	Coffee see Caffeine, bean-like shape	176
Chymotrypsinogen A	212	Colamine see Ethanolamine <i>BioChemica</i>	337
Cichoric acid HPLC grade	212	Colcemide see Demecolcine <i>BioChemica</i>	262
recombinant Human Ciliary Neurotrophic Factor see rHu CNTF	218	Colchicine <i>BioChemica</i>	221
8-Cinnamoylharpagid see Harpagoside HPLC grade	398	Colistin sulfate <i>BioChemica</i>	221
Ciprofloxacin <i>BioChemica</i>	212	Colorada 700 - 849 nm (green spectrum)	222
Ciprofloxacin hydrochloride	212	Colorada 600 - 699 nm (blue spectrum)	225
Citicoline sodium salt <i>BioChemica</i>	213	Colorada 550 - 599 nm (purple spectrum)	231
Citrate buffer - Solution (1 M) pH 4.00	213	Colorada 501 - 549 nm (red spectrum)	237
Citreoviridin <i>BioChemica</i>	213	Colorada 450 - 500 nm (orange spectrum)	239
Citreoviridin A see Citreoviridin <i>BioChemica</i>	213	Colorada 400 - 449 nm (yellow spectrum)	240
Citric acid anhydrous powdered	213	Columbia Blood Agar Base	241
Citric acid monohydrate	214	Concanavalin A see Lectins	484
Citric acid - Solutions	215	Congo red (C.I. 22120)	241
Citric acid iron(III) salt see Iron(III) citrate hydrate	460	Congo red - Solution	241
Citric acid magnesium salt see Magnesium citrate pure	505	recombinant Human Connective Tissue Growth Factor see rHu	248
Citric acid monosodium salt see <i>mono</i> -Sodium citrate pure	728	CTGF	
Citric acid triethyl ester see Triethyl citrate pure Ph. Eur., NF	833	Coomassie® Brilliant blue G-250 (C.I. 42655)	242
Citric acid tripotassium salt see <i>tri</i> -Potassium citrate monohydrate pure Ph. Eur., BP, USP, Food grade	641	Coomassie® Brilliant blue R-250 (C.I. 42660)	242
Citric acid trisodium salt dihydrate see <i>tri</i> -Sodium citrate dihydrate	728	Copper(I) chloride pure	242
Citrinin <i>BioChemica</i>	215	Copper(II) chloride dihydrate pure	243
Citrovorum factor see Folinic acid calcium salt pentahydrate	355	Copper dichloride see Copper(II) chloride dihydrate pure	243
L-Citrulline	215	Copper(II) ethylenediamine - Solution	243
CK-2 see Creatine Kinase MB Fraction, human	245	Copper monoxide see Copper(II) oxide pure	243
CK-BB see Creatine Kinase BB Fraction, human	245	Copper(II) nitrate trihydrate pure	243
CK-MB see Creatine Kinase MB Fraction, human	245	Copper(II) oxide pure	243
CK-MM see Creatine Kinase MM Fraction, human	245	Copper(II) sulfate pentahydrate	244
Claforan see Cefotaxime sodium salt <i>BioChemica</i>	190	Copper(II)-sulfate solution see Fehling's Reagents	346
Clavacin see Patulin <i>BioChemica</i>	593	Copper(II) sulfate - Solutions	244
Claviformin see Patulin <i>BioChemica</i>	593	Coptisin HPLC grade	245
Cleaning agents (deconex®)	216	Cori ester see α-D-Glucose 1-phosphate disodium salt hydrate <i>BioChemica</i>	378
CLED Agar	218	Corn sugar see D(+)-Glucose anhydrous	377
Cleland's Reagent see DTT	310	Cortisol see Hydrocortisone <i>BioChemica</i>	420
Cleocin see Clindamycin hydrochloride <i>BioChemica</i>	218	Cosmosiin see Apigenin-7-glucoside	113
Clindamycin hydrochloride <i>BioChemica</i>	218	Cot-1 DNA, human see DNA Cot-I, human	294
CLZN-h see Coelenterazine H <i>BioChemica</i>	220	C-reactive Protein (CRP), human	245
CMP disodium salt see Cytidine 5'-monophosphoric acid disodium salt hydrate <i>BioChemica</i>	256	Creatine Kinase BB Fraction, human	245
4CN see 4-Chloro-1-naphthol <i>BioChemica</i>	206	Creatine Kinase MB Fraction, human	245
Cnicin HPLC grade	218	Creatine Kinase MM Fraction, human	245
rHu CNTF	218	Creatine monohydrate <i>BioChemica</i>	246
CoA - Li ₃ dihydrate see Coenzyme A trilithium salt dihydrate <i>BioChemica</i>	221	Creatine phosphate disodium salt tetrahydrate <i>BioChemica</i>	246
CoA-SH see Coenzyme A free acid <i>BioChemica</i>	221	<i>m</i> -Cresol purple	246
Coating buffer for immunoassays (carbonate-based) see Immunoassay Buffer	446	<i>m</i> -Cresol purple - Solution	246
Coating buffer for immunoassays (PBS-based) see Immunoassay Buffer	446	Cresol red	247
Cobalthexammine trichloride see Hexamminecobalt(III) chloride Molecular biology grade	405	Cresol red - Solution	247
Cobalt(II) acetate tetrahydrate	219	o-Cresolsulfonphthalein see Cresol red	247
Cobalt(II) chloride hexahydrate	219	Cross reactivity reduction see Immunoassay Buffer	446
Cobalt(II) sulfamate - Solution 10 - 15 % pure	219	Crystal violet (C.I. 42555)	247
Cobalt(II) sulfate heptahydrate pure	220	Crystal violet - Solution	248
Cobaltous sulfate see Cobalt(II) sulfate heptahydrate pure	220	CsCl see Cesium chloride	192
Cobaltvitriol see Cobalt(II) sulfate heptahydrate pure	220	CSF-1 see rHu M-CSF	522
Coccarboxylase see Thiamine pyrophosphate	811	CTAB see Cetyltrimethylammonium bromide	194
Cochenille red A see Cochenille Red (C.I. 16255)	220	CTAB extraction solution see CTAB - Lysis buffer <i>BioChemica</i>	248
Cochenille Red (C.I. 16255)	220	CTAB - Lysis buffer <i>BioChemica</i>	248
Cochineal see Cochenille Red (C.I. 16255)	220	CTC see Cyanoditolyltetrazolium chloride <i>BioChemica</i>	249
CoCl ₂ · 6H ₂ O see Cobalt(II) chloride hexahydrate	219	C-terminal Fragment of Glucagon 1-37 (Oxyntomodulin) H-Lys-Arg-Asn-Lys-Asn-Asn-Ile-Ala-OH see Glucagon Fragment 30-37	375
Coelenterazine <i>BioChemica</i>	220	rHu CTGF	248
Coelenterazine H <i>BioChemica</i>	220	CTLA-8 see rR IL-17A	441
Coenzyme A free acid <i>BioChemica</i>	221	CTP disodium salt see Cytidine 5'-triphosphoric acid disodium salt dihydrate <i>BioChemica</i>	256
		CuCl see Copper(I) chloride pure	242
		Cu(NO ₃) ₂ · 3H ₂ O see Copper(II) nitrate trihydrate pure	243

Cupral see Sodium diethyldithiocarbamate trihydrate <i>BioChemica</i>	730	Cytokinin B see 6-Benzylaminopurine <i>BioChemica</i>	136
Curcumin HPLC grade	248	Cytosine 1-β-D-ribofuranoside see Cytidine <i>BioChemica</i>	256
CuSO ₄ · 5H ₂ O see Copper(II) sulfate pentahydrate	244	Cytosine <i>BioChemica</i>	258
CXCL10 see rM IP-10	458	Cytosine deoxyriboside hydrochloride see 2'-Deoxycytidine hydrochloride <i>BioChemica</i>	264
rM CXCL12 see rM SDF-1α	705		
Cyanidanon-4'-methyl ether see Hesperetin HPLC grade	405	D	
Cyanidin chloride HPLC grade	249	D ₂ O see Water D ₂	859
Cyanidin-3,5-diglucoside see Cyanin chloride	249	DAB see 3,3'-Diaminobenzidine tetrahydrochloride <i>BioChemica</i>	273
Cyanidin-3-glucoside chloride see Kuromanin chloride HPLC grade	474	Dactinomycin see Actinomycin D <i>BioChemica</i>	66
Cyanidin-3-rutinoside HPLC grade	249	Dansyl chloride <i>BioChemica</i>	259
Cyanidol see Cyanidin chloride HPLC grade	249	Dansyl fluoride <i>BioChemica</i>	259
Cyanin chloride	249	DAPI	259
Cyanocobalamin see Vitamin B ₁₂	856	DAS see Diacetoxyscirpenol <i>BioChemica</i>	272
Cyanoditolytetrazolium chloride <i>BioChemica</i>	249	DATD see N,N'-Diallyltartardiamide <i>BioChemica</i>	272
Cyanol FF see Xylene cyanol FF (C.I. 42135)	872	dATP-Na ₂ see 2'-Deoxyadenosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	263
Cyanosine see Phloxine B (C.I. 45410) Microscopy grade	622	dATP - Solution see 2'-Deoxyadenosine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	263
α-Cyclodextrin <i>BioChemica</i>	250	dATP with aminolinker see Deoxyribonucleotides with aminolinkers	267
β-Cyclodextrin <i>BioChemica</i>	250	Davidson - Solution	260
γ-Cyclodextrin <i>BioChemica</i>	250	DCC see N,N'-Dicyclohexylcarbodiimide for synthesis	277
1,4-Cyclohexadiene-3,6-dione see p-Benzoquinone for synthesis	134	dCTP-Na ₂ see 2'-Deoxycytidine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	264
Cyclohexan : Ethanol 1 : 2, v/v - Mixture of solvents see Mixture of solvents (Cyclohexane : Ethanol 1 : 2, v/v) p. A.	547	dCTP - Solution see 2'-Deoxycytidine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	265
Cyclohexane	250	dCTP with aminolinker see Deoxyribonucleotides with aminolinkers	267
Cyclohexane D ₁₂	251	N-Deacetyl-N-methylcolchicine see Demecolcine <i>BioChemica</i>	262
Cyclohexanesulfamic acid sodium salt see Sodium cyclamate pure Ph. Eur.	729	DEAE-Dextran <i>BioChemica</i>	260
Cyclohexanol for synthesis	251	Deanol see 2-Dimethylaminoethanol <i>BioChemica</i>	283
Cyclohexanone	252	Decalcifier for removal of scale	260
Cyclohexatriene see Benzene	132	1-Decanesulfonic acid sodium salt IPC grade	260
Cyclohexatriene deuterated see Benzene D ₆	132	1-Decanol for synthesis	261
Cyclohexene for synthesis	252	N-Decanoyl-N-methylglucamine see MEGA-10	524
Cycloheximide <i>BioChemica</i>	252	Decontamination removal solution for RNase see RNase- ExitusPlus™	691
2-(N-Cyclohexylamino)-ethanesulfonic acid see CHES	199	Decontamination solution for the removal of DNA and RNA contaminations see DNA-ExitusPlus™	302
3-(Cyclohexylamino)-2-hydroxy-1-propane sulfonic acid see CAPSO Buffer grade	185	Decyl alcohol see 1-Decanol for synthesis	261
3-(Cyclohexylamino)-1-propanesulfonic acid see CAPS	184	n-Decyl-β-D-glucopyranoside <i>BioChemica</i>	261
3-(Cyclohexylamino)-1-propanesulfonic acid sodium salt see CAPS sodium salt Buffer grade	185	n-Decyl-β-D-maltoside	261
1,2-Cyclohexylene dinitrilotetraacetic acid monohydrate p. A.	253	Dehydronivalenol monoacetate see 3-Acetyldioxynivalenol	49
Cycloleucyl-N-methylalanylglycyl-N-methyl dehydrophenylalanine see Tentoxin <i>BioChemica</i>	801	Dehydrothio-p-toluidine see APMBT ultrapure	113
Cyclomaltoheptaose see β-Cyclodextrin <i>BioChemica</i>	250	2-(Dehydroxy)-coelenterazine see Coelenterazine H <i>BioChemica</i>	220
Cyclomaltohexaose see α-Cyclodextrin <i>BioChemica</i>	250	Delphinidin-3-galactoside chloride HPLC grade	261
Cyclomaltooctaose see γ-Cyclodextrin <i>BioChemica</i>	250	Delphinidin-3-glucorhamnoside see Delphinidin-3-rutinoside HPLC grade	262
Cyclopiazonic acid <i>BioChemica</i>	253	Delphinidin-3-glucoside chloride HPLC grade	262
Cyclosan see Hypericin HPLC grade	430	Delphinidin-3-rutinoside HPLC grade	262
D-Cycloserine	253	Delphinin see Delphinidin-3-glucoside chloride HPLC grade	262
Cynarin HPLC grade	254	Demecolcine <i>BioChemica</i>	262
Cynarosid see Luteolin-7-glucoside HPLC grade	498	Denaturing - Solution Molecular biology grade	262
Cysteamine hydrochloride <i>BioChemica</i>	254	Denhardt's powder mixture (for 50X stock solution)	262
L-Cysteine	254	Denhardt's - Solution (50X) <i>BioChemica</i>	263
L-Cysteine hydrochloride monohydrate	255	27-Deoxyactein HPLC grade	263
L-Cystine	255	2'-Deoxyadenosine monohydrate <i>BioChemica</i>	263
L-Cystine dihydrochloride pure	256	2'-Deoxyadenosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	263
Cytidine 5'-diphosphocholine sodium salt see Citicoline sodium salt <i>BioChemica</i>	213	2'-Deoxyadenosine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	263
Cytidine <i>BioChemica</i>	256	Deoxy-BIGCHAP <i>BioChemica</i>	264
Cytidine 5'-diphosphoric acid trisodium salt dihydrate <i>BioChemica</i>	256	2'-Deoxy-5-bromouridine see 5-Bromo-2'-deoxyuridine <i>BioChemica</i>	160
Cytidine 5'-monophosphoric acid disodium salt hydrate <i>BioChemica</i>	256	Deoxycholate Citrate Agar, Leifson, Modified	264
Cytidine 5'-triphosphoric acid disodium salt dihydrate <i>BioChemica</i>	256	Deoxycholic acid <i>BioChemica</i>	264
Cytisine HPLC grade	256		
Cytochalasins	257		
Cytochrom C from porcine heart <i>BioChemica</i>	258		

Deoxycholic acid sodium salt see Sodium deoxycholate <i>BioChemica</i>	729	dGTP-Na ₃ see 2'-Deoxyguanosine 5'-triphosphoric acid trisodium salt <i>BioChemica</i>	265
2'-Deoxycytidine hydrochloride <i>BioChemica</i>	264	dGTP - Solution see 2'-Deoxyguanosine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	265
2'-Deoxycytidine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	264	DHEBA see 1,2-Dihydroxyethylene-bisacrylamide <i>BioChemica</i>	281
2'-Deoxycytidine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	265	3,5-Diacetamido-2,4,6-triiodobenzoic acid sodium salt see Sodium diatrizoate dihydrate Cell culture grade	730
3'-Deoxy-2',3'-didehydrothymidine 5'-triphosphate TEA salt <i>BioChemica</i>	265	Diacetone alcohol for synthesis	272
2-Deoxy-D-erythritol see 2-Deoxy-D-ribose <i>BioChemica</i>	267	Diacetoxyscirpenol <i>BioChemica</i>	272
6-Deoxy-D-galactose see D(+)-Fucose <i>BioChemica</i>	365	1,4-Diacryloyl-piperazine <i>BioChemica</i>	272
6-Deoxy-L-galactose see L(-)-Fucose <i>BioChemica</i>	365	N,N'-Diallyltartardiamide <i>BioChemica</i>	272
2'-Deoxyguanosine monohydrate <i>BioChemica</i>	265	N,N'-Diallyltartardiamide see N,N'-Diallyltartardiamide <i>BioChemica</i>	272
2'-Deoxyguanosine 5'-triphosphoric acid trisodium salt <i>BioChemica</i>	265	4',6-Diamidino-2-phenylindole dihydrochloride see DAPI	259
2'-Deoxyguanosine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	265	1,2-Diaminobenzene see o-Phenylenediamine, free base	620
2'-Deoxy-5-iodouridine see 5-Iodo-2'-deoxyuridine <i>BioChemica</i>	456	1,4-Diaminobenzene see p-Phenylenediamine, free base	620
6-Deoxy-L-mannose see L(+)-Rhamnose monohydrate <i>BioChemica</i>	686	1,4-Diaminobenzene dihydrochloride see p-Phenylenediamine dihydrochloride <i>BioChemica</i>	621
Deoxynivalenol <i>BioChemica</i>	266	3,3'-Diaminobenzidine tetrahydrochloride <i>BioChemica</i>	273
Deoxynivalenol monoacetate see 3-Acetyldeoxynivalenol	49	1,4-Diaminobutane dihydrochloride see Putrescin dihydrochloride	677
Deoxynojirimycin hydrochloride <i>BioChemica</i>	266	3,8-Diamino-5-(3-diethylaminopropyl)-6-phenyl- phenanthridinium iodide methiodide see Propidium iodide <i>BioChemica</i>	669
9-(2-Deoxy-β-D-ribofuranosyl)-adenine see 2'-Deoxyadenosine monohydrate <i>BioChemica</i>	263	1,2-Diaminoethane see Ethylenediamine p. A.	341
1-(2-Deoxy-β-D-ribofuranosyl)-cytosine hydrochloride see 2'- Deoxycytidine hydrochloride <i>BioChemica</i>	264	2,7-Diamino-10-ethyl-9-phenylphenanthridium bromide see Ethidium bromide <i>BioChemica</i>	338
1-(2-Deoxy-β-D-ribofuranosyl)-thymine see 2'-Deoxythymidine <i>BioChemica</i>	267	2,7-Diamino-10-ethyl-9-phenylphenanthridium bromide - Solution see Ethidium bromide - Solutions	338
Deoxyribonuclease I see DNase I	305	(s)-2,6-Diaminohexanoic acid see L-Lysine acetate salt pure USP	500
Deoxyribonucleic acid from salmon sperm see Salmon sperm DNA sodium salt	701	L-2,6-Diamino-n-hexanoic acid monohydrate see L-Lysine monohydrate	499
Deoxyribonucleotide - Mix <i>BioChemica</i>	266	L-2,6-Diamino-n-hexanoic acid monohydrochloride see L- Lysine monohydrochloride	499
Deoxyribonucleotide - Set <i>BioChemica</i>	266	3,6-Diamino-10-methyl-acridiniumchloride hydrochloride see Acridine hydrochloride <i>BioChemica</i>	51
Deoxyribonucleotides with aminolinkers	267	3,8-Diamino-5-methyl-6-phenylphenanthridinium bromide see Dimidium bromide <i>BioChemica</i>	288
2-Deoxy-D-ribose <i>BioChemica</i>	267	L-2,5-Diaminovaleric acid hydrochloride see L-Ornithine hydrochloride	586
2'-Deoxythymidine <i>BioChemica</i>	267	Diammonium hydrogen citrate see di-Ammonium hydrogen citrate	96
2'-Deoxythymidine 5'-triphosphoric acid trisodium salt <i>BioChemica</i>	268	Diamond green see Brilliant green (C.I. 42040)	158
2'-Deoxythymidine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	268	3,3'-Dianisole-4,4'-bis(3,5-diphenyltetrazolium chloride) see Tetrazolium blue chloride	809
2'-Deoxyuridine 5'-triphosphoric acid tetralithium salt trihydrate <i>BioChemica</i>	268	DIASALM Medium Base	273
DEPC <i>BioChemica</i>	268	DIASALM-MSRV Magnesium Chloride Solution see Supplements for Microbiological Media	786
Derma-ExitusPlus™	269	DIASALM-MSRV Selective Supplement see Supplements for Microbiological Media	786
Desiccant see Calcium chloride granulated	177	Diatom earth see Kieselguhr calcined and purified, NF	471
Desmethylemetin dihydrobromide see Cephaline dihydrobromide HPLC grade	191	Diatrizoic acid sodium salt dihydrate see Sodium diatrizoate dihydrate Cell culture grade	730
DETAPAC see Diethylenetriaminepentaacetic acid p. A.	278	1,3-Diaza-2,4-cyclopentadiene see Imidazole	445
Detritylation - Solution DNA synthesis grade	269	4,5,4',5'-Dibenzo-3,3'-diethyl-9-methylthio-carbocyanine bromide see Stains all	762
Deuterium chloride see Hydrochloric acid D ₁ (DCI, 20 % solution in D ₂ O)	416	2,8-Dibenzyl-6-(p-hydroxyphenyl)-imidazol-[1,2a]pyrazine-3- (7H)-one see Coelenterazine H <i>BioChemica</i>	220
Deuterium oxide see Water D ₂	859	5',5''-Dibromo-o-cresolsulfonephthalein see Bromocresol purple	160
DEV-Nutrient Agar see Nutrient Agar, DEV	579	5',5''-Dibromo-3',3''-dichlorophenolsulfone-phthalein see Bromochlorophenol blue	159
Dexamethason <i>BioChemica</i>	269	47,57-Dibromo-27,77-dinitrofluorescein disodium salt see Eosin B (C.I. 45400)	328
Dextran 40 <i>BioChemica</i>	269	3',3''-Dibromophenolsulfonephthalein see Bromophenol red	162
Dextran 70 <i>BioChemica</i>	270	3',3''-Dibromo-p-xyleneolsulfonephthalein see Bromoxyleneol blue	163
Dextran sulfate sodium salt	270	3',3''-Dibromothymolsulfonephthalein see Bromothymol blue	163
DextraSEC NA2	270	3',3''-Dibromothymolsulfonephthalein sodium salt see Bromothymol blue sodium salt	163
DextraSEC NA10	271		
DextraSEC PRO2	271		
DextraSEC PRO10	271		
DextraSEC 96W	271		
Schardinger-α-Dextrin see α-Cyclodextrin <i>BioChemica</i>	250		
Dextrin see γ-Cyclodextrin <i>BioChemica</i>	250		
Schardinger-β-Dextrin see β-Cyclodextrin <i>BioChemica</i>	250		
Dextrin from corn starch see Maltodextrin white pure	511		
Dextrose see D(+)-Glucose anhydrous	377		

N ⁶ -2'-O-Dibutyl-adenosine 3',5'-cyclophosphate sodium salt monohydrate	274	2,4-Dihydroxy-5-fluoropyrimidine see 5-Fluorouracil <i>BioChemica</i>	354
2,3-Dicaffeoyltartaric acid see Cichoric acid HPLC grade	212	4,4'-Dihydroxyfuchson-3,3',3''- tricarboxylic acid triammonium salt see Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122
Dicarboxylic acid C ₂ see Oxalic acid dihydrate	587		
Dichlorodimethylsilane see Dimethyldichlorosilane <i>BioChemica</i>	283	1,7-Dihydroxyginkgolide A see Ginkgolide C HPLC grade	374
1,2-Dichloroethane	274	1,8-Dihydroxy-3-(hydroxymethyl)-anthraquinone see Aloe-Emodin synthetic HPLC grade	82
3,5-Dichloro-2-hydroxybenzenesulfonic acid sodium salt	274	4,6-Dihydroxy-2-mercaptopyrimidine see Thiobarbituric acid <i>BioChemica</i>	812
D(-)-threo-2,2-Dichloro-N-[β-hydroxy-α-(hydroxymethyl)-β-(4-nitrophenyl)-ethyl]-acetamide see Chloramphenicol	201	5,7-Dihydroxy-8-methoxyflavon see Wogonin HPLC grade	866
Dichloromethane	275	5,7-Dihydroxy-4'-methoxyflavone see Acacetin HPLC grade	38
Dichloromethane D ₂	277	2,4-Dihydroxy-5-methylpyrimidine see Thymine	815
3',3''-Dichlorophenolsulfonaphthalein see Chlorophenol red recombinant Human Dickkopf-Related Protein-1 see rHu DKK-1	206	3,23-Dihydroxyolean-12-en-28-acid see Hederagenin	399
N,N'-Dicyclohexylcarbodiimide for synthesis	277	3,4-Dihydroxyphenylethanol see Hydroxytyrosol HPLC grade	428
13,19-Didehydro-12-hydroxy senecionane-11,16-dione see Seneciphyllin HPLC grade	708	2,6-Dihydroxypurine see Xanthine	868
Diethanolamine <i>BioChemica</i>	277	2,4-Dihydroxypyrimidine see Uracil <i>BioChemica</i>	849
2-Diethylaminoethanol pure	277	4,6-Dihydroxypyrimidine-2-thiol see Thiobarbituric acid <i>BioChemica</i>	812
Diethylaminoethyl-dextran see DEAE-Dextran <i>BioChemica</i>	260	12,18-Dihydroxysenecionan-11,16-dione see Retrorsin HPLC grade	685
7-Diethylamino-N-6-aminoethyl-2-oxo-2H-chromen-3-carboxamide see Colorado 400 - 449 nm (yellow spectrum)	240	12,18-Dihydroxysenecionan-11,16-dion-4-oxide see Retrorsin-N-oxide HPLC grade	685
7-Diethylamino-N-6-(iodoacetylaminohexyl)-2-oxo-2H-chromen-3-carboxamid see Colorado 400 - 449 nm (yellow spectrum)	240	3,5-Diiodo-2-hydroxybenzoic acid lithium salt see Lithium 3,5-diiodosalicylate	493
Diethyl dicarbonate see DEPC <i>BioChemica</i>	268	3,5-Diiodosalicylic acid lithium salt see Lithium 3,5-diiodosalicylate	493
Diethyldithiocarbamic acid sodium salt see Sodium diethyldithiocarbamate trihydrate <i>BioChemica</i>	730	Diisobutylphenoxyethoxyethyl dimethylbenzyl ammonium chloride see Benzethonium chloride	133
Diethylene glycol for synthesis	278	Diisopropyl ether	281
Diethylene oxide see 1,4-Dioxane	289	Dimercaprol in EtOH see 2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol	282
Diethylenetriaminepentaacetic acid p. A.	278	2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol	282
N,N-Diethylethylamine see Triethylamine	832	3,3'-(3,3'-Dimethoxy[1,1' biphenyl]-4,4' diyl)-bis(2,5-diphenyl-2H-tetrazolium) dichloride see Tetrazolium blue chloride	809
N,N-Diethyl ethanolamine see 2-Diethylaminoethanol pure	277	1,2-Dimethoxyethane for synthesis	282
Diethyl ether	278	1,2-Dimethoxy-N-methyl(1,3)benzodioxolo(5,6-c)phenanthridium chloride see Chelerythrine chloride <i>BioChemica</i>	196
Diethyl ether D ₁₀	280	N,N-Dimethylacetamide pure	282
Diethylpyrocarbonate see DEPC <i>BioChemica</i>	268	4-(Dimethylamino)-aniline dihydrochloride see N,N-Dimethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	286
Diferuloylmethane see Curcumin HPLC grade	248	p-Dimethylaminoazobenzene see Dimethyl yellow (C.I. 11020)	288
Digilanic C see Lanatosid C HPLC grade	479	4-(Dimethylamino)-azobenzene-2'-carboxylic acid see Methyl red (C.I. 13020)	542
Digitin see Digitonin Reagent USP	280	4-(Dimethylamino)-azobenzene-2'-carboxylic acid sodium salt see Methyl red sodium salt	542
Digitoflavone see Luteolin HPLC grade	498	4-Dimethylaminobenzaldehyde Reag. Ph. Eur.	283
Digitonin Reagent USP	280	2-Dimethylaminoethanol <i>BioChemica</i>	283
Diglycine see Glycylglycine	388	17-Dimethylaminoethylamino-17-demethoxy-geldanamycin <i>BioChemica</i>	283
Diglycine hydrochloride see Glycylglycine hydrochloride Buffer grade	388	5-Dimethylaminonaphthalene-1-sulfonyl chloride see Dansyl chloride <i>BioChemica</i>	259
Diglycol see Diethylene glycol for synthesis	278	5-(Dimethylamino)-1-naphthalenesulphonyl fluoride see Dansyl fluoride <i>BioChemica</i>	259
Dihydrocytochalasin B <i>BioChemica</i>	280	2 - [(3-(Dimethylaminopropyl)-indole-3-yl-3-(indole-3-yl))-maleimide see Bisindolylmaleimide <i>BioChemica</i>	146
1,4-Dihydro-1-ethyl-7-methyl-1,8-naphthyridine-4-one-3-carboxylic acid see Nalidixic acid <i>BioChemica</i>	558	Dimethylarsinic acid see Cacodylic acid <i>BioChemica</i>	175
Dihydrofolic acid <i>BioChemica</i>	281	Dimethylarsinic acid sodium salt see Cacodylic acid sodium salt trihydrate <i>BioChemica</i>	175
α-Dihydrofucosterol see β-Sitosterol	719	Dimethylbenzene see Xylene - Mixture of isomers	871
7,8-Dihydropteroyl-L-glutamic acid see Dihydrofolic acid <i>BioChemica</i>	281	Dimethyldichlorosilane <i>BioChemica</i>	283
Dihydroquercetin see (+)-Taxifolin HPLC grade	796	Dimethyldichlorosilane - Solution 5 % <i>BioChemica</i>	284
22,23-Dihydrostigmasterol see β-Sitosterol	719	N,N-Dimethylethanolamine see 2-Dimethylaminoethanol <i>BioChemica</i>	283
1,2-Dihydroxyanthraquinone see Alizarin (C.I. 58000)	79	N,N-Dimethylformamide	284
1,8-Dihydroxyanthraquinone-3-carbonic acid see Rhein	686	N,N-Dimethylformamide D ₇	285
1,4-Dihydroxybenzene see Hydroquinone	425	N,N-Dimethyl-2-hydroxyethylamine see 2-Dimethylaminoethanol <i>BioChemica</i>	283
2,2'-Dihydroxy-(2,2'-bi-indan)-1,1',3,3'-tetrone see Hydrindantin dihydrate pure	411	N-(1,1-Dimethyl-2-hydroxyethyl)-3-amino-2-hydroxypropanesulfonic acid see AMPSO Buffer grade	108
2,3-Dihydroxybutane-1,4-dithiol see DTE <i>BioChemica</i>	309		
5,7-Dihydroxy-4',6'-dimethoxyflavon see Pectolinarigenin HPLC grade	600		
3α,12α-Dihydroxy-5β-cholanoic acid see Deoxycholic acid <i>BioChemica</i>	264		
3α,7α-Dihydroxy-5β-cholanoic acid see Chenodeoxycholic acid <i>BioChemica</i>	199		
6,7-Dihydroxy-coumarin-6-glucoside see Esculin <i>BioChemica</i>	332		
1,2-Dihydroxyethylene-bisacrylamide <i>BioChemica</i>	281		
2,2'-Dihydroxyethyl ether see Diethylene glycol for synthesis	278		

Dimethyl ketone see Acetone	44	DNA-Dye Methylene blue	302
Dimethylmethylene blue chloride see Dimethylmethylene blue hydrochloride <i>BioChemica</i>	285	DNA-ExitusPlus™	302
Dimethylmethylene blue hydrochloride <i>BioChemica</i>	285	DNA Phage Lambda	303
2,9-Dimethyl-1,10-phenanthroline hydrochloride see Neocuproine hydrochloride monohydrate <i>BioChemica</i>	563	DNA Phage Lambda dam ⁺ , dcm ⁻	303
2',2''-Dimethylphenolsulfonphthalein see <i>m</i> -Cresol purple	246	DNA Phage T7	303
N,N-Dimethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	286	DNA Polymerase I, Klenow-Fragment from <i>E. coli</i>	304
N,N-Dimethyl-1,4-phenylenediammoniumdichloride see N,N-Dimethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	286	DNA-PrecipitAid	304
Dimethyl sulfoxide	286	DNA pUC19 Plasmid	304
Dimethyl sulfoxide D ₆	288	DNase I	305
3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide see Thiazolyl blue tetrazolium bromide <i>BioChemica</i>	811	DNA Size Standard for Gel Electrophoresis see Electrophoresis Size Marker/Standard DNA	319
Dimethyl yellow (C.I. 11020)	288	Reverse Transcription First Strand cDNA Synthesis Kit for RT-PCR see First Strand cDNA Synthesis-Kit for RT-PCR	351
Dimethyl yellow - Solution	288	DNSCI see Dansyl chloride <i>BioChemica</i>	259
Dimidium bromide <i>BioChemica</i>	288	DNSF see Dansyl fluoride <i>BioChemica</i>	259
2,2'-Dinitro-5,5'-dithiodibenzoic acid see 5,5'-Dithio-bis(2-nitrobenzoic acid) <i>BioChemica</i>	291	dNTP with aminolinker see Deoxyribonucleotides with aminolinkers	267
1,4-Dioxane	289	1-Dodecanesulfonic acid sodium salt IPC grade	305
1,4-Dioxane D ₆	289	Dodecanoic acid see Lauric acid pure	479
3,6-Dioxaoctamethylene dimaleimide see BM(PEO) ₃	152	N-Dodecanoyl-N-methylglycine sodium salt see N-Lauroylsarcosine sodium salt	480
5,6-Dioxyuracil see Alloxan monohydrate	81	N-Dodecanoyl-N-methylglycine sodium salt - Solution see N-Lauroylsarcosinate - Solutions	480
Dipotassium hydrogen phosphate see <i>di</i> -Potassium hydrogen phosphate trihydrate p. A.	646	N-Dodecyl-dimethyl-3-ammonio-1-propane-sulfonate see Sulfobetaine SB 12	778
Dipotassium phosphate see <i>di</i> -Potassium hydrogen phosphate anhydrous	646	<i>n</i> -Dodecyl-β-D-glucopyranoside <i>BioChemica</i>	305
<i>n</i> -Dipropylmethane see <i>n</i> -Heptane	403	<i>n</i> -Dodecyl-α-maltoside <i>BioChemica</i>	306
DIPSO Buffer grade	290	<i>n</i> -Dodecyl-β-D-maltoside	306
Direct Blue 14 see Trypan blue (C.I. 23850)	842	Dodecylpoly-(ethyleneglycolether) ₂₃ see Brij® 35 <i>BioChemica</i>	157
Direct Blue 53 see Evan's blue (C.I. 23860)	344	Dodecylsulfate sodium salt see SDS	705
Direct Red 28 see Congo red (C.I. 22120)	241	<i>n</i> -Dodecyl-1-thio-β-D-maltoside <i>BioChemica</i>	306
Disodium glycerol-2-phosphate hydrate see β-Glycerol phosphate disodium salt hydrate <i>BioChemica</i>	386	Dodecyltrimethylammonium bromide <i>BioChemica</i>	306
Disodium phosphate see <i>di</i> -Sodium hydrogen phosphate dihydrate	735	DON see Deoxynivalenol <i>BioChemica</i>	266
Distylin see (+)-Taxifolin HPLC grade	796	Donor : hydrogen peroxide oxidoreductase see Peroxidase from horseradish	607
Di(N-succinimidyl) 3,3'-dithiopropionate see DTSP <i>BioChemica</i>	309	Dowex® - Anion Exchangers, strongly basic	307
Disuccinimidyl glutarate <i>BioChemica</i>	290	Dowex® - Cation Exchangers, strongly acidic	307
Disuccinimidyl octanedioate see Disuccinimidyl suberate <i>BioChemica</i>	290	Doxorubicin hydrochloride <i>BioChemica</i>	308
Disuccinimidyl suberate <i>BioChemica</i>	290	Doxycycline hydrochloride hemihydrate see Doxycyclin hyclate <i>BioChemica</i>	308
Disuccinimidyl tartrate <i>BioChemica</i>	290	Doxycycline hyclate <i>BioChemica</i>	308
Disulfite see Sodium disulfite	732	DRCM Differential Supplement see Supplements for Microbiological Media	786
3,3'-Dithio-bis-(2-aminopropionic acid) hydrochloride see L-Cystine dihydrochloride pure	256	Drigalski Lactose Agar	309
5,5'-Dithio-bis(2-nitrobenzoic acid) <i>BioChemica</i>	291	DSG see Disuccinimidyl glutarate <i>BioChemica</i>	290
Dithiobis(succinimidyl propionate) see DTSP <i>BioChemica</i>	309	DSP see DTSP <i>BioChemica</i>	309
3,3'-Dithiobis(sulfosuccinimidyl propionate) disodium salt see DTSSP	310	DSS see Disuccinimidyl suberate <i>BioChemica</i>	290
Dithiocarbamic acid diethyl ester sodium salt see Sodium diethyldithiocarbamate trihydrate <i>BioChemica</i>	730	DST see Disuccinimidyl tartrate <i>BioChemica</i>	290
3,3'-Dithiodipropionic acid-di-(N-hydroxysuccinimide ester) see DTSP <i>BioChemica</i>	309	DTAB see Dodecyltrimethylammonium bromide <i>BioChemica</i>	306
1,4-Dithioerythritol see DTE <i>BioChemica</i>	309	DTE <i>BioChemica</i>	309
Dithioglycerol in EtOH see 2,3-Dimercapto-1-propanol - Solution 20 % in Ethanol	282	DTNB see 5,5'-Dithio-bis(2-nitrobenzoic acid) <i>BioChemica</i>	291
1,4-Dithio-DL-threit(ol) see DTT	310	DTPA see Diethylenetriaminepentaacetic acid p. A.	278
rHu DKK-1	291	DTSP <i>BioChemica</i>	309
17-DMAG see 17-Dimethylaminoethylamino-17-demethoxygeldanamycin <i>BioChemica</i>	283	DTSSP	310
DMDCS see Dimethyldichlorosilane <i>BioChemica</i>	283	DTT	310
DMEM (Dulbecco's mod. Eagle - Media)	291	DTT - Solution (1 M) Molecular biology grade	310
DMEM/F12 (1:1) - Media	293	dTTP-Na ₃ see 2'-Deoxythymidine 5'-triphosphoric acid trisodium salt <i>BioChemica</i>	268
DMF see N,N-Dimethylformamide	284	dTTP - Solution see 2'-Deoxythymidine 5'-triphosphoric acid - Solution (100 mM) <i>BioChemica</i>	268
DMPD · 2HCl see N,N-Dimethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	286	Dulcitol see Dulcitol <i>BioChemica</i>	310
DMSO see Dimethyl sulfoxide	286	Dulcitol <i>BioChemica</i>	310
DNA Cot-I, human	294	Dye Terminator Removal by Gel Filtration see DextraSEC 96W	271
DNA Isolation Kits	294		

E

E-64	311
EAFS - Solution	311
Earle's balanced salts (EBSS)	311

Ebselen	312	recombinant Human Endothelial-Monocyte Activating	326
[E.C. 1.1.1.-] see D-Mandelate dehydrogenase, bacterial	513	Polypeptide-2 see rHu EMAP-2 bioconfident grade	
Technical grade		End-polishing and blunt-end cloning kit see PCR Blunt Cloning Kit	595
[E.C. 1.11.1.7] see Myeloperoxidase, human	555	Englerin A	327
[E.C. 1.1.1.27] see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475	Enhanced ChemiLuminescence Detection Kit see Cheluminate-HRP PicoDetect	197
[E.C. 1.13.11.12] see Lipoxidase from soybean	491	Enhanced ChemiLuminescence Detection Kit FemtoDetect Plus	198
[E.C. 1.1.3.4] see Glucose Oxidase from <i>Aspergillus niger</i>	378	see Cheluminate-HRP FemtoDetect Plus	
[E.C. 1.4.1.9] see L-Leucine dehydrogenase, bacterial Technical grade	487	Enhanced ChemiLuminescence Detection Kit PicoDetect	198
[E.C. 2.7.7.7] see <i>Taq</i> DNA Polymerase DNA-free	793	Extended see Cheluminate-HRP PicoDetect Extended	
[E.C. 3.1.1.3] see Lipase from porcine pancreas	490	Enolase, Neuron-specific human	327
[E.C. 3.1.2.1.1] see DNase I	305	ENU see N-Nitroso-N-ethylurea	575
[E.C. 3.1.3.1] see Phosphatase, alkaline from calf intestine (CIP)	623	Eosin B (C.I. 45400)	328
[E.C. 3.2.1.17] see Lysozyme	500	Eosin B - Solution	328
[E.C. 3.2.1.35] see Hyaluronidase	410	Eosin Blue see Phloxine B (C.I. 45410) Microscopy grade	622
[E.C. 3.4.21.1] see α -Chymotrypsin	211	Eosin Bluish see Eosin B (C.I. 45400)	328
[E.C. 3.4.21.14] see Proteinase K, recombinant	673	Eosin - Methylene Blue see Jenner's stain	467
[E.C. 3.4.21.4] see Trypsin from bovine pancreas	842	Eosin-Methylene blue according to Leishman see Leishman's Stain	485
[E.C. 3.4.22.32] see Bromelain from pineapple <i>BioChemica</i>	158	Eosin-Methylene blue according to Wright see Wright's Eosin-Methylene blue	867
[E.C. 3.4.23.1] see Pepsin	603	Eosin-Methylene blue - Solution acc. to May-Grünwald see May-Gruenwald - Solution Microscopy grade	519
[E.C. 4.1.2.10] see Hydroxynitrile Lyase, plant Technical grade	427	Eosin Methylene Blue Agar	328
Echinacosid HPLC grade	312	Eosin Y (C.I. 45380)	328
Ectoïne	312	Eosin Y - Solution	329
EDAC see EDC hydrochloride <i>BioChemica</i>	313	Eosin Yellowish see Eosin Y (C.I. 45380)	328
EDC hydrochloride <i>BioChemica</i>	313	(-)-Epicatechin HPLC grade	329
Edetic acid see EDTA	313	(-)-Epicatechin gallate HPLC grade	329
EDTA	313	(-)-Epicatechol see (-)-Epicatechin HPLC grade	329
EDTA calcium magnesium salt pure	313	recombinant Human Epidermal Growth Factor see rHu EGF	317
EDTA dipotassium salt dihydrate <i>BioChemica</i>	314	recombinant Mouse Epidermal Growth Factor see rM EGF	318
EDTA disodium salt dihydrate	314	(-)-Epigallocatechin HPLC grade	329
EDTA disodium salt - Solution (31.5 g/L)	315	(-)-Epigallocatechin gallate	329
EDTA disodium salt - Standard volumetric solutions	315	2,3-Epoxy-4-oxo-7,10-dodecadienoylamide see Cerulenin <i>BioChemica</i>	192
EDTA - KOH - Solution	316	N-(trans-Epoxysuccinyl)-L-leucine-4-guanidinobutylamide see E-64	311
EDTA - NaOH - Solution	316	trans-Epoxysuccinyl-L-leucylamido-(4-guanidino)butane see E-64	311
EDTA - Solution pH 8.0 (0.5 M)	316	EPPS see HEPPS Buffer grade	402
EDTA - Solution pH 8.0 (0.25 M)	316	Ergocalciferol see Vitamin D ₂	856
EDTA tetrasodium salt dihydrate	317	Eriochrome black T (C.I. 14645)	330
EDTA tripotassium salt dihydrate pure	317	Eriochrome Cyanine R see Aurintricarboxylic acid triammonium salt (C.I. 43810) <i>BioChemica</i>	122
rHu EGF	317	Erioglaucine (C.I.42090)	330
rM EGF	318	Erythromycin base <i>BioChemica</i>	331
Sterile Egg Yolk Polymyxin (PREP) Emulsion see Supplements for Microbiological Media	786	D(-)-Erythrose <i>BioChemica</i>	331
EGS	318	Erythrosin B (C.I. 45430)	331
EGTA Molecular biology grade	318	Erythrosin B - Solution	331
rHu EG-VEGF	318	Erythrosin Bluish see Erythrosin B (C.I. 45430)	331
Ehrlich's reagent see 4-Dimethylaminobenzaldehyde Reag. Ph. Eur.	283	Esbach reagent	331
Ehrlich's Reagent	319	Escin <i>BioChemica</i>	331
Elactocin see Leptomycin B <i>BioChemica</i>	486	Esculin <i>BioChemica</i>	332
Elastase, neutrophil Grade 2, human	319	Esculin sequihydrate see Esculin <i>BioChemica</i>	332
Elastase Inhibitor I	319	Ethanedial see Glyoxal - Solution 40 % Molecular biology grade	388
Electrophoresis Size Marker/Standard DNA	319	1,2-Ethanediamine see Ethylenediamine p. A.	341
Electrophoresis Size Marker/Standard Protein	325	1,2-Ethanediol see Ethylene glycol	341
Elenol acid glucoside HPLC grade	326	1,2-Ethanedisulfonic acid disodium salt IPC grade	332
Eleutheroside B HPLC grade	326	Ethanethioamide see Thioacetamide p. A.	812
Eleutheroside E HPLC grade	326	Ethanol 80 % - 100 %	332
Ellman's reagent see 5,5'-Dithio-bis(2-nitrobenzoic acid) <i>BioChemica</i>	291	Ethanol $\leq$ 70 %	335
rHu EMAP-2 bioconfident grade	326	Ethanol 10 % - 39 %	336
Emodin HPLC grade	326	Ethanol D ₆ absolute	337
Emodin-l-rhamnoside see Frangulin A HPLC grade	363	Ethanolamine <i>BioChemica</i>	337
Empetrin see Delphinidin-3-galactoside chloride HPLC grade	261	Ether see Diethyl ether	278
Endo Agar Base	327	Ethidium bromide <i>BioChemica</i>	338
Endo Basic Fuchsin Solution see Supplements for Microbiological Media	786	Ethidium bromide - Solutions	338
recombinant Human Endocrine Gland-Vascular Endothelial Growth Factor see rHu EG-VEGF	318		

AppliChem	Alphabetical product list	General ● Catalog
2-Ethoxybenzoic acid pure	338	Exonuclease III 344
2-Ethoxyethanol for synthesis	339	Expansive see Patulin <i>BioChemica</i> 593
Ethyl acetate	339	Extraction buffer for luciferase and β -galactosidase assay 344
Ethyl alcohol see Ethanol $\leq 70\%$	335	
Ethyl 3-aminobenzoate methanesulfonate salt see 3-Aminobenzoic acid ethyl ester methanesulfonate <i>BioChemica</i>	87	F
N-Ethyl-N'-(3-dimethylaminopropyl)-carbodiimide hydrochloride see EDC hydrochloride <i>BioChemica</i>	313	FABP see Fatty Acid Binding Protein (FABP), human 345
Ethylene chloride see 1,2-Dichloroethane	274	FAD-Na ₂ see Flavin adenine dinucleotide disodium salt dihydrate <i>BioChemica</i> 351
Ethylenediamine p. A.	341	FAH ₂ see Dihydrofolic acid <i>BioChemica</i> 281
Ethylenediaminetetraacetic acid calcium magnesium salt see EDTA calcium magnesium salt pure	313	FALGPA <i>BioChemica</i> 345
Ethylenediaminetetraacetic acid see EDTA	313	Faricinin see Thiolutin <i>BioChemica</i> 813
Ethylenediaminetetraacetic acid dipotassium salt dihydrate see EDTA dipotassium salt dihydrate <i>BioChemica</i>	314	Fast Green FCF (C.I. 42053) 345
Ethylenediaminetetraacetic acid disodium salt dihydrate see EDTA disodium salt dihydrate	314	Fastidious Anaerobe Isolation Agar Base 345
Ethylenediaminetetraacetic acid tetrasodium salt dihydrate see EDTA tetrasodium salt dihydrate	317	Fatty Acid Binding Protein (FABP), human 345
Ethylenediaminetetraacetic acid tripotassium salt dihydrate see EDTA tripotassium salt dihydrate pure	317	Fehling's Reagents 346
Ethylene dichloride see 1,2-Dichloroethane	274	Ferrichloride hexahydrate see Iron(III) chloride hexahydrate 459
Ethylenedinitrilotetraacetic acid see EDTA	313	Ferric nitrate see Iron(III) nitrate nonahydrate 460
Ethylenedinitrilotetraacetic acid dipotassium salt dihydrate see EDTA dipotassium salt dihydrate <i>BioChemica</i>	314	Ferric sulfate see Iron(II) sulfate heptahydrate 461
Ethylenedinitrilotetraacetic acid disodium salt dihydrate see EDTA disodium salt dihydrate	314	Ferriprotoporphyrin IX chloride see Hemin porcine 400
Ethylenedinitrilotetraacetic acid tetrasodium salt dihydrate see EDTA tetrasodium salt dihydrate	317	Ferritin from Heart, human 346
Ethylenedinitrilotetraacetic acid tripotassium salt dihydrate see EDTA tripotassium salt dihydrate pure	317	Ferritin from Liver, human 346
Ethylene glycol	341	Ferritin from Placenta, human 346
Ethylene glycol : Water - Mixture 1 : 1	342	Ferritin from Spleen, human 347
Ethylene glycol-bis-(β -aminoethyl ether)-N,N,N',N'-tetraacetic acid see EGTA Molecular biology grade	318	FES see Zearalenone <i>BioChemica</i> 874
Ethylene glycol bis(succinimidyl succinate) see EGS	318	α -Fetoprotein (AFP), human 347
Ethylene glycol bis(sulfosuccinimidylsuccinate) disodium salt see Sulfo-EGS	779	Fetuin low Endotoxin 347
Ethylene glycol monobutyl ether	342	rHu aFGF bioconfident grade 347
Ethyleneglycol monoethyl ether see 2-Ethoxyethanol for synthesis	339	rHu aFGF 347
Ethylene glycol monoisopropyl ether for synthesis	342	rM aFGF 348
Ethylene glycol phenyl ether see 2-Phenoxyethanol	619	rHu bFGF bioconfident grade 348
Ethylene tetrachloride see Tetrachloroethylene pure	804	FGF-2 see rHu bFGF (155) 349
Ethylene trichloride see Trichloroethylene	830	rHu bFGF (147) 348
Ethyl ether see Diethyl ether	278	rHu bFGF (154) 348
Ethylglycol see 2-Ethoxyethanol for synthesis	339	rHu bFGF (155) 349
Ethyl green see Methyl green (C.I. 42590)	539	rHu FGF (21) 349
Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	343	rM bFGF 349
1-Ethyl-2-((1E,3E)-3-(1-(3-(2-iodoacetamido)propyl)-3,3-dimethylindolin-2-ylidene)prop-1-enyl)-3,3-dimethyl-3H-indolium iodide see Colorada 550 - 599 nm (purple spectrum)	231	rM FGF-9 349
N-Ethylmaleimide <i>BioChemica</i>	343	FGF-a see rM aFGF 348
2-(Ethylmercury-mercapto)-benzoic acid sodium salt see Thimerosal <i>BioChemica</i>	812	rHu FGF-a see rHu aFGF 347
3-(N-Ethyl-3-methylanilino)-2-hydroxypropanesulfonic acid sodium salt see TOOS <i>BioChemica</i>	823	FGF-b see rM bFGF 349
Ethyl methyl ketone see Methyl ethyl ketone	538	rHu FGF-b (147) see rHu bFGF (147) 348
N-Ethyl-N-nitrosourea see N-Nitroso-N-ethylurea	575	rHu FGF-b (154) see rHu bFGF (154) 348
Ethylparaben see Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	343	rHu FGFB (155) see rHu bFGF (155) 349
1-Ethyl-2-pyrrolidone for synthesis	343	Fibroblast Growth Factor see rHu aFGF 347
1-Ethyl-3-pyrrolin-2,5-dione see N-Ethylmaleimide <i>BioChemica</i>	343	recombinant Mouse basic Fibroblast Growth Factor see rM bFGF 349
Etzold's staining solution	343	recombinant Human Fibroblast Growth Factor see rHu bFGF (155) 349
Euflavine see Acriflavine hydrochloride <i>BioChemica</i>	51	recombinant Human basic Fibroblast Growth Factor (147) see rHu bFGF (147) 348
Evan's blue (C.I. 23860)	344	recombinant Human basic Fibroblast Growth Factor (154) see rHu bFGF (154) 348
		recombinant Human Fibroblast growth Factor (21) see rHu FGF (21) 349
		recombinant Mouse Fibroblast Growth Factor-9 see rM FGF-9 349
		Fibronectin - Solution Cell culture grade 350
		Ficoll® 400 350
		Field's stain A 350
		Field's stain B 350
		Firefly Luciferin see D-Luciferin free acid 496
		First Strand cDNA Synthesis-Kit for RT-PCR 351
		FITC <i>BioChemica</i> 351
		Fixing salt see Sodium thiosulfate anhydrous 755
		FK506 <i>BioChemica</i> 351
		FK520 see Ascomycin <i>BioChemica</i> 119
		Flagecidin see Anisomycin <i>BioChemica</i> 110
		Flavin adenine dinucleotide disodium salt dihydrate <i>BioChemica</i> 351

Flavin mononucleotide monosodium salt dihydrate <i>BioChemica</i>	352
Florisil® for chromatography 60-100 mesh	352
rHu FLT-3 L bioconfident grade	352
rHu FLT-3 L	352
rM FLT-3 L	352
recombinant Mouse FLT-3 Ligand see rM FLT-3 L	352
recombinant Human FLT-3 Ligand see rHu FLT-3 L	352
recombinant Human Flt3-ligand see rHu FLT-3 L bioconfident grade	352
Fluorescamine <i>BioChemica</i>	353
Fluorescein dilaurate <i>BioChemica</i>	353
Fluorescein isothiocyanate isomer I see FITC <i>BioChemica</i>	351
Fluorescein sodium see Uranine AP (C.I. 45350)	849
9 α -Fluoro-16 α -methylprednisolone see Dexamethason <i>BioChemica</i>	269
5-Fluoroorotic acid <i>BioChemica</i>	353
5-Fluoro-1H-pyrimidine-2,4-dione see 5-Fluorouracil <i>BioChemica</i>	354
5-Fluoro-2,4(1H,3H)-pyrimidinedione see 5-Fluorouracil <i>BioChemica</i>	354
5-Fluorouracil <i>BioChemica</i>	354
5-Fluorouracil-4-carboxylic acid see 5-Fluoroorotic acid <i>BioChemica</i>	353
Fluram see Fluorescamine <i>BioChemica</i>	353
FMN see Flavin mononucleotide monosodium salt dihydrate <i>BioChemica</i>	352
Fms-Like Tyrosine Kinase-3-Ligand see rM FLT-3 L	352
5-FOA see 5-Fluoroorotic acid <i>BioChemica</i>	353
Folic acid crystalline	354
Folin-Ciocalteu's phenol reagent	354
Folinic acid calcium salt pentahydrate	355
Food Green 3 see Fast Green FCF (C.I. 42053)	345
Formaldehyde - Solutions (concentrations: 20 - 37 %)	355
Formaldehyde - Solution 4 % pure	357
Formaldehyde - Solution 10 % phosphate buffered	357
Formaldehyde - Solution (concentrations: < 5 %) phosphate buffered	358
Formalin see Formaldehyde - Solution 10 % phosphate buffered	357
Formaline see Formaldehyde - Solutions (concentrations: 20 - 37 %)	355
Formamide	358
Formic acid	359
Formic acid amide see Formamide	358
Formic acid dimethylamide see N,N-Dimethylformamide	284
Formic acid sodium formate buffer see Kristenson's - Solution	473
Formic acid sodium salt see Sodium formate pure	733
Formol see Formaldehyde - Solutions (concentrations: 20 - 37 %)	355
Formvar® Resin Electron Microscopy Grade	362
p-Formyldimethylaniline see 4-Dimethylaminobenzaldehyde Reag. Ph. Eur.	283
5-Formyl-5,6,7,8-tetrahydropteroyl-L-glutamic acid see Folinic acid calcium salt pentahydrate	355
Forskolin <i>BioChemica</i>	363
Frangula-Emodin see Emodin HPLC grade	326
Frangulin A HPLC grade	363
Frangulin B HPLC grade	363
Frangulin (A : B approx. 1 : 4)	363
Frangulosid see Frangulin (A : B approx. 1 : 4)	363
Freez Media - DMSO	363
β -D-Fructofuranosyl- α -D-glucopyranosid see D(+)-Sucrose	776
D(-)-Fructose	364
D-Fructose-1,6-diphosphate trisodium salt octahydrate <i>BioChemica</i>	364
Fruit sugar see D(-)-Fructose	364
5-FU see 5-Fluorouracil <i>BioChemica</i>	354
Fuchsin acidic disodium salt (C.I. 42685)	364
Fuchsin basic (C.I. 42510) Microscopy grade	364

Fuchsin S see Fuchsin acidic disodium salt (C.I. 42685)	364
Fucidin see Fusidic acid sodium salt <i>BioChemica</i>	366
D(+)-Fucose <i>BioChemica</i>	365
L(-)-Fucose <i>BioChemica</i>	365
Fumagillin <i>BioChemica</i>	365
Fumaric acid	365
Fumifil B see Fumagillin <i>BioChemica</i>	365
Fumonisin B1 <i>BioChemica</i>	366
Fumonisin B2 <i>BioChemica</i>	366
Fungicidin see Nystatin dihydrate <i>BioChemica</i>	580
N ⁶ -Furfuryladenine see Kinetin <i>BioChemica</i>	472
6-Furfurylaminopurine see Kinetin <i>BioChemica</i>	472
N-[3-(2-Furylacryloyl)]-L-leucyl-glycyl-L-prolyl-L-alanine see FALGPA <i>BioChemica</i>	345
Fusariotoxin see T2 Toxin <i>BioChemica</i>	789
Fusidic acid sodium salt <i>BioChemica</i>	366

G

G418 disulfate <i>BioChemica</i>	366
G418 disulfate - Solution, sterile	367
GA ₃ see Gibberellic acid <i>BioChemica</i>	372
Galactitol see Dulcitol <i>BioChemica</i>	310
D-Galactopyranose see D(+)-Galactose	367
4-O- β -D-Galactopyranosyl-D-fructose see Lactulose <i>BioChemica</i>	479
4-O- β -D-Galactopyranosyl-D-glucitol see Lactitol monohydrate <i>BioChemica</i>	477
6-O- α -D-Galactopyranosyl-D-glucose see D(+)-Melibiose monohydrate <i>BioChemica</i>	524
α -D-Galactopyranosyl-1-phosphate see α -D-Galactose-1-phosphate dipotassium salt dihydrate	368
D(+)-Galactosamine hydrochloride <i>BioChemica</i>	367
D(+)-Galactose <i>BioChemica</i> , non animal origin	367
D(+)-Galactose	367
α -D-Galactose-1-phosphate dipotassium salt dihydrate	368
Galaptin see rHu Galectin-1	368
recombinant Human Galectin-1 see rHu Galectin-1	368
rHu Galectin-1	368
(-)-Gallocatechin HPLC grade	368
Gallocatechol see (-)-Gallocatechin HPLC grade	368
D-GalNAc see N-Acetyl-D-galactosamine	49
Gamborg's B5 Plant salts	368
rHu G-CSF bioconfident grade	369
rHu G-CSF	369
rM G-CSF	369
rHu GDF-5	369
GDF-8 see rHu Myostatin	555
rHu GDNF bioconfident grade	370
rHu GDNF	370
Gelatin powdered, pure Ph. Eur., NF	370
Geldanamycin <i>BioChemica</i>	371
Gel Filtration Column for Protein Purification see DextraSEC PRO10	271
Gel Filtration Dye Terminator Removal see DextraSEC 96W	271
Gel Filtration Matrix Dextran-based see AppliXchange-G25 M	116
Gel Filtration Nucleic Acids see DextraSEC NA2	270
Gel Filtration Nucleic Acids see DextraSEC NA10	271
Gel Filtration Protein see DextraSEC PRO2	271
Gellan gum	371
GeISave	371
Genistein <i>BioChemica</i>	372
Gentamicin sulfate see Gentamycin sulfate	372
Gentamycin sulfate	372
Gentian violet see Crystal violet (C.I. 42555)	247
β -D-Gentiobiose	372
5-Geranyloxypsoralen see Bergamottin HPLC grade	136
Gibberellic acid <i>BioChemica</i>	372

- 984 -

rHu GRO-β	391	Hederagenin	399
GRO-beta see rHu GRO-β	391	Hederasaponin C see Hederacoside C	399
AC-GROW hi (50X)	391	α-Hederin HPLC grade	400
AC-GROW lo (50X)	391	Hektoen Enteric Agar	400
recombinant Human Growth and Differentiation Factor-5 see rHu GDF-5	369	Helianthine see Methyl orange (C.I. 13025)	540
Growth Differentiation Factor-8 see rHu Myostatin	555	Helicocerin see Cerulenin <i>BioChemica</i>	192
Growth Factor Mixture (Supplement) see Supplements for Microbiological Media	786	Helixin C see Nigericin sodium salt <i>BioChemica</i>	567
GSH see L-Glutathione reduced <i>BioChemica</i>	383	Helixine see α-Hederin HPLC grade	400
GSSG see L-Glutathione oxidized <i>BioChemica</i>	383	Hematoxylin monohydrate (C.I. 75290) Microscopy grade	400
GTP disodium salt see Guanosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	394	Hemin chloride see Hemin porcine	400
GuaHCl see Guanidine hydrochloride	392	Hemin porcine	400
Guanidine hydrochloride	392	Heparin sodium salt	401
Guanidine hydrochloride - Solutions	392	recombinant Human Hepatocyte Growth Factor see rHu HGF	408
Guanidine isothiocyanate see Guanidine thiocyanate	393	HEPES	401
Guanidine rhodanide see Guanidine thiocyanate	393	HEPES buffer (1 M)	401
Guanidine thiocyanate	393	HEPES - balanced salts	402
Guanidine thiocyanate - Solutions Molecular biology grade	393	HEPES hemisodium salt Buffer grade	402
Guanidinium chloride see Guanidine hydrochloride	392	HEPES sodium salt	402
Guanine <i>BioChemica</i>	394	HEPPS Buffer grade	402
Guanine-9-β-D-ribofuranoside see Guanosine <i>BioChemica</i>	394	HEPPSO Buffer grade	403
Guanine hydrochloride <i>BioChemica</i>	394	n-Heptane	403
Guanosine <i>BioChemica</i>	394	1-Heptanesulfonic acid sodium salt anhydrous IPC grade	404
Guanosine 5'-monophosphoric acid disodium salt <i>BioChemica</i>	394	1-Heptanesulfonic acid sodium salt monohydrate IPC grade	404
Guanosine 5'-triphosphoric acid disodium salt <i>BioChemica</i>	394	6-O-(N-Heptylcarbamoyl)-methyl-α-D-glucopyranoside see HECAMEG <i>BioChemica</i>	399
N-Guanyl-N-methylglycine monohydrate see Creatine monohydrate <i>BioChemica</i>	246	n-Heptyl-β-D-glucopyranoside <i>BioChemica</i>	404
GuaSCN see Guanidine thiocyanate	393	n-Heptyl-β-D-glucoside see n-Heptyl-β-D-glucopyranoside <i>BioChemica</i>	404
		recombinant Human Heregulin-β-2 see rHu NRG-1 bioconfident grade	578
		Hesperetin HPLC grade	405
		Hesperetin-7-rutinoside, Cirantin see Hesperidin HPLC grade	405
		Hesperidin HPLC grade	405
		1-Hexadecanol see Cetyl alcohol for synthesis	193
		N-Hexadecylpyridinium bromide see Cetylpyridinium bromide <i>BioChemica</i>	193
		Hexadecylpyridinium chloride monohydrate see Cetylpyridinium chloride monohydrate <i>BioChemica</i>	194
		Hexadecyltrimethylammonium bromide see Cetyltrimethylammonium bromide	194
		2,4-Hexadienoic acid see Sorbic acid pure Ph. Eur., NF	758
		Hexahydrobenzene see Cyclohexane	250
		Hexahydrophenol see Cyclohexanol for synthesis	251
		Hexahydrotoluene see Methylcyclohexane for synthesis	537
		Hexaline see Cyclohexanol for synthesis	251
		1,1,1,3,3,3-Hexamethylidisilazane GC grade	405
		1,1'-Hexamethylene bis-[5-(4-chloro-phenyl)-biguanide] diacetate see Chlorhexidine diacetate monohydrate <i>BioChemica</i>	203
		Hexamethylene pararoseaniline chloride see Crystal violet (C.I. 42555)	247
		Hexamminecobalt(III) chloride Molecular biology grade	405
		iso-Hexane (n-Hexane < 5 %)	406
		n-Hexane	406
		Hexanedioic acid see Adipic acid for synthesis	68
		(2R,3R,4R,5R)-Hexane-1,2,3,4,5,6-hexol see D(-)-Mannitol	515
		1-Hexanesulfonic acid sodium salt anhydrous IPC grade	407
		1-Hexanesulfonic acid sodium salt monohydrate IPC grade	408
		n-Hexyl-β-D-maltoside <i>BioChemica</i>	408
		Hexylene glycol see (±)-2-Methyl-2,4-pentandiol <i>BioChemica</i>	541
		rHu HGF	408
		HHDK see Derma-ExitusPlus™	269
		High Density Lipoprotein see Lipoprotein, high density (HDL), human	490
		H-His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Lys-Tyr-Leu-Asp-Ser-Arg-Arg-Ala-Gln-Asp-Phe-Val-Gln-Trp-Leu-Met-Asn-Thr-Lys-Arg-Asn-Lys-Asn-Asn-Ile-Ala-OH see Glucagon 1-37	375
		Histamine dihydrochloride	408
H			
H ₃ PO ₂ see Hypophosphorous acid 50 %	431		
H ₃ PO ₃ see Phosphorous acid ≤ 50 %	627		
H ₃ PO ₄ see ortho-Phosphoric acid (concentrations ≥ 25 %)	624		
H ₂ SO ₄ see Sulfuric acid 10 %	783		
H ₂ SO ₄ - Standard volumetric solutions see Sulfuric acid - Standard volumetric solution (6 M)	784		
H-7 <i>BioChemica</i>	395		
H-8 <i>BioChemica</i>	395		
H-9 <i>BioChemica</i>	395		
Haines reagent	395		
Ham's F10 - Medium	395		
Ham's F12 - Medium	396		
Ham's F12K - Medium	397		
Hamamelitannin	397		
Hanks' balanced salts (HBSS)	397		
Haptoglobin, human	398		
Harden-Young - Ester see D-Fructose-1,6-diphosphate trisodium salt octahydrate <i>BioChemica</i>	364		
Harpagide HPLC grade	398		
Harpagoside HPLC grade	398		
rHu HB-EGF bioconfident grade	398		
HBGF-2 see rHu bFGF (155)	349		
HBGH-2 see rHu bFGF (155)	349		
HBr see Hydrobromic acid 48 %	411		
hCG see Chorionic Gonadotropin (hCG), human	210		
h-HCG see Chorionic Gonadotropin β-subunit, human	210		
HCl see Hydrochloric acid (concentrations: ≥ 25%)	411		
HCl (1 M) see Hydrochloric acid (1 M) Molecular biology grade	416		
HCl - Standard volumetric solutions see Hydrochloric acid - Standard volumetric solutions ≤ 2.5 M (aqueous solutions)	417		
HClO ₄ see Perchloric acid	605		
HDL see Lipoprotein, high density (HDL), human	490		
Heating bath liquid see Oil bath filling	583		
HECAMEG <i>BioChemica</i>	399		
Hederacoside C	399		

L-Histidine base	409	Hydroxyectoine	425
L-Histidine hydrochloride monohydrate	409	4-(2-Hydroxyethyl)-1-piperazine-1-ethanesulfonic acid see	401
HMDS see 1,1,1,3,3,3-Hexamethyldisilazane GC grade	405	HEPES	
HNO ₃ - Standard volumetric solutions see Nitric acid - Standard volumetric solutions	570	4-(2-Hydroxyethyl)-piperazine-1-ethanesulfonic acid sodium salt see HEPES sodium salt	402
Hoechst 33258 see Bisbenzimidazole H33258 <i>BioChemica</i>	145	N-(2-Hydroxyethyl)-piperazine-N'-2-ethanesulfonic acid see HEPES	401
Hoechst 33342 see Bisbenzimidazole H33342 <i>BioChemica</i>	146	N-(2-Hydroxyethyl)-piperazine-N'-2-ethanesulfonic acid sodium salt see HEPES sodium salt	402
Homidium bromide see Ethidium bromide <i>BioChemica</i>	338	4-(2-Hydroxyethyl)-piperazine-1-(2-hydroxy)-propanesulfonic acid see HEPPSO Buffer grade	403
L-Homoglutamic acid see L-2-Aminoadipic acid <i>BioChemica</i>	85	N-(2-Hydroxyethyl)-piperazine-N'-3-propanesulfonic acid see HEPPS Buffer grade	402
Homoorientin HPLC grade	410	4-(2-Hydroxyethyl)-piperazine-1-propanesulfonic acid see HEPPS Buffer grade	402
HPBCD see 2-Hydroxypropyl-β-cyclodextrin	428	N-(2-Hydroxyethyl)-trimethylammoniumchloride see Choline chloride <i>BioChemica</i>	209
HRP-Stabilizer see Immunoassay Buffer	446	1-Hydroxyginkgolide A see Ginkgolide B HPLC grade	374
HT2 Toxin <i>BioChemica</i>	410	L-Hydroxyisocaproate dehydrogenase, bacterial Technical grade	426
Hyaluronidase	410	Hydroxylamine hydrochloride see Hydroxylammonium chloride	426
Hybridization Solution	410	Hydroxylammonium chloride	426
Hydrazide-biotin see (+)-Biotin hydrazide	141	Hydroxylammonium chloride - Solutions	426
Hydrazide-LC-Biotin see (+)-Biotinamidohexanoic acid hydrazide	140	3β-Hydroxy-lup-20(29)-en-28-oi see Betulinic acid HPLC grade	137
Hydrazine - Reagent	411	(4S,5S)-5-Hydroxy-2-methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid see Hydroxyectoine	425
Hydrindantin dihydrate pure	411	4-Hydroxy-4-methyl-2-pentanone see Diacetone alcohol for synthesis	272
Hydrobromic acid 48 %	411	Hydroxynitrile Lyase, plant Technical grade	427
Hydrochloric acid (concentrations: ≥ 25%)	411	(3α,4β)-3-Hydroxy-olean-12-en-23-oi acid see α-Boswellic acid HPLC grade	155
Hydrochloric acid (concentrations: 10 - < 25 %)	413	7-Hydroxy-8-phenyl- azo- 1,3-naphthalenedisulfonic acid see Orange G (C.I. 16230)	585
Hydrochloric acid (concentrations: < 10 %)	415	L-Hydroxyproline	427
Hydrochloric acid (1 M) Molecular biology grade	416	2-Hydroxypropionic acid silver salt see L(+)-Lactic acid silver salt <i>BioChemica</i>	477
Hydrochloric acid D ₁ (DCI, 20 % solution in D ₂ O)	416	2-Hydroxypropyl-β-cyclodextrin	428
Hydrochloric acid - Standard volumetric solutions 8 M - 10 M (aqueous solutions)	416	6-Hydroxypurine see Hypoxanthine <i>BioChemica</i>	431
Hydrochloric acid - Standard volumetric solutions 3 M - 6 M (aqueous solutions)	417	trans-L-4-Hydroxypyrrolidine-2-carboxylic acid see L-Hydroxyproline	427
Hydrochloric acid - Standard volumetric solutions ≤ 2.5 M (aqueous solutions)	417	8-Hydroxyquinoline	428
Hydrochloric acid - Alcohol - Mixtures	419	12-Hydroxysenecionan-11,16-dion-4-oxide see Senecionin-N-oxide HPLC grade	708
Hydrocortisone <i>BioChemica</i>	420	12-Hydroxysenecionane-11,16-dione see Senecionin HPLC grade	708
Hydrofluoric acid	420	DL-Hydroxysuccinic acid see DL-Malic acid	509
Hydrofluoric acid - Standard volumetric solutions	421	S(-)-2-Hydroxysuccinic acid see L(-)-Malic acid	510
Hydrogen peroxide 50 % pure	422	DL-Hydroxysuccinic acid monosodium salt see DL-Malic acid monosodium salt	509
Hydrogen peroxide 35 %	422	S(-)-2-Hydroxysuccinic acid sodium salt see L(-)-Malic acid monosodium salt	510
Hydrogen peroxide (concentrations: 10 - < 35 %)	423	N-Hydroxysuccinimidobiotin see (+)-Biotin-N-hydroxysuccinimide ester <i>BioChemica</i>	142
Hydrogen peroxide - Standard volumetric solutions	424	3-Hydroxy-4-[2-sulfo-4-(4-sulphophenylazo)-phenylazo]-2,7-naphthalenedisulfonic acid see Ponceau S (C.I. 27195)	635
Hydroiodic acid 57 % pure	424	5-Hydroxytetracycline hydrochloride see Oxytetracycline hydrochloride	589
Hydroquinone	425	(R)-3-Hydroxy-4-trimethylammoniobutyrate see L-Carnitine <i>BioChemica</i>	186
Hydroxyacetic acid - Solution see Glycolic acid - Solutions	387	Hydroxytyrosol HPLC grade	428
p-Hydroxyampicillin see Ampicillin trihydrate Molecular biology grade	108	N-Hydroxyurea	429
17β-4-Hydroxyandrostene-3-on see Testosterone	802	3α-Hydroxy-urs-12-en-11-keto-23-oi acid see 11-Keto-β-boswellic acid HPLC grade	470
8-Hydroxy-1-azanaphthaline see 8-Hydroxyquinoline	428	(3α,4β)-3-Hydroxysurs-12-en-23-oi acid see β-Boswellic acid HPLC grade	156
2-Hydroxybenzoic acid see Salicylic acid	701	3β-Hydroxysurs-12-en-28-oi acid see Ursolic acid HPLC grade	852
4-Hydroxybenzoic acid	425	Hydroxyvaleric acid HPLC grade	429
4-Hydroxybenzoic acid ethylester see Ethyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	343	Hygromycin B	429
4-Hydroxybenzoic acid methylester see Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	539	Hygromycin B - Solution	430
4-Hydroxybenzoic acid propylester see Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	670	Hyperforin dicyclohexyl ammonium salt pure	430
(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid see D-Luciferin free acid	496		
(S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid sodium salt see D-Luciferin sodium salt	497		
10-p-Hydroxybenzoylaucubin see Agnusid HPLC grade	73		
2-Hydroxybut-3-enylglucosinate potassium salt see Progointr HPLC grade	663		
17-Hydroxycorticosterone see Hydrocortisone <i>BioChemica</i>	420		
1-Hydroxycyclobut-1-ene-3,4-dione see Moniliformin sodium salt <i>BioChemica</i>	549		
Hydroxydaunorubicin see Doxorubicin hydrochloride <i>BioChemica</i>	308		
8-Hydroxydiacetoxyscirpenol see Neosolanol <i>BioChemica</i>	563		
7-Hydroxy-5,6-dimethoxycumarin see Umckalin HPLC grade	848		

Hypericin HPLC grade	430	rHu IL-32α	444
Hypericin sodium salt HPLC grade	430	rHu IL-33	444
Hyperin see Hyperosid	431	Imidazole	445
Hyperosid	431	L-3-Imidazole-4-yl-alanine see L-Histidine base	409
Hypophosphorous acid 50 %	431	4-Imidazolyl-L-alanine see L-Histidine hydrochloride monohydrate	409
Hypoxanthine <i>BioChemica</i>	431		
Hypoxanthine sodium salt <i>BioChemica</i>	432	2,2'-Iminodiethanol see Diethanolamine <i>BioChemica</i>	277
Hypoxanthine-9-β-D-ribofuranoside see Inosine <i>BioChemica</i>	452	Immersion oil	446
		Immersion oil from cedarwood	446
		Immunoassay Buffer	446
		Immunomycin see Ascomycin <i>BioChemica</i>	119
IBMX see 3-Isobutyl-1-methylxanthine <i>BioChemica</i>	464	2-(4-Imidazolyl) ethylamine dihydrochloride see Histamine dihydrochloride	408
Idoxuridine see 5-Iodo-2'-deoxyuridine <i>BioChemica</i>	456		
IDU see 5-Iodo-2'-deoxyuridine <i>BioChemica</i>	456	Incubator-Clean™	450
rHu IFN-α-2a bioconfident grade	432	Incuwater-Clean™	451
rHu IFN-γ bioconfident grade	432	1,2,3-Indantrione hydrate see Ninhydrin p. A.	567
rHu IFN-γ	432	Indicator Strips for pH value determination see pH-Fix Indicator Strips	621
rM IFN-γ	433		
rR IFN-γ	433	Indigo carmine (C.I. 73015)	451
rHu IGF-1	433	Indigo carmine - Solution	451
rM IGF-1	433	5,5'-Indigodisulfonic acid disodium salt see Indigo carmine (C.I. 73015)	451
rR IGF-1	434		
rHu IGF-2	434	(1S,2R,8R,8aR)-1,2,8-Indolizidinetriol see Swainsonine	789
IGF-II see rHu IGF-2	434	2-(3-Indolyl)-ethylamine see Tryptamine	843
rHu IL-1a bioconfident grade	434	3-Indolylmethylglucosinolate potassium salt see Glucobrassicin HPLC grade	375
rHu IL-1b	434		
rM IL-1b	434	3-(3-Indolyl)-propionic acid <i>BioChemica</i>	451
rHu IL-2 bioconfident grade	435	3-Indoxyl-β-D-glucopyranoside trihydrate <i>BioChemica</i>	451
rHu IL-2	435	Infusorial earth see Kieselguhr calcined and purified, NF	471
rM IL-2	435	Ingrain Blue 1 see Alcian blue 8 GS (C.I. 74240)	78
rHu IL-3 bioconfident grade	435	Inosine <i>BioChemica</i>	452
rHu IL-3	435	meso-Inositol see myo-Inositol <i>BioChemica</i>	452
rM IL-3	436	myo-Inositol <i>BioChemica</i>	452
rHu IL-4 bioconfident grade	436	D-myo-Inositol-4,5-bisphosphate tetraammonium salt <i>BioChemica</i>	452
rHu IL-4	436		
rM IL-4	436	D-myo-Inositol-4-monophosphate diammonium salt <i>BioChemica</i>	452
rHu IL-5 bioconfident grade	437		
rHu IL-5	437	D-myo-Inositol-1,3,4,5,6-pentakisphosphate decaammonium salt <i>BioChemica</i>	452
rHu IL-6 bioconfident grade	437		
rHu IL-6	437	D-myo-Inositol-3,4,5,6-tetrakisphosphate octaammonium salt <i>BioChemica</i>	452
rM IL-6	438		
rHu IL-7 bioconfident grade	438	D-myo-Inositol-1,4,5-trisphosphate trisodium salt <i>BioChemica</i>	453
rHu IL-7	438	Ins(1,3,4,5,6)P ₅ see D-myo-Inositol-1,3,4,5,6-pentakisphosphate decaammonium salt <i>BioChemica</i>	452
rM IL-7	438		
rHu IL-9 bioconfident grade	439	Ins(1,4,5)P ₃ see D-myo-Inositol-1,4,5-trisphosphate trisodium salt <i>BioChemica</i>	453
rM IL-9	439		
rHu IL-10	439	Ins(3,4,5,6)P ₄ see D-myo-Inositol-3,4,5,6-tetrakisphosphate octaammonium salt <i>BioChemica</i>	452
rM IL-10	439		
rHu IL-11	439	Ins(4,5)P ₂ see D-myo-Inositol-4,5-bisphosphate tetraammonium salt <i>BioChemica</i>	452
rHu IL-12	440		
rHu IL-13	440	Ins(4)P see D-myo-Inositol-4-monophosphate diammonium salt <i>BioChemica</i>	452
rHu IL-15	440		
rM IL-15	440	AC-INSECT	453
rHu IL-16 bioconfident grade	440	recombinant Human Insulin see rHu Insulin	453
rHu IL-16	441	rHu Insulin	453
rM IL-16	441	Insulin crystalline - porcine	453
rHu IL-17A	441	recombinant human Insulin Growth Factor-1 see rHu IGF-1	433
rR IL-17A	441	recombinant Mouse Insulin-like Growth Factor-1 see rM IGF-1	433
rHu IL-17E	442	recombinant Rat Insulin-like Growth Factor-1 see rR IGF-1	434
rR IL-17E	442	recombinantes humanas Insulin-like Growth Factor-2 see rHu IGF-2	434
rHu IL-17F	442		
rHu IL-19	442	INT see Iodonitrotetrazolium chloride <i>BioChemica</i>	457
rHu IL-20 bioconfident grade	443	recombinant Human Interferon-γ see rHu IFN-γ	432
rHu IL-20	443	recombinant Mouse Interferon γ see rM IFN-γ	433
rHu IL-21	443	recombinant Human Interferon alpha 2a see rHu IFN-α-2a bioconfident grade	432
rHu IL-22 bioconfident grade	443		
rHu IL-22	443	recombinant Human Interferon gamma see rHu IFN-γ bioconfident grade	432
rM IL-27 (p28)	444	recombinant Mouse Interferon-inducible Protein see rM IP-10	458
	444	recombinant Human Interleukin-10 see rHu IL-10	439

recombinant Mouse Interleukin-10 see rM IL-10
 recombinant Human Interleukin-11 see rHu IL-11
 recombinant Human Interleukin-12 see rHu IL-12
 recombinant Human Interleukin-13 see rHu IL-13
 recombinant Mouse Interleukin-15 see rM IL-15
 recombinant Human Interleukin-15 see rHu IL-15
 recombinant Human Interleukin-16 see rHu IL-16
 recombinant Mouse Interleukin-16 see rM IL-16
 recombinant Human Interleukin-17A see rHu IL-17A
 recombinant Rat Interleukin-17A see rR IL-17A
 recombinant Human Interleukin-17E see rHu IL-17E
 recombinant Rat Interleukin-17E see rR IL-17E
 recombinant Human Interleukin-17F see rHu IL-17F
 recombinant Human Interleukin-19 see rHu IL-19
 recombinant Human Interleukin-1 α see rHu IL-1 α
 bioconfident grade
 recombinant Human Interleukin-1 β see rHu IL-1 β
 recombinant Mouse Interleukin 1- β see rM IL-1 β
 recombinant Human Interleukin-2 see rHu IL-2
 recombinant Mouse Interleukin-2 see rM IL-2
 recombinant Human Interleukin-20 see rHu IL-20
 recombinant Human Interleukin-21 see rHu IL-21
 recombinant Human Interleukin-22 see rHu IL-22
 recombinant Mouse Interleukin-27 (p28) see rM IL-27 (p28)
 recombinant Human Interleukin-3 see rHu IL-3
 recombinant Mouse Interleukin-3 see rM IL-3
 recombinant Human Interleukin-32 α see rHu IL-32 α
 recombinant Human Interleukin-33 see rHu IL-33
 recombinant Human Interleukin-4 see rHu IL-4
 recombinant Mouse Interleukin-4 see rM IL-4
 recombinant Human Interleukin-5 see rHu IL-5
 recombinant Human Interleukin-6 see rHu IL-6
 recombinant Mouse Interleukin-6 see rM IL-6
 recombinant Human Interleukin-7 see rHu IL-7
 recombinant Mouse Interleukin-7 see rM IL-7
 recombinant Human Interleukin-9 see rHu IL-9
 bioconfident grade
 recombinant Mouse Interleukin-9 see rM IL-9
 Iodine
 Iodine - Standard volumetric solutions
 Iodine-Potassium iodide - Solution see Lugol's - Solution
 Iodoacetamide *BioChemica*
 Iodoacetic acid sodium salt *BioChemica*
 Iodoacetic acid N-hydroxysuccinimide ester *BioChemica*
 Iodobromide see Iodomonobromide for synthesis
 5-Iodo-2'-deoxyuridine *BioChemica*
 Iodeosin see Erythrosin B (C.I. 45430)
 Iodoform pure
 Iodomonobromide for synthesis
 Iodonitrotetrazolium chloride *BioChemica*
 Iodonitrotetrazolium violet see Iodonitrotetrazolium chloride
 BioChemica
 4-[3-(4-Iodophenyl)-2-(2,4-dinitrophenyl)-2H-5-tetrazolio]-1,3-benzene disulfonate see WST-3 *BioChemica*
 4-[3-(4-Iodophenyl)-2-(4-nitrophenyl)-2H-5-tetrazolio]-1,3-benzene disulfonate see WST-1 *BioChemica*
 2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride see Iodonitrotetrazolium chloride *BioChemica*
 Ion-exchange cartridge (Stainless Steel) see Stainless Steel - Cartridge (AppliQUA) with Mixed-Bed Resin MBH 100
 Ionol see Butylated hydroxytoluene (BHT)
 Ionomycin free acid *BioChemica*
 Ionomycin calcium salt *BioChemica*
 recombinant Mouse IP-10 see rM IP-10
 IPL 41 - Medium
 rM IP-10
 IPTG
 Iron(II) chloride tetrahydrate

439 Iron(II) chloride - Solution according to Stoeck-Staehler
 439 Iron(III) chloride hexahydrate
 440 Iron(III) chloride - Solutions
 440 Iron(III) chloride - Solution (0.25 g/L) for BOD-determination
 440 Iron(III) citrate hydrate
 440 Iron(III) nitrate nonahydrate
 441 Iron(III) nitrate - Solution (10 g/L Fe³⁺) in Nitric acid 2 M
 441 Iron(II) sulfate heptahydrate
 441 Iron(II) sulfate - Standard volumetric solution (1 M)
 441 Iscove's mod. Dulbecco's - Medium (IMDM)
 442 Isoocteoid HPLC grade
 442 Isoamyl alcohol
 442 Isobutanol
 442 Isobutyl alcohol see Isobutanol
 434 N-Isobutyl-N-(4-methoxyphenylsulfonyl)glycyl hydroxamic acid
 see NNGH
 434 3-Isobutyl-1-methylxanthine *BioChemica*
 434 L-Isoleucine
 435 Isooctane
 435 Isoorientin see Homoorientin HPLC grade
 443 Isopentane see 2-Methylbutane
 443 Isopentyl alcohol see Isoamyl alcohol
 444 Isopropanol see 2-Propanol (Isopropanol)
 444 Isopropanolamine see 1-Amino-2-propanol pure
 435 Isopropanol D₈ see 2-Propanol D₈ (Isopropanol D₈)
 436 Isopropylacetone see 4-Methyl-2-pentanone
 444 Isopropyl alcohol see 2-Propanol (Isopropanol)
 444 Isopropyl β -D-thiogalactopyranoside see IPTG
 436 Isopropyl ether see Diisopropyl ether
 436 (1R,2S,5R)-(-)-2-Isopropyl-5-methyl-cyclohexanol see (-)-Menthol crystalline pure Ph. Eur., USP
 437 Isopropyl myristate pure Ph. Eur.
 438 Isopropylsulfonic acid sodium salt see 2-Propanesulfonic acid sodium salt IPC grade
 438 Isopropyl tetradecanoate see Isopropyl myristate pure Ph. Eur.
 439 Isoquercitrin
 439 1-(5-Isoquinolinylsulfonyl)-2-methylpiperazine dihydrochloride
 see H-7 *BioChemica*
 454 Isorhamnetin HPLC grade
 454 Isovaleryl-L-val-L-val-statinyl-L-ala-statine see Pepstatin A
 497 Isoverbascoisid see Isoacteoid HPLC grade
 455 Isovitecin HPLC grade
 456 Isoxanthohumol HPLC grade
 456 Itaconic acid pure

J

Jenner's stain 467
 Joklik - MEM, modified for spinner culture 467

K

K252a *BioChemica* 467
 K252b *BioChemica* 468
 K₂CO₃ see Potassium carbonate 637
 K₂Cr₂O₇ see Potassium dichromate 641
 K₂CrO₄ see Potassium chromate p. A. 640
 K₂HPO₄ see di-Potassium hydrogen phosphate anhydrous 646
 K₂SO₄ see Potassium sulfate 660
 Kaempferol 468
 Kaempferol-3-glucoside 469
 Kalialaun see Potassium aluminium sulfate dodecahydrate 636
 KAl(SO₄)₂ · 12H₂O see Potassium aluminium sulfate dodecahydrate 636
 Kanamycin see Kanamycin sulfate 469
 Kanamycin sulfate 469
 Kanamycin Esculin Azide Agar 469
 Kaolin see Kaolin 470

Kaolin	470
KBr see Potassium bromide	636
KCl see Potassium chloride	638
Keracyanin see Cyanidin-3-rutinoside HPLC grade	249
11-Keto- β -boswellic acid HPLC grade	470
α -Ketobutyric acid sodium salt <i>BioChemica</i>	470
α -Ketoglutaric acid <i>BioChemica</i>	470
α -Ketoglutaric acid disodium salt dihydrate <i>BioChemica</i>	471
α -Ketoglutaric acid monopotassium salt <i>BioChemica</i>	471
α -Ketoglutaric acid sodium salt <i>BioChemica</i>	471
α -Ketopropionic acid see Pyruvic acid	679
rHu KGF bioconfident grade	471
KHCO ₃ see Potassium hydrogen carbonate	645
KH ₂ PO ₄ see Potassium dihydrogen phosphate	642
KI see Potassium iodide	654
Kieselguhr calcined and purified, NF	471
Kinetin <i>BioChemica</i>	472
King A Agar Base	472
KIO ₃ see Potassium iodate	654
Kjeldahl tablets	472
Kligler-Iron-Agar	473
KOH see Potassium hydroxide - Pellets	648
KOH - Solution see Potassium hydroxide - Solutions 25 % - 50 %	648
KOH - Standard volumetric solution see Potassium hydroxide - Standard volumetric solutions (aqueous solutions)	650
Kristenson's - Solution	473
KT5720 <i>BioChemica</i>	474
KT5823 <i>BioChemica</i>	474
Kuromarin chloride HPLC grade	474

L

L-14 see rHu Galectin-1	368
Laburnin see Cytisine HPLC grade	256
Lacmus pure (C.I. 1242)	474
Lacmus - Solution	474
Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475
Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)	475
Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475
Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)	475
Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)	476
L-Lactate dehydrogenase, bacterial Technical grade	476
(S)-Lactate : NAD ⁺ oxidoreductase see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475
L(+)-Lactic acid (approx. 90 %) pure Ph. Eur., USP, Food grade	476
Lactic Acid Solution (Supplement) see Supplements for Microbiological Media	786
Lactic acid calcium salt see Calcium lactate pentahydrate	181
DL-Lactic acid lithium salt crystalline <i>BioChemica</i>	476
L(+)-Lactic acid lithium salt crystalline <i>BioChemica</i>	476
L-Lactic acid methyl ester see Methyl lactate	539
L(+)-Lactic acid sodium salt crystalline <i>BioChemica</i>	477
DL-Lactic acid sodium salt - Solution 50 % <i>BioChemica</i>	477
L-Lactic acid sodium salt - Solution 50 % low endotoxin pure Ph. Eur., USP	477
L(+)-Lactic acid silver salt <i>BioChemica</i>	477
L-Lactic Dehydrogenase see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475
Lactic Dehydrogenase see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475
Lactitol monohydrate <i>BioChemica</i>	477
Lactobiose see D(+)-Lactose monohydrate	478
apo-Lactoferrin, human	478
Lactoflavin see Riboflavin	687
Lactoglucose see D(+)-Galactose	367
D(+)-Lactose monohydrate	478
Lactose Broth	478

Lactose peptone broth, DEV	478
Lactulose <i>BioChemica</i>	479
LAD-1 see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475
LAD-2 see Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)	475
LAD-3 see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475
LAD-4 see Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)	475
LAD-5 see Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)	476
Laemmli buffer see SDS-Tris-Glycine buffer <i>BioChemica</i>	707
Lanatosid C HPLC grade	479
La(NO ₃) ₃ · 6H ₂ O see Lanthanum nitrate hexahydrate p. A.	479
Lanthanum nitrate hexahydrate p. A.	479
Lanthanum nitrate - Standard volumetric solution (0.1 M)	479
LARC see rHu MIP-3 α	546
Laureth-23 see Brij® 35 <i>BioChemica</i>	157
Lauric acid pure	479
Lauroylsarcosinate see N-Lauroylsarcosine sodium salt	480
N-Lauroylsarcosine sodium salt	480
N-Lauroylsarcosinate - Solutions	480
Lauryl- β -D-maltoside see <i>n</i> -Dodecyl- β -D-maltoside	306
Lauryl- α -maltoside see <i>n</i> -Dodecyl- α -maltoside <i>BioChemica</i>	306
Lauryl Sulfate Broth	481
Lauryltrimethylammonium bromide see Dodecyltrimethylammonium bromide <i>BioChemica</i>	306
LB-Agar - Powder according to Lennox	481
LB-Agar - Powder according to Miller	482
LB-Medium, high salt see LB-Medium - Powder according to Miller	482
LB-Medium - Powder according to Lennox	482
LB-Medium - Powder according to Miller	482
LD-1 see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475
LD-2 see Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)	475
LD-3 see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475
LD-4 see Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)	475
LD-5 see Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)	476
LDH-1 see Lactate Dehydrogenase Isoenzyme-1, human (LDH-1)	475
LDH-2 see Lactate Dehydrogenase Isoenzyme-2, human (LDH-2)	475
LDH-3 see Lactate Dehydrogenase Isoenzyme-3, human (LDH-3)	475
LDH-4 see Lactate Dehydrogenase Isoenzyme-4, human (LDH-4)	475
LDH-5 see Lactate Dehydrogenase Isoenzyme-5, human (LDH-5)	476
LDL see Lipoprotein, low density (LDL), human	491
LDS see Lithium dodecylsulfate <i>BioChemica</i>	493
Lead(II) acetate trihydrate pure	483
Lead(II) nitrate - Standard volumetric solutions	483
Lecithins	483
Lectin from <i>Canavalia ensiformis</i> (Con A)	484
Leibovitz's L15 - Medium	484
Leifson Agar (modified) see Deoxycholate Citrate Agar, Leifson, Modified	264
Leiocarposid HPLC grade	484
Leishman's Eosin-Methylene blue see Leishman's Stain	485
Leishman's Stain	485
Leishman's Stain - Solution	485
recombinant Human Leptin see rHu Leptin	485
recombinant Mouse Leptin see rM Leptin	485
recombinant Rat Leptin see rR Leptin	486
rHu Leptin	485
rM Leptin	485
rR Leptin	486
Leptomycin B <i>BioChemica</i>	486

L-Leucine	486	Loading buffer V (for denaturing urea gels)	494
L-Leucine dehydrogenase, bacterial Technical grade	487	Loading buffer VI (for sequencing gels)	495
L-Leucine 2-naphthylamide hydrochloride <i>BioChemica</i>	487	Loading buffer VII (for denaturing PAGE)	495
L-Leucine β-naphthylamide hydrochloride see L-Leucine 2-naphthylamide hydrochloride <i>BioChemica</i>	487	Loading buffer VIII (for Glyoxal / DMSO - RNA gels)	495
Leucovorin see Folinic acid calcium salt pentahydrate	355	Loading buffer IX (for SDS gels)	495
L-Leucyl-L-alanine Cell culture grade	487	Loading buffer X (PCR)	495
recombinant Mouse Leukemia Inhibitory Factor see rM LIF bioconfident grade	489	Loeffler's Methylene blue - Solution Microscopy grade	496
Leukocytes, human - sonicated	487	Lomant's reagent see DTSP <i>BioChemica</i>	309
Ac-Leu-Leu-argininal see Leupeptin hemisulfate	488	β-Longilobin see Retrorsin HPLC grade	685
Leupeptin hemisulfate	488	Low Density Lipoprotein see Lipoprotein, low density (LDL), human	491
Levamisole hydrochloride	488	LPS buffer Molecular biology grade	496
Levulose see D(-)-Fructose	364	Luciferase assay buffer	496
LiCl see Lithium chloride	492	D-Luciferin free acid	496
Lidocaine hydrochloride pure Ph. Eur., USP	488	D-Luciferin sodium salt	497
LiDS see Lithium dodecylsulfate <i>BioChemica</i>	493	Lugol's - Solution	497
rHu LIF bioconfident grade	488	Luminol	497
rM LIF bioconfident grade	489	Lup-20(29)-en-3,28-diol see Betulin HPLC grade	137
Ligase, T4 DNA see T4 DNA Ligase	790	Luria-Bertani - Medium according to Lennox see LB-Medium - Powder according to Lennox	482
Ligase, T4 RNA see T4 RNA Ligase	790	Lutein pure	498
Linarigenin see Acacetin HPLC grade	38	Luteolin HPLC grade	498
Linarin HPLC grade	489	Luteolin-7-glucoside HPLC grade	498
Lincocin hydrochloride see Lincomycin hydrochloride <i>BioChemica</i>	489	Lycopin HPLC grade	498
Lincomycin hydrochloride <i>BioChemica</i>	489	Lympho-Pure	498
linear polyacrylamide see DNA-PrecipitAid	304	L-Lysine monohydrate	499
Linoleate : oxygen oxidoreductase see Lipoxidase from soybean	491	L-Lysine monohydrochloride	499
Linoleic acid Cell culture grade	489	L-Lysine acetate salt pure USP	500
Linsmaier, Bednar & Skoog Plant salts	490	Lysis buffer for luciferase assays see Extraction buffer for luciferase and β-galactosidase assay	344
LiOH · H ₂ O see Lithium hydroxide monohydrate p. A.	493	Lysis buffer with CTAB see CTAB - Lysis buffer <i>BioChemica</i>	248
Lipase from porcine pancreas	490	Lysis solution for red blood cells see DNA Isolation Kits	294
Lipase, human	490	Lysozyme	500
DL-α-Lipoic acid <i>BioChemica</i>	490	Lysozyme, human	500
α-Lipoprotein see Lipoprotein, high density (HDL), human	490	D-Lyxopyranose see D(-)-Lyxose <i>BioChemica</i>	501
βLipoprotein see Lipoprotein, low density (LDL), human	491	L-Lyxopyranose see L(+)-Lyxose <i>BioChemica</i>	501
Lipoprotein, high density (HDL), human	490	D(-)-Lyxose <i>BioChemica</i>	501
Lipoprotein, low density (LDL), human	491	L(+)-Lyxose <i>BioChemica</i>	501
Lipoxidase from soybean	491	M	
Lipoxygenase see Lipoxidase from soybean	491	MacConkey-Agar	501
LIS see Lithium 3,5-diiodosalicylate	493	MacConkey-Broth (Purple)	501
Listeria Selective Agar Base, Oxford	491	Macrofusine see Fumonisin B1 <i>BioChemica</i>	366
Listeria Selective Agar Base, Palcam	491	α ₂ -Macroglobulin	501
Listeria Selective Supplement, Oxford see Supplements for Microbiological Media	786	recombinant Human Macrophage Colony Stimulating Factor see rHu M-CSF bioconfident grade	521
Listeria Selective Supplement, Palcam see Supplements for Microbiological Media	786	recombinant Human Macrophage Colony-Stimulating Factor see rHu M-CSF	522
Lithium acetate dihydrate p. A.	492	recombinant Mouse Macrophage Colony-Stimulating Factor see rM MC-SF	522
Lithium acetoacetate see Acetoacetic acid lithium salt <i>BioChemica</i>	43	recombinant Human Macrophage Inflammatory Protein-1α see rHu MIP-1α	545
Lithium benzoate pure	492	recombinant Human Macrophage Inflammatory Protein-1β see rHu MIP-1β	545
Lithium carbonate pure	492	recombinant Mouse Macrophage Inflammatory Protein-1α see rM MIP-1α	545
Lithium chloride	492	recombinant Mouse Macrophage Inflammatory Protein-1β see rM MIP-1β	545
Lithium 3,5-diiodosalicylate	493	recombinant Human Macrophage Inflammatory Protein-3α, see rHu MIP-3α	546
Lithium dodecylsulfate <i>BioChemica</i>	493	recombinant Human Macrophage Inflammatory Protein-3β see rHu MIP-3β	546
Lithium hydroxide monohydrate p. A.	493	recombinant Mouse Macrophage Inflammatory Protein-3α see rM MIP-3α	546
Lithium-DL-lactate see DL-Lactic acid lithium salt crystalline <i>BioChemica</i>	476	recombinant Human Macrophagen Inflammatory Protein-1α see rHu MIP-1α bioconfident grade	545
Lithium-L-lactate see L(+)-Lactic acid lithium salt crystalline <i>BioChemica</i>	476	Magenta see Fuchsin basic (C.I. 42510) Microscopy grade	364
Lithium laurylsulfate see Lithium dodecylsulfate <i>BioChemica</i>	493		
Litmus see Lacmus pure (C.I. 1242)	474		
Loading buffer DNA I	493		
Loading buffer DNA II	494		
Loading buffer DNA II b	494		
Loading buffer DNA III (alkaline)	494		
Loading buffer DNA IV (for Agarose gels)	494		

Magenta-Glucuro CHA salt <i>BioChemica</i>	502	Manganese(II) chloride - Solution (25 mM) Molecular biology grade	514
Magenta Marker see Electrophoresis Size Marker/Standard Protein	325	Manganese(II) sulfate monohydrate	514
Magnesium glowd see Magnesium oxide	506	Manganese(II) sulfate - Solution acc. to Reinhardt-Zimmermann	515
Magnesium Turnings acc. to Grignard for synthesis	502	D-Mannite see D(-)-Mannitol	515
Magnesium acetate tetrahydrate	502	D(-)-Mannitol	515
Magnesium acetate - Solutions (1 M)	503	L-Mannopyranose see L(-)-Mannose <i>BioChemica</i>	516
Magnesium-L-aspartate see L-Aspartic acid magnesium salt pure Ph. Eur.	122	α -D-Mannopyranosyl-1-phosphate see α -D-Mannose-1-phosphate dipotassium salt dihydrate	516
Magnesium carbonate basic see Magnesium hydroxide carbonate light	505	D(+)-Mannose <i>BioChemica</i>	516
Magnesium chloride hexahydrate	503	L(-)-Mannose <i>BioChemica</i>	516
Magnesium chloride - Solutions	504	α -D-Mannose-1-phosphate dipotassium salt dihydrate	516
Magnesium citrate pure	505	Mantuamycin see Leptomycin B <i>BioChemica</i>	486
Glycero-3-phosphate magnesium saltMagnesium glycerophosphate see DL- α -Glycerol phosphate magnesium salt hydrate pure	386	Marble granular for producing CO ₂	516
Magnesium hydrogen citrate see Magnesium citrate pure	505	Matrix effect reduction see Immunoassay Buffer maxXbond™	446
Magnesium hydroxide carbonate light	505	maxXmore™	517
Magnesium nitrate hexahydrate	505	May-Gruenwald - Eosin - Methylene blue	518
Magnesium oxide	506	May-Gruenwald - Solution Microscopy grade	519
Magnesium silicate activated see Florisil® for chromatography 60-100 mesh	352	Mayer's Hemalaun - Solution Microscopy grade	519
Magnesium stearate pure Ph. Eur.	506	Mayer's Hematoxylin - Solution	519
Magnesium sulfate dried	506	M-Bis see Bisacrylamide	143
Magnesium sulfate anhydrous pure	506	MBS	520
Magnesium sulfate heptahydrate	507	McCoy's 5A - Medium (modified)	520
Magnesium sulfate - Solutions	507	MCP see m-Cresol purple	246
Malachite green G see Brilliant green (C.I. 42040)	158	rHu MCP-1	520
Malachite green oxalate (C.I. 42000)	508	rHu MCP-2	521
Malachite green oxalate - Solution	508	rHu MCP-3	521
Maleic acid pure Ph. Eur.	509	rHu MCP-4	521
Maleic acid disodium salt pure	509	rHu M-CSF bioconfident grade	521
m-Maleimidobenzoyl-N-hydroxysuccinimide ester see MBS	520	rHu M-CSF	522
m-Maleimidobenzoyl-N-hydroxysulfosuccinimide ester sodium salt see Sulfo-MBS	779	rM M-CSF	522
N-(γ -Maleimidobutyryloxy) succinimide ester see GMBS	389	MDL 28170 see Calpain Inhibitor III	183
N-(β -Maleimidopropoxy) succinimide ester see BMPS	152	AC-Media hi	522
DL-Malic acid	509	AC-Media mid	522
DL-Malic acid monosodium salt pure	509	AC-Media lo	522
L(-)-Malic acid	510	Medium 199 with Earle's Salts	523
L-Malic acid disodium salt monohydrate <i>BioChemica</i>	510	Medium 199 with Hanks' Salts	523
L(-)-Malic acid monosodium salt <i>BioChemica</i>	510	MEGA-8	524
Malonic acid for synthesis	510	MEGA-9	524
Malt extract Microbiology grade	510	MEGA-10	524
Malt Extract Agar Microbiology grade	511	MEK see Methyl ethyl ketone	538
Maltobiose see D(+)-Maltose monohydrate	511	Meletin see Quercetin HPLC grade	680
Maltodextrin white pure	511	D(+)-Melezitose monohydrate <i>BioChemica</i>	524
Maltopentaose <i>BioChemica</i>	511	D(+)-Melibiose monohydrate <i>BioChemica</i>	524
D(+)-Maltose monohydrate	511	Melitose see D(+)-Raffinose pentahydrate <i>BioChemica</i>	681
Maltotetraose <i>BioChemica</i>	512	Melitriose see D(+)-Raffinose pentahydrate <i>BioChemica</i>	681
Maltotriose <i>BioChemica</i>	512	α -MEM	525
Maltulose monohydrate <i>BioChemica</i>	512	MEM with Earle's salts	526
Malvidin chloride HPLC grade	512	MEM with Hanks' salts	527
Malvidin-3,5-diglucoside see Malvin chloride	512	S-MEM, modified for spinner culture	528
Malvidin-3,5-diglucoside chloride see Malvin chloride	512	Menadione	528
Malvidin-3-glucoside see Oenin chloride	582	(-)-Menthol crystalline pure Ph. Eur., USP	528
Malvin see Malvin chloride	512	Mercaptoacetic acid see Thioglycolic acid	813
Malvin chloride	512	2-Mercaptoethanol see β -Mercaptoethanol	529
Manassantin A HPLC grade	513	β -Mercaptoethanol	529
Manassantin B HPLC grade	513	2-Mercaptoethylamine hydrochloride see Cysteamine hydrochloride <i>BioChemica</i>	254
D-Mandelate dehydrogenase, bacterial Technical grade	513	3-Mercaptopicolinic acid hydrochloride	529
Manganese(II) acetate tetrahydrate pure	513	6-Mercaptopurine monohydrate <i>BioChemica</i>	529
Manganese(II) acetate - Solution (25 mM) Molecular biology grade	513	Mercury(II) sulfate	529
Manganese(II) chloride tetrahydrate	514	Mercury(II) sulfate - Solutions for COD - determination	530
Manganese(II) chloride - Solution for determination of oxygen in water	514	Merthiolate see Thimerosal <i>BioChemica</i>	812
		MES anhydrous	531
		MES hemisodium salt Buffer grade	531
		MES monohydrate	531
		MES potassium salt Molecular biology grade	532

AppliChem	Alphabetical product list		General ● Catalog
MES sodium salt	532	Methyl orange - Solution (in water)	540
Metal-Aluminosilicate see Molecular sieves	548	Methylparaben see Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	539
Metamycin see Paromomycin sulfate <i>BioChemica</i>	592		
Metanil yellow	532	2-Methyl pentane see <i>iso</i> -Hexane (<i>n</i> -Hexane < 5 %)	406
Methacrylic acid 3-trimethoxysilylpropyl ester see 3-Methacryloxypropyl trimethoxysilane	532	(±)-2-Methyl-2,4-pentanediol <i>BioChemica</i>	541
3-Methacryloxypropyl trimethoxysilane	532	4-Methyl-2-pentanone	541
Methanesulfonic acid 70 % pure	533	N-Methylphenazinium methylsulfate see Phenazine methosulfate	611
Methanesulfonic acid sodium salt pure	533	2-Methyl-1-propanol see Isobutanol	463
Methanol	533	N-Methylpyrrolidine-2-one see 1-Methyl-2-pyrrolidone	541
Methanol D ₄	535	1-Methyl-2-pyrrolidone	541
L-Methionine	535	4'-O-Methylquercetin see Isorhamnetin HPLC grade	466
Methotrexate <i>BioChemica</i>	536	Methyl red (C.I. 13020)	542
(2R,3S,4S)-2-(4-Methoxybenzyl)-3,4-pyrolidinediol-3-acetate see Anisomycin <i>BioChemica</i>	110	Methyl red - Solution	542
3-Methoxy-5-methyl-4-oxohexa-2,5-diene acid see Penicillic acid <i>BioChemica</i>	601	Methyl red sodium salt	542
1-Methoxy-5-methylphenazine methosulfate <i>BioChemica</i>	536	Methyl red sodium salt - Solution	542
1-Methoxy-5-methylphenazinium methyl sulfate see 1-Methoxy-5-methylphenazine methosulfate <i>BioChemica</i>	536	Methyl salicylate	542
2-Methoxy-6-pentyl-1,4-benzoquinone synthetic, allergen from Primula see Primin HPLC grade	662	3-(Methylsulfonyl)propylglucosinolate potassium salt see Glucoiberin HPLC grade	376
1-Methoxy PMS see 1-Methoxy-5-methylphenazine methosulfate <i>BioChemica</i>	536	Methylsulfoxide see Dimethyl sulfoxide	286
1-Methoxy-2-propanol pure	536	2-Methyltetrahydrofuran pure	543
Methyl alcohol see Methanol	533	(S)-2-Methyl-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid see Ectoine	312
N-[2-(Methylamino)-ethyl]-5-isoquinoline sulfonamide dihydrochloride see H-8 <i>BioChemica</i>	395	4-Methylthiobutylglucosinolate potassium salt see Glucoerucin HPLC grade	376
Methylbenzene see Toluene	821	Methylthioninium chloride see Methylene blue (C.I. 52015)	538
4-(6-Methylbenzothiazole-2-yl)anilin see APMBT ultrapure	113	6-Methyl-1,3,8-trihydroxyanthraquinone see Emodin HPLC grade	326
Methyl blue see Acid blue 93 (C.I. 42780)	50	N-Methyl-N-(trimethylsilyl)-acetamide	543
2-Methylbutane	537	N-Methyl-N-(trimethylsilyl)-2,2,2-trifluoroacetamide	543
3-Methyl-1-butanol see Isoamyl alcohol	463	4-Methylumbelliferyl-2-acetamido-2-deoxy β-D-galactopyranoside see MU-N-acetyl-β-D-galactosaminide <i>BioChemica</i>	551
Methyl tert.-butyl ether see <i>tert</i> .-Butyl methyl ether	174	4-Methylumbelliferyl acetate see MUAcetate <i>BioChemica</i>	551
Methyl cyanide see Acetonitrile	45	4-Methylumbelliferyl-N-acetyl β-D-galactosaminide see MU-N-acetyl-β-D-galactosaminide <i>BioChemica</i>	552
Methylcyclohexane for synthesis	537	4-Methylumbelliferyl-β-D-galactopyranoside see MUGalactoside <i>BioChemica</i>	552
N-Methyldiethanolamine for synthesis	537	4-Methylumbelliferyl-β-D-glucopyranoside see MUGlucoside <i>BioChemica</i>	552
4-Methyl-1,3-dioxolan-2-one see Propylene carbonate pure	670	4-Methylumbelliferyl-β-D-glucuronide trihydrate see MUG trihydrate <i>BioChemica</i>	553
Methyleneazure see Azure B (C.I. 52010)	124	4-Methylumbelliferyl-phosphate disodium salt trihydrate see MUPhosphate disodium salt trihydrate <i>BioChemica</i>	553
N,N-Methylenebisacrylamide see Bisacrylamide	143	Methyl violet 10 B see Crystal violet (C.I. 42555)	247
Methylene blue (C.I. 52015)	538	Methyl violet 2B see Methyl violet (C.I. 42535)	543
Methylene blue DNA staining reagent see DNA-Dye Methylene blue	302	Methyl violet (C.I. 42535)	543
Methylene blue - Solution	538	Methyl violet - Solution	544
Methylene chloride see Dichloromethane	275	Methyl yellow see Dimethyl yellow (C.I. 11020)	288
3,4-Methylenedioxyphenol see Sesamol	710	MgCl ₂ · 6H ₂ O see Magnesium chloride hexahydrate	503
Methylene succinic acid see Itaconic acid pure	467	4MgCO ₃ · Mg(OH) ₂ · 5H ₂ O see Magnesium hydroxide carbonate light	505
Methyl ethyl ketone	538	Mg(NO ₃) ₂ · 6H ₂ O see Magnesium nitrate hexahydrate	505
Methyl green (C.I. 42590)	539	MgSO ₄ · 7H ₂ O see Magnesium sulfate heptahydrate	507
Methyl green - Solution	539	MgSO ₄ · xH ₂ O see Magnesium sulfate dried	506
Methyl green zinc chloride double salt see Methyl green (C.I. 42590)	539	MIBK see 4-Methyl-2-pentanone	541
1-Methylhexane see <i>n</i> -Heptane	403	Micrococcal nuclease see Nuclease, Micrococcus	579
Methyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	539	α ₁ -Microglobulin, human	544
2-Methyl-3-hydroxy-4-formyl-5-hydroxy-methylpyridine hydrochloride see Pyridoxal hydrochloride <i>BioChemica</i>	678	β ₂ -Microglobulin, human	544
(S)-2-Methyl-5-hydroxy-1,4,5,6-tetrahydropyrimidine-4-carboxylic acid see Hydroxyectoine	425	Midostaurin see PKC412 <i>BioChemica</i>	629
N-Methyl-2,2'-iminodiethanol see N-Methyldiethanolamine	537	rHu MIF	544
Methyl isobutyl ketone see 4-Methyl-2-pentanone	541	recombinant Human Migration Inhibitory Factor see rHu MIF	544
Methyl lactate	539	Milk powder see Nonfat dried milk powder	577
Methyl linoleate Cell culture grade	540	Milk sugar see D(+)-Lactose monohydrate	478
5-Methyl-2-(1-methylethyl)-phenol see Thymol pure Ph. Eur.	815	Mineral oil see Paraffin oil	591
2-Methyl-1,4-naphthoquinone see Menadione	528	Minocyclin see Myco-2	554
N-(Methylnitrosocarbamoyl)-α-D-glucosamine see Streptozotocin	774	rHu MIP-1α bioconfident grade	545
N-Methyl-N-nitrosourea see N-Nitroso-N-methylurea	575	rHu MIP-1α	545
Methyl orange (C.I. 13025)	540	rM MIP-1α	545
Methyl orange - Solution (in diluted Ethanol)	540		

rHu MIP-1β	545	MSTN see rHu Myostatin	555
rM MIP-1β	545	MTBE see <i>tert</i> .-Butyl methyl ether	174
rHu MIP-3α	546	MTBSTFA see N-(<i>tert</i> .-Butyldimethylsilyl)-N-methyltrifluoroacetamide	173
rM MIP-3α	546	MTT see Thiazolyl blue tetrazolium bromide <i>BioChemica</i>	811
rHu MIP-3β	546	MTX see Methotrexate <i>BioChemica</i>	536
rHu MIP-4	546	MUAcetate <i>BioChemica</i>	551
Mithramycin A	547	Mucinase see Hyaluronidase	410
Mitomycin C	547	MU-N-acetyl-β-D-galactosaminide <i>BioChemica</i>	551
Mixed-bed resin MBH 100 (AppliQUA™)	547	Mueller-Hinton Agar	551
Mixture of Anomers see <i>n</i> -Octyl-D-glucopyranoside	582	Mueller-Hinton II Agar	552
Mixture of Gramicidin A, B, C and D see Gramicidin	390	Mueller-Hinton Broth	552
Mixture of (S)-2-Hydroxypropane acid, its condensation products and water see Lactic acid (approx. 90 %) pure Ph. Eur., USP, Food grade	476	MUG trihydrate <i>BioChemica</i>	552
Mixture of solvents (Cyclohexane : Ethanol 1 : 2, v/v) p. A.	547	MUGalactoside <i>BioChemica</i>	552
Mixture of solvents (Phenol : Methanol 75 % : 25 %, w/w) p. A.	548	MUGlucoside <i>BioChemica</i>	552
MnCl ₂ · 4H ₂ O see Manganese(II) chloride tetrahydrate	514	MUGlucose disodium salt trihydrate <i>BioChemica</i>	553
MnSO ₄ · H ₂ O see Manganese(II) sulfate monohydrate	514	AC-MultiCell	553
modified Grace's Insect medium see TNM-FH - Insect medium (modified Grace's Insect medium)	820	Mupiroc pure USP	553
Molecular sieves	548	Muramidase see Lysozyme	500
Molybdenum(IV) sulfide pure	548	Murexide (C.I. 56085)	553
Moniliformin sodium salt <i>BioChemica</i>	549	Myco-1 & 2 Set	553
recombinant Human Monocyte Chemotactic Protein see rHu MCP-1	520	Myco-1	554
recombinant Human Monocyte Chemotactic Protein 2 see rHu MCP-2	521	Myco-2	554
recombinant Mouse Monocyte Chemotactic Protein-3 see rM MCP-3	521	Myco-3	554
recombinant Human Monocyte Chemotactic Protein 3 see rHu MCP-3	521	Myco-4	554
recombinant Human Monocyte Chemotactic Protein 4 see rHu MCP-4	521	Mycoin C3 see Patulin <i>BioChemica</i>	593
Monoethanolamine see Ethanolamine <i>BioChemica</i>	337	Mycophenolic acid <i>BioChemica</i>	555
Monomycin see Paromomycin sulfate <i>BioChemica</i>	592	Mycoplasma PCR Test Kit see PCR Mycoplasma Test Kit	598
DL-α-Monoolein see rac.-1-Oleoyl-glycerol <i>BioChemica</i>	584	Mycoplasma PCR Test Kit II see PCR Mycoplasma Test Kit II	598
Monolein see rac.-1-Oleoyl-glycerol <i>BioChemica</i>	584	Mycoporphyrin see Hypericin HPLC grade	430
Monorden see Radicol <i>BioChemica</i>	681	Mycose see D(+)-Trehalose dihydrate <i>BioChemica</i>	828
Monorhein see Rhein	686	Mycostatin see Nystatin dihydrate <i>BioChemica</i>	580
Monosodium 2-naphthyl phosphate see 2-Naphthyl phosphate monosodium salt <i>BioChemica</i>	561	Myeloperoxidase, human	555
Monothioethylene glycol see β-Mercaptoethanol	529	Myoglobin, human	555
Montmorillonite see Bentonite	130	recombinant Human Myostatin see rHu Myostatin	555
MOPS	549	rHu Myostatin	555
MOPS hemisodium salt Buffer grade	549	rHu Myostatin-P	556
MOPS sodium salt Buffer grade	550	recombinant Human Myostatin-Propeptide see rHu Myostatin-P	556
MOPSO Buffer grade	550	Myricetin-3-O-β-rhamnoside see Myricitrin HPLC grade	556
Mordant Yellow 1 see Alizarin yellow GG (C.I. 14025)	80	Myricitrin HPLC grade	556
2-Morpholinoethanesulfonic acid see MES anhydrous	531	Myricitrosid see Myricitrin HPLC grade	556
2-Morpholinoethanesulfonic acid potassium salt see MES potassium salt Molecular biology grade	532	Myriocin <i>BioChemica</i>	556
2-Morpholinoethanesulfonic acid sodium salt see MES sodium salt	532	Myristic acid isopropyl ester see Isopropyl myristate pure Ph. Eur.	465
3-Morpholino-2-hydroxy-propanesulfonic acid see MOPSO Buffer grade	550	Myrtilin see Delphinidin-3-glucoside chloride HPLC grade	262
3-Morpholinopropanesulfonic acid see MOPS	549		
3-Morpholinopropanesulfonic acid hemisodium salt see MOPS hemisodium salt Buffer grade	549		
3-Morpholinopropanesulfonic acid sodium salt see MOPS sodium salt Buffer grade	550		
water-soluble Mounting medium see Mowiol® 4-88 Histology grade	550		
Mowiol® 4-88 Histology grade	550		
MPD see (±)-2-Methyl-2,4-pentandiol <i>BioChemica</i>	541		
MPO see Myeloperoxidase, human	555		
MRS Agar Base	550		
MRS Broth Base	551		
MSA see N-Methyl-N-(trimethylsilyl)-acetamide	543		
MSTFA see N-Methyl-N-(trimethylsilyl)-2,2,2-trifluoroacetamide	543		

N

NaBr see Sodium bromide	724
NaCl see Sodium chloride	726
Na ₂ CO ₃ see Sodium carbonate anhydrous	724
Na ₂ CO ₃ · 10H ₂ O see Sodium carbonate decahydrate	725
NAD	556
Thio-NAD	557
NADH disodium salt	557
NADP sodium salt	557
NADPH tetrasodium salt	557
NaF see Sodium fluoride	733
NaHCO ₃ see Sodium hydrogen carbonate	734
NaH ₂ PO ₄ · 2H ₂ O see Sodium dihydrogen phosphate dihydrate	730
NaH ₂ PO ₄ · H ₂ O see Sodium dihydrogen phosphate monohydrate	731
Na ₂ HPO ₄ see di-Sodium hydrogen phosphate anhydrous	735
Na ₂ HPO ₄ · 2H ₂ O see di-Sodium hydrogen phosphate dihydrate	735
NaI see Sodium iodide	745
Nalidixic acid <i>BioChemica</i>	558
Nalidixic acid sodium salt <i>BioChemica</i>	558
NANA see Sialic acid <i>BioChemica</i>	711

NaNO ₂ see Sodium nitrite	747	(NH ₄) ₂ Fe(SO ₄) ₂ · 6H ₂ O see Ammonium iron(II) sulfate	97
NaNO ₃ see Sodium nitrate	746	hexahydrate	
NaOCl see Sodium hypochlorite - Solutions	745	(NH ₄) ₂ S ₂ O ₃ see Ammonium thiosulfate pure	104
NaOH see Sodium hydroxide - Solutions (concentrations: ≥ 5 %)	738	(NH ₄) ₆ Mo ₇ O ₂₄ · 4H ₂ O see Ammonium molybdate tetrahydrate	100
Naphthalene for synthesis	558	NH ₄ Al(SO ₄) ₂ · 12H ₂ O see Aluminium ammonium sulfate	82
Naphthamine G see Titan yellow (C.I. 19540)	818	dodecahydrate pure USP	
Naphthene see Cyclohexane	250	NH ₄ SCN see Ammonium thiocyanate	103
Naphthol AS acetate <i>BioChemica</i>	558	NHS-LC-Biotin see Biotinamidohexanoic acid N-hydroxysuccinimide ester	141
Naphthol AS-BI phosphate <i>BioChemica</i>	559	NHS-LC-LC-Biotin see Biotinamidohexanoyl-6-aminohexanoic acid N-hydroxysuccinimide ester	141
Naphthol AS chloroacetate <i>BioChemica</i>	559	NHS-PEO3-Biotin see 9-Biotinylamino-4,7-dioxanonanoic acid N-hydroxysuccinimidyl ester	142
Naphthol AS-D acetate <i>BioChemica</i>	559	NHS-PEO4-Biotin see 12-Biotinylamino-4,7,10-trioxadodecanoic acid N-hydroxysuccinimidyl ester	143
Naphthol AS-D chloroacetate <i>BioChemica</i>	559	NHS-PEO5-Biotin see 15-Biotinylamino-4,7,10,13-tetraoxapentadecanoic acid N-hydroxysuccinimidyl ester	143
Naphthol AS-D phosphate <i>BioChemica</i>	559	Niacin see Nicotinic acid pure Ph. Eur., USP	567
Naphthol AS-E acetate <i>BioChemica</i>	559	Niacinamide see Nicotinamide pure Ph. Eur., USP	566
Naphthol AS-MX acetate <i>BioChemica</i>	560	Nickel(II) chloride hexahydrate	565
Naphthol AS-MX phosphate <i>BioChemica</i>	560	Nickel(II) nitrate hexahydrate	565
Naphthol blue black B see Amido black 10 B (C.I. 20470)	84	Nickel(II) sulfate - Solution 11 % pure	566
β-Naphthol violet	560	Nickel(II) sulfate hexahydrate	566
1-Naphthyl acetate <i>BioChemica</i>	560	Nickel(II) sulfate hexahydrate	566
2-Naphthyl acetate <i>BioChemica</i>	560	NiCl ₂ · 6H ₂ O see Nickel(II) chloride hexahydrate	565
1-Naphthyl butyrate <i>BioChemica</i>	561	Nicotinamide pure Ph. Eur., USP	566
N-(1-Naphthyl)ethylenediamine dihydrochloride p. A.	561	β-Nicotinamide adenine dinucleotide see NAD	556
1-Naphthyl laurate <i>BioChemica</i>	561	β-Nicotinamide adenine dinucleotide phosphate reduced tetrasodium salt see NADPH tetrasodium salt	557
1-Naphthyl phosphate monosodium salt monohydrate <i>BioChemica</i>	561	β-Nicotinamide adenine dinucleotide phosphate sodium salt see NADP sodium salt	557
2-Naphthyl phosphate monosodium salt <i>BioChemica</i>	561	β-Nicotinamide adenine dinucleotide reduced disodium salt see NADH disodium salt	557
N ¹ -(2-Naphthyl)-L-pyrogutamic acid see L-Pyrogutamic acid β-naphthylamide	679	Nicotinic acid pure Ph. Eur., USP	567
Na ₃ PO ₄ · 12H ₂ O see tri-Sodium phosphate dodecahydrate	749	Nicotinic acid amide see Nicotinamide pure Ph. Eur., USP	566
Naringenin HPLC grade	562	Nigericin sodium salt <i>BioChemica</i>	567
Naringenin-7-rhamnoglycoside, Aurantiin see Naringin HPLC grade	562	Nile blue A see Nile blue (C.I. 51180)	567
Naringetol see Naringenin HPLC grade	562	Nile blue (C.I. 51180)	567
Naringin HPLC grade	562	Nile blue hydrogen sulfate see Nile blue (C.I. 51180)	567
Na ₂ S ₂ O ₃ · 5H ₂ O see Sodium thiosulfate pentahydrate	756	Ninhydrin p. A.	567
Na ₂ SO ₃ see Sodium sulfite anhydrous	752	Ni(NO ₃) ₂ · 6H ₂ O see Nickel(II) nitrate hexahydrate	565
Na ₂ SO ₄ see Sodium sulfate anhydrous powdered	751	NIPHEGAL see 2-Nitrophenyl-β-D-galactopyranoside <i>BioChemica</i>	573
Na ₂ SO ₄ · 10H ₂ O see Sodium sulfate decahydrate	752	NiSO ₄ · 6H ₂ O see Nickel(II) sulfate hexahydrate	566
Na ₂ SeO ₃ see Sodium selenite anhydrous pure	751	Nitric acid 69 % p. A.	568
Natronwasserglas see Sodium silicate - Solution pure	751	Nitric acid 65 %	568
Natural Black 1 see Hematoxylin monohydrate (C.I. 75290) Microscopy grade	400	Nitric acid (concentrations: ≥ 20 - < 65 %)	569
NBT <i>BioChemica</i>	562	Nitric acid (concentrations: ≥ 5 - < 20 %)	570
NCTC 135 - Medium	562	Nitric acid 3 % pure	570
NDSB-201 see 3-(1-Pyridino)-1-propanesulfonate	677	Nitric acid - Standard volumetric solutions	570
Nebramycin II see Apramycin sulfate <i>BioChemica</i>	116	Nitritoltriacetic acid	572
NEDD see N-(1-Naphthyl)ethylenediamine dihydrochloride p. A.	561	2,2',2''-Nitrilotriethanol see Triethanolamine	831
NEM see N-Ethylmaleimide <i>BioChemica</i>	343	Nitro blue tetrazolium chloride see NBT <i>BioChemica</i>	562
Neocuproine hydrochloride monohydrate <i>BioChemica</i>	563	Nitro-BT see NBT <i>BioChemica</i>	562
Neolinarin see Pectolinarin HPLC grade	601	Nitrocellulose - Transfer membrane see Transfer Membranes: Nitrocellulose, Nylon, PVDF	825
Neomycin sulfate	563	Nitro-PAPS disodium salt <i>BioChemica</i>	572
Neosolaniol <i>BioChemica</i>	563	p-Nitrophenyl-2-acetamido-2-deoxy-α-D-galactopyranoside see 4-Nitrophenyl-N-acetyl-α-D-galactosaminide <i>BioChemica</i>	573
recombinant Human Nerve growth Factor β see rHu NGF-β	564	4-Nitrophenyl-2-acetamido-2-deoxy-β-D-glucopyranoside see 4-Nitrophenyl-N-acetyl-β-D-glucosaminide <i>BioChemica</i>	573
recombinant Mouse Nerve Growth Factor-β see rM NGF-β	564	4-Nitrophenyl-N-acetyl-α-D-galactosaminide <i>BioChemica</i>	573
Neurococcin see Cochenille Red (C.I. 16255)	220	4-Nitrophenyl-N-acetyl-β-D-glucosaminide <i>BioChemica</i>	573
recombinant Human Neureglin-1 see rHu NRG-1 bioconfident grade	578	4-Nitrophenyl-α-L-fucopyranoside <i>BioChemica</i>	573
recombinant Human Neuregulin-1 see rHu NRG-1	578	2-Nitrophenyl-β-D-galactopyranoside <i>BioChemica</i>	573
Neuron-specific Enolase see Enolase, Neuron-specific human	327	4-Nitrophenyl-β-D-galactopyranoside <i>BioChemica</i>	574
recombinant Human Neurotrophin-3 see rHu NT-3	578	ortho-Nitrophenyl-β-D-galactopyranoside see 2-Nitrophenyl-β-D-galactopyranoside <i>BioChemica</i>	573
Neutralizing - Solution Molecular biology grade	564	para-Nitrophenyl-β-D-galactopyranoside see 4-Nitrophenyl-β-D-galactopyranoside <i>BioChemica</i>	574
Neutral red (C.I. 50040)	564		
Neutral red - Solution	564		
rHu NGF-β	564		
rM NGF-β	564		
NGFB see rHu NGF-β	564		
NH ₃ see Ammonia - Solutions ≥ 25 %	90		

2-Nitrophenyl-β-D-glucopyranoside <i>BioChemica</i>	574	1-Octanol	581
4-Nitrophenyl-β-D-glucopyranoside <i>BioChemica</i>	574	Octanoyl-N-methylglucamide see MEGA-8	524
para-Nitrophenyl-β-D-glucopyranoside see 4-Nitrophenyl-β-D-glucopyranoside <i>BioChemica</i>	574	Octyl alcohol see 1-Octanol	581
4-Nitrophenyl-β-D-glucuronide <i>BioChemica</i>	574	<i>n</i> -Octyl-β-D-glucopyranoside	581
para-Nitrophenyl-β-D-glucuronide see 4-Nitrophenyl-β-D-glucuronide <i>BioChemica</i>	574	<i>n</i> -Octyl-D-glucopyranoside	582
α-(p-Nitrophenyl)-glycerol see 1-(4-Nitrophenyl)-1,2,3-propanetriol	575	Octylglucoside see <i>n</i> -Octyl-β-D-glucopyranoside	581
1-(4-Nitrophenyl)-glycerol see 1-(4-Nitrophenyl)-1,2,3-propanetriol	575	<i>n</i> -Octyl-β-D-maltopyranoside see <i>n</i> -Octyl-β-D-maltoside <i>BioChemica</i>	582
4-Nitrophenyl phosphate disodium salt hexahydrate <i>BioChemica</i>	575	<i>n</i> -Octyl-β-D-maltosid <i>BioChemica</i>	582
para-Nitrophenyl phosphate disodium salt hexahydrate see 4-Nitrophenyl phosphate disodium salt hexahydrate <i>BioChemica</i>	575	Octylphenol-polyethylene glycoether see Triton® X-114 <i>BioChemica</i>	841
1-(4-Nitrophenyl)-1,2,3-propanetriol	575	<i>n</i> -Octyl-β-D-thiogluccopyranoside <i>BioChemica</i>	582
p-Nitrophenyl-β-D-xylopyranoside see 4-Nitrophenyl-β-D-xyloside <i>BioChemica</i>	575	Octylthioglucoside see <i>n</i> -Octyl-β-D-thiogluccopyranoside <i>BioChemica</i>	582
4-Nitrophenyl-β-D-xyloside <i>BioChemica</i>	575	Oenin chloride	582
2-(5-Nitro-2-pyridylazo)-5-(N-propyl-N-sulfopropylamino)-phenol disodium salt see Nitro-PAPS disodium salt <i>BioChemica</i>	572	OG see <i>n</i> -Octyl-β-D-glucopyranoside	581
N-Nitroso-N-ethylurea	575	OGY Agar Base see Oxytetracycline Glucose Yeast Extract Agar Base	589
N-Nitroso-N-methylurea	575	OGYE Selective Supplement see Supplements for Microbiological Media	786
NMP see 1-Methyl-2-pyrrolidone	541	Oil, O-live	583
NNGH	576	Oil bath filling	583
Nocodazole <i>BioChemica</i>	576	Oil Red IV see Sudan IV (C.I. 26105)	777
Nonactin <i>BioChemica</i>	576	Okadaic acid	583
1-Nonanesulfonic acid sodium salt IPC grade	576	Okadaic acid sodium salt	583
N-Nonanoyl-N-methylglucamide see MEGA-9	524	Oleic acid pure Ph. Eur., NF	584
Non-Detergent Sulfobetaine 201 see 3-(1-Pyridino)-1-propanesulfonate	677	Oleoside-11-methylester see Elenol acid glucoside HPLC grade	326
Nonfat dried milk powder	577	rac.-1-Oleoyl-glycerol <i>BioChemica</i>	584
Nonidet® P40 (Substitute) <i>BioChemica</i>	577	Oleuropein	584
Nonidet® P40 (Substitute) - Solution 10 % peroxide-free	577	Oligomycin <i>BioChemica</i>	585
<i>n</i> -Nonyl-β-D-glucopyranoside <i>BioChemica</i>	577	Oligomycin A <i>BioChemica</i>	585
<i>n</i> -Nonyl-β-D-maltoside	577	Oligomycin B <i>BioChemica</i>	585
Nonylphenylpolyethylene glycol see Nonidet® P40 (Substitute) <i>BioChemica</i>	577	Olive oil see Oil, O-live	583
Noraristolochic acid see Aristolochic acid II	119	OMEGA see MEGA-8	524
Novobiocin sodium salt <i>BioChemica</i>	578	recombinant Human Oncostatin M see rHu OSM	587
NP40 see Nonidet® P40 (Substitute) <i>BioChemica</i>	577	ONPG see 2-Nitrophenyl-β-D-galactopyranoside <i>BioChemica</i>	573
rHu NRG-1 bioconfident grade	578	OPD see o-Phenylenediamine, free base <i>BioChemica</i>	620
rHu NRG-1	578	Orange G (C.I. 16230)	585
NSC 26703 see 3-Acetyldeoxynivalenol	49	Orange III see Methyl orange (C.I. 13025)	540
NSC 381866 see Bafilomycin A1 <i>BioChemica</i>	125	Orange-Serum Agar	586
NSE see Enolase, Neuron-specific human	327	Orientin HPLC grade	586
rHu NT-3	578	Orientosid see Vitexin HPLC grade	587
NTA see Nitrilotriacetic acid	572	L-Ornithine hydrochloride	586
Nuclear fast red (C.I. 60760) Microscopy grade	579	Orthophosphoric monoester phosphohydrolase see Phosphatase, acid from sweet potato	622
Nuclease, Micrococcus	579	rHu OSM	587
Nucleic acid decontamination in autoclaves see Autoclave-ExitusPlus™	123	Osmium tetroxide Microscopy grade	587
Nucleic acid decontamination reagent see DNA-ExitusPlus™	302	OTC see Oxytetracycline hydrochloride	589
Nutrient Agar	579	Oxalaldehyde see Glyoxal - Solution 40 % Molecular biology grade	388
Nutrient Agar, DEV	579	Oxalic acid ammonium salt see <i>di</i> -Ammonium oxalate monohydrate	102
Nutrient Broth	579	Oxalic acid dihydrate	587
Nylon - Transfer membrane see Transfer Membranes: Nitrocellulose, Nylon, PVDF	825	Oxalic acid - Solutions	588
Nystatin dihydrate <i>BioChemica</i>	580	Oxalic acid dipotassium salt see <i>di</i> -Potassium oxalate monohydrate	657
		Oxaloacetic acid <i>BioChemica</i>	588
		Oxamic acid sodium salt	589
		Oxamycine see D-Cycloserine	253
		Oxidation - Solution DNA synthesis grade	589
		Oxin see 8-Hydroxyquinoline	428
		2,2'-Oxobispropane see Diisopropyl ether	281
		2-Oxobutyric acid sodium salt see α-Ketobutyric acid sodium salt <i>BioChemica</i>	470
		2-Oxoglutaric acid see α-Ketoglutaric acid <i>BioChemica</i>	470
		2-Oxoglutaric acid disodium salt dihydrate see α-Ketoglutaric acid disodium salt dihydrate <i>BioChemica</i>	471
		2-Oxoglutaric acid potassium salt see α-Ketoglutaric acid monopotassium salt <i>BioChemica</i>	471

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2-Oxoglutaric acid sodium salt see α -Ketoglutaric acid sodium salt <i>BioChemica</i>	471	Penitrem A <i>BioChemica</i>	602
2-Oxopropionic acid see Pyruvic acid	679	Penta(carboxymethyl)diethylenetriamine see Diethylenetriaminepentaacetic acid p. A.	278
2-Oxosuccinic acid see Oxaloacetic acid <i>BioChemica</i>	588	3,3',4',5,7-Pentahydroxyflavan see (+)-Catechin HPLC grade	188
Oxynitrilase see Hydroxynitrile Lyase, plant Technical grade	427	3,5,7,3',4'-Pentahydroxyflavane see (-)-Catechin HPLC grade	188
Oxyntomodulin (porcine) see Glucagon 1-37	375	3,3',4',5,7-Pentahydroxyflavone see Quercetin HPLC grade	680
Oxytetracycline Dextrose Yeast Extract Agar Base Supplement see Supplements for Microbiological Media	786	3,3',4',5,7-Pentahydroxyflavone-3- β -glucoside see Isoquercitrin	466
Oxytetracycline Glucose Yeast Extract Agar Base	589	iso-Pentane see 2-Methylbutane	537
Oxytetracycline hydrochloride	589	<i>n</i> -Pentane	602
		Pentane-1,5-dial see Glutaraldehyde - Solutions	382
		1-Pentanesulfonic acid sodium salt anhydrous IPC grade	603
		1-Pentanesulfonic acid sodium salt monohydrate IPC grade	603
		1-Pentanol see <i>n</i> -Amyl alcohol	109
		1-Pentyl alcohol see <i>n</i> -Amyl alcohol	109
		PEO3-Amine-Biotin see N-[2-[2-(2-Aminoethoxy)ethoxy]ethyl] biotinamide	87
		PEO4-Amine-Biotin see N-[3-[2-[2-(3-Aminopropoxy)ethoxy]ethoxy]propyl]biotinamide hydrochloride	90
		PEP-3CHA see Phosphoenolpyruvate tricyclohexylammonium salt	623
		PEP-K see Phosphoenolpyruvate monopotassium salt	623
		Pepsin	603
		Pepsinogen I, human	603
		Pepsinogen II, human	604
		Pepstatin A	604
		Peptidyl peptide hydrolase see Trypsin from bovine pancreas	842
		Peptone from casein (controlled enzymatic hydrolysis) see Tryptone <i>BioChemica</i>	844
		Peptones	604
		Pepton Water, Buffered	605
		Peracetic acid 15 % pure	605
		Perchloric acid	605
		Perchloric acid - Standard volumetric solutions (aqueous solutions)	606
		Perchloric acid - Standard volumetric solution (0.1 M) in Acetic acid anhydrous	607
		Perchloric acid - Standard volumetric solution (0.01 M) in Acetic acid anhydrous	607
		Perchloroethylene see Tetrachloroethylene pure	804
		Peroxidase from horseradish	607
		Peroxidase, myelo see Myeloperoxidase, human	555
		Peroxidase-Stabilizer see Immunoassay Buffer	446
		Peroxyacetic acid see Peracetic acid 15 % pure	605
		Petrol ether see Petroleum ether 60 - 80	609
		Petroleum ether 30 - 40	608
		Petroleum ether 30 - 50 pure	608
		Petroleum ether 40 - 60	608
		Petroleum ether 60 - 80	609
		Petroleum ether 80 - 110 / 100 - 140	610
		PFp-Biotin see Biotin pentafluorophenyl ester	142
		Phallacidin	610
		Phalloidin	610
		1,10-Phenanthroline monohydrate	611
		<i>o</i> -Phenanthroline monohydrate see 1,10-Phenanthroline monohydrate	611
		<i>o</i> -Phenanthroline hydrochloride monohydrate see 1,10-Phenanthroline chloride monohydrate p. A.	611
		1,10-Phenanthroline chloride monohydrate p. A.	611
		Phenazine methosulfate	611
		Phenol crystalline	612
		Phenol - Stock solution (1.000 g/L in water) for Phenol determination	612
		Phenol liquid non water-saturated, non-stabilized	612
		Phenol liquid water-saturated	613
		Phenol liquid equilibrated / extracted	614
		Phenol : Chloroform : Isoamyl alcohol 25 : 24 : 1	615
		Phenol equilibration buffer	616
PABA see 4-Aminobenzoic acid	86		
Paclitaxel see Taxol <i>BioChemica</i>	797		
Palladiumdichloride see Palladium(II) chloride pure	590		
Palladium(II) chloride pure	590		
Palmityltrimethylammonium bromide see Cetyltrimethylammonium bromide	194		
Pancreatin	590		
D-Panose <i>BioChemica</i>	590		
D-Pantothenic acid calcium salt	590		
Papain	591		
Papanicolaous - Solution 2b	591		
p-APMSF see APMSF hydrochloride <i>BioChemica</i>	114		
Paraffin oil	591		
Paraffin - Pastilles pure Ph. Eur. (mp 52 - 54°C)	592		
Paraffin - Pastilles pure Ph. Eur. (mp 58 - 60°C)	592		
Paraformaldehyde <i>BioChemica</i>	592		
Paromomycin sulfate <i>BioChemica</i>	592		
Parthenolide <i>BioChemica</i>	592		
Patent Blue V Calcium salt (C.I. 45051)	593		
Patulin <i>BioChemica</i>	593		
Paxilline <i>BioChemica</i>	593		
PBS buffer (Dulbecco's) - Powder	593		
PBS tablets	594		
PBS / Tween® - Solution	595		
trans-PCCaM see All-trans-4-(4'-Propyl)bicyclohexyl- α -maltosid <i>BioChemica</i>	670		
PCR Blunt Cloning Kit	595		
PCR-InfectoDetect Mixes DNA-free	596		
Easy PCR Kit	597		
Easy Hot Start PCR Kit	597		
PCR Kit, DNA-free	597		
qPCR Kit, DNA-free	597		
PCR Mastermix, DNA free see PCR Kit, DNA-free	597		
PCR Mycoplasma Test Kit	598		
PCR Mycoplasma Test Kit II	598		
qPCR Mycoplasma Test Kit	598		
PCR Pack Tube Kit	599		
PCR buffer	599		
RT-PCR buffer, one-step reaction (5X)	599		
PCR Water see Water	857		
rHu PDGF-AA	599		
rM PDGF-AA	600		
rHu PDGF-AB	600		
rHu PDGF-BB bioconfident grade	600		
rHu PDGF-BB	600		
Pectolarigenin HPLC grade	600		
Pectolarin HPLC grade	601		
Pectolarinosid see Pectolarin HPLC grade	601		
PEG see Polyethylene glycol	630		
Pelarginadon see Naringenin HPLC grade	562		
Penicidin see Patulin <i>BioChemica</i>	593		
Penicillic acid <i>BioChemica</i>	601		
Penicillin G potassium salt	601		
Penicillin G sodium salt pure Ph. Eur.	601		
Penicillin - Streptomycin (100X) Cell culture grade	602		

Phenolphthalein (C.I. 764)	617	Phthalic acid monopotassium salt see Potassium hydrogen	647
Phenolphthalein - Solutions	617	phthalate p.A.	
Phenolphthalein diphosphate tetrasodium salt	618	Picrosid II HPLC grade	627
Phenol red	618	Pikric acid - Solution 1.2 %	628
Phenol red - Solution	619	Piperazine-1,4-bis-(2-ethanesulfonic acid) see PIPES	628
Phenol red sodium salt	619	Piperazine-1,4-bis-(2-ethanesulfonic acid) 1.5sodium salt see	629
Phenolsulfonephthalein see Phenol red	618	PIPES 1.5sodium salt Buffer grade	
Phenolsulfonephthalein sodium salt see Phenol red sodium salt	619	Piperazine-1,4-bis-(2-ethanesulfonic acid) disodium salt see	628
Phenolsulfonphthalein see Phenol red	618	PIPES disodium salt Buffer grade	
Phenoltetrabromophthalein disulfonic acid disodium salt see	778	Piperazine-1,4-bis-(2-ethanesulfonic acid) sesquisodium salt	629
Sulfobromophthalein disodium salt		see PIPES 1.5sodium salt Buffer grade	
2-Phenoxyethanol	619	Piperazine-1,4-bis-(2-ethanesulfonic acid) sodium salt see	628
L-Phenylalanine	620	PIPES sodium salt Buffer grade	
2-Phenyl-1,2-benziselenazol-3(2H)-on see Ebselen	312	Piperazine-1,4-bis-(2-hydroxy-propane-sulfonic acid) dihydrate	635
Phenylcarbinol see Benzyl alcohol	135	see POPSO dihydrate Buffer grade	
o-Phenylenediamine, free base <i>BioChemica</i>	620	Piperazinediacrylamide see 1,4-Diacryloyl piperazine	272
p-Phenylenediamine, free base	620	<i>BioChemica</i>	
p-Phenylenediamine dihydrochloride <i>BioChemica</i>	621	PIPES	628
2-Phenylethanol for synthesis	621	PIPES disodium salt Buffer grade	628
2-Phenylethyl alcohol see 2-Phenylethanol for synthesis	621	PIPES sodium salt Buffer grade	628
Phenylethylglucosinolate potassium salt see Gluconasturtiin	376	PIPES 1.5sodium salt Buffer grade	629
HPLC grade		PKC412 <i>BioChemica</i>	629
Phenyl formic acid see Benzoic acid	133	Plastone see Polyvinylpyrrolidone	634
Phenylglycol see 2-Phenoxyethanol	619	Plate Count Agar	629
Phenylmethanesulfonyl fluoride see PMSF <i>BioChemica</i>	630	recombinant Mouse Platelet-Derived Growth Factor-AA see rM	600
pH-Fix Indicator Strips	621	PDGF-AA	
pH Indicator Strips see pH-Fix Indicator Strips	621	recombinant Human Platelet-Derived Growth Factor-AA see	599
Phloxine B (C.I. 45410) Microscopy grade	622	rHu PDGF-AA	
Phloxine red see Phloxine B (C.I. 45410) Microscopy grade	622	recombinant Human Platelet-Derived Growth Factor-AB see	600
Phomín see Cytochalasins	257	rHu PDGF-AB	
Phorbol-12-myristate-13-acetate (PMA)	622	recombinant Human Platelet-Derived Growth Factor-BB see	600
Phosphatase, acid from sweet potato	622	rHu PDGF-BB	
Phosphatase, acid from wheat germ	622	Pluronic® F-68	629
Phosphatase, alkaline bacterial (BAP)	622	PMS see Phenazine methosulfate	611
Phosphatase, alkaline from calf intestine (CIP)	623	PMSF <i>BioChemica</i>	630
Phosphate buffered saline see PBS buffer (Dulbecco's) -	593	PNAG see 4-Nitrophenyl-N-acetyl-β-D-glucosaminide	573
Powder		<i>BioChemica</i>	
Phosphate buffered saline / Tween® 20 see PBS / Tween® -	595	PNK see T4 Polynucleotide kinase	790
Solution		P ₄ O ₁₀ see di-Phosphorus pentoxide	627
Phosphate buffered saline, 10X concentrated see PBS buffer	593	Polyclear AT see Polyvinylpyrrolidone insoluble <i>BioChemica</i>	637
(Dulbecco's) - Powder		Polyetherin A see Nigericin sodium salt <i>BioChemica</i>	567
L-α-Phosphatidylcholine see Lecithins	483	Polyethylene glycol	630
Phosphocreatine see Creatine phosphate disodium salt	246	Polyethylene glycol hexadecylether see Brij® 58 <i>BioChemica</i>	157
tetrahydrate <i>BioChemica</i>		Polyethyleneglycol-mono-[(1,1,3,3-tetra methylbutyl)-phenyl]-	840
Phosphoenolpyruvate monopotassium salt	623	ether see Triton® X-100	
Phosphoenolpyruvate tricyclohexylammonium salt	623	Polyglycol see Polyethylene glycol	630
Phosphoenolsuccinic acid potassium salt see	623	Polymyxin B sulfate <i>BioChemica</i>	633
Phosphoenolpyruvate monopotassium salt		Polymyxin E ₁ disulfate see Colistin sulfate <i>BioChemica</i>	221
Phosphoenolsuccinic acid tris-(cyclohexylamine) salt see	623	Polynactin see Nonactin <i>BioChemica</i>	576
Phosphoenolpyruvate tricyclohexylammonium salt		Polynucleotide kinase, T4 see T4 Polynucleotide kinase	790
6-Phosphogluconic acid trisodium salt <i>BioChemica</i>	623	Polyoxyethylene see Polyethylene glycol	630
Phosphohydrolase (alkaline optimum) see Phosphatase,	623	Polyoxyethylenesorbitane monolaurate see Tween® 20	846
alkaline from calf intestine (CIP)		Polyoxyethylenesorbitane monolaurate - Solution see Tween®	847
2-Phospho-D-glycerate hydrolase see Enolase, Neuron-specific	327	20 - Solution 10 % peroxide-free	
human		Polyoxyethylenesorbitane monooleate see Tween® 80	847
Phosphoramidon disodium salt <i>BioChemica</i>	624	Polyoxyethylenesorbitane monooleate - Solution see Tween® 80	847
ortho-Phosphoric acid (concentrations ≥ 25 %)	624	- Solution 10 % peroxide-free	
ortho-Phosphoric acid (concentrations: ≥ 10 % - < 25 %)	626	Polyoxymethylene see Paraformaldehyde	592
ortho-Phosphoric acid 5 % pure	626	Polyvinyl alcohol 72000 <i>BioChemica</i>	633
Phosphoric acid 1-naphthyl ester monosodium salt see 1-	561	Polyvinyl formal see Formvar® Resin Electron Microscopy	362
Naphthyl phosphate monosodium salt monohydrate		Grade	
<i>BioChemica</i>		Polyvinylidene fluoride transfermembran see Transfer	825
Phosphoric acid 2-naphthyl ester monosodium salt see 2-	561	Membranes: Nitrocellulose, Nylon, PVDF	
Naphthyl phosphate monosodium salt <i>BioChemica</i>		Polyvinylpyrrolidone insoluble <i>BioChemica</i>	633
Phosphorous acid 98 % p. A.	626	Polyvinylpyrrolidone	634
Phosphorous acid ≤ 50 %	627	Ponceau 4R see Cochenille Red (C.I. 16255)	220
Phosphorus(V) oxide see di-Phosphorus pentoxide	627	Ponceau S (C.I. 27195)	635
di-Phosphorus pentoxide	627	Ponceau S - Solution	635
		POPSO dihydrate Buffer grade	635
		Potassium acetate	635

Potassium aluminium sulfate dodecahydrate	636	Potassium pyrosulfite see Potassium disulfite	643
Potassium bicarbonate see Potassium hydrogen carbonate	645	Potassium rhodanide see Potassium thiocyanate	661
Potassium bichromate see Potassium dichromate	641	Potassium sodium tartrate tetrahydrate	660
Potassium biphtalate see Potassium hydrogen phthalate p. A.	647	Potassium sorbate powdered, pure Ph. Eur.	660
Potassium bromate - Standard volumetric solution (1/60 M)	636	Potassium sulfate	660
Potassium bromide	636	Potassium sulfocyanide see Potassium thiocyanate	661
Potassium carbonate	637	Potassium thiocyanate	661
Potassium chlorate (with anti-caking-agent)	637	Potassium thiocyanate - Solutions	661
Potassium chloride	638	Potato Dextrose Agar	662
Potassium chloride - Solutions	638	Povidone see Polyvinylpyrrolidone	634
Potassium chloride - Solutions saturated with silver chloride	639	PPE - Inhibitor see Elastase Inhibitor I	319
Potassium chloride - Standard volumetric solutions	640	PPL see Lipase from porcine pancreas	490
Potassium chromate p. A.	640	PPS see 3-(1-Pyridino)-1-propanesulfonate	677
tri-Potassium citrate monohydrate pure Ph. Eur., BP, USP, Food grade	641	Prealbumin, human	662
Potassium dichromate	641	Precipitation reagent for DNA, RNA and proteins see DNA-PrecipitAid	304
Potassium dichromate - Standard volumetric solutions	641	4-Pregnen-3,20-dione see Progesterone	663
Potassium dihydrogen phosphate	642	4-Pregnene-11 β ,17 α ,21-triol-3,20-dione see Hydrocortisone	420
Potassium dihydrogen phosphate - Solutions	643	<i>BioChemica</i>	
Potassium disulfite	643	Primin HPLC grade	662
Potassium ferricyanide	644	Primulaverin HPLC grade	662
Potassium ferricyanide see Potassium ferricyanide	644	Primverin HPLC grade	663
Potassium ferrocyanide trihydrate	644	Progesterone	663
Potassium ferrocyanide see Potassium ferrocyanide trihydrate	644	Progoitrin HPLC grade	663
Potassium fluoride	645	rHu Prolactin bioconfident grade	663
Potassium fluoride - Solution 33 % pure	645	Proliferation Test Kit for Cells see Cell Proliferation Kit XTT	190
Potassium L-glutamate monohydrate see L-Glutamic acid monopotassium salt monohydrate	381	L-Proline	663
Potassium gluconate see Gluconic acid potassium salt	376	Pronase E see Protease from <i>Streptomyces griseus</i>	671
Potassium hexacyanoferrate(II) trihydrate see Potassium ferrocyanide trihydrate	644	1,2-Propanediol	664
Potassium hexacyanoferrate(III) see Potassium ferricyanide	644	1-Propanesulfonic acid sodium salt IPC grade	664
Potassium hydrogen carbonate	645	2-Propanesulfonic acid sodium salt IPC grade	664
di-Potassium hydrogen phosphate anhydrous	646	1,2,3-Propanetriol see Glycerol anhydrous	383
di-Potassium hydrogen phosphate trihydrate p. A.	646	n-Propanol see 1-Propanol	665
di-Potassium hydrogen phosphate - Solutions	647	1-Propanol	665
Potassium hydrogen phthalate p. A.	647	2-Propanol (Isopropanol)	666
Potassium hydrogen phthalate - Solution for COD-determination (170 mg/L)	647	2-Propanol D ₈ (Isopropanol D ₈)	669
Potassium hydrogen tartrate pure	647	1,2,3-Propantriol see Glycerol 87 %	385
Potassium hydroxide - Pellets	648	Propidium iodide <i>BioChemica</i>	669
Potassium hydroxide - Solutions 25 % - 50 %	648	Propionic acid for synthesis	669
Potassium hydroxide - Solutions 10 % - 20 %	649	Propionic acid sodium salt pure	670
Potassium hydroxide solution in alcohols see Potassium hydroxide - Standard volumetric solution (in alcohols)	651	Propiopyvothine see Thiolutin <i>BioChemica</i>	813
Potassium hydroxide - Standard volumetric solutions (aqueous solutions)	650	Propyl alcohol see 1-Propanol	665
Potassium hydroxide - Standard volumetric solution (in alcohols)	651	All-trans-4-(4'-Propyl)bicyclohexyl- α -maltoside <i>BioChemica</i>	670
Potassium iodate	654	Propylene carbonate pure	670
Potassium iodate - Standard volumetric solution (1/60 M)	654	1,2-Propylene glycol see 1,2-Propanediol	664
Potassium iodate - Standard volumetric solution (0.1 N) see Potassium iodate - Standard volumetric solution (1/60 M)	654	Propylene glycol carbonate see Propylene carbonate pure	670
Potassium iodide	654	Propyleneglycol monomethyl ether see 1-Methoxy-2-propanol pure	536
Potassium iodide - Solutions	655	n-Propyl gallate pure Ph. Eur.	670
Potassium iodide - Standard volumetric solutions	656	Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	670
Potassium metabisulfite see Potassium disulfite	643	Propylparaben see Propyl-4-hydroxybenzoate pure Ph. Eur., NF, FCC	670
Potassium myronate see Sinigrin monohydrate	719	Propyl-3,4,5-trihydroxybenzoate see n-Propyl gallate pure Ph. Eur.	670
Potassium nitrate	656	Prosecco see Ethanol 10 % - 39 %	336
di-Potassium oxalate monohydrate	657	Prostate specific Antigen (PSA), human	671
di-Potassium oxalate - Solutions	657	Prostate specific Antigen - α_1 -Antichymotrypsin Complex, human	671
Potassium permanganate	658	Prostatropin see rHu bFGF (155)	349
Potassium permanganate - Standard volumetric solutions	658	Protease from <i>Streptomyces griseus</i>	671
sec.-Potassium phosphate see di-Potassium hydrogen phosphate trihydrate p. A.	646	Protease Inhibitor Cocktails	672
prim.-Potassium phosphate see Potassium dihydrogen phosphate	642	α_1 -Proteinase Inhibitor see α_1 -Antitrypsin, human	111
Potassium phosphate dibasic see di-Potassium hydrogen phosphate trihydrate p. A.	646	Proteinase K, recombinant	673
		Proteinase K	674
		Proteinase K - Solution	674
		Protein determination with Bicinchoninic acid Micro Scale see Bicinchoninic acid Protein Assay Micro	138

Protein determination with Bicinchoninic acid see Bicinchoninic acid Protein Assay	138
Protein dye in the visible range see Proteo-Dye - Protein dyes	674
Protein dye with green fluorescence see Proteo-Dye - Protein dyes	674
Protein dye with red fluorescence see Proteo-Dye - Protein dyes	674
Protein kinase C inhibitor see Bisindolylmaleimide <i>BioChemica</i>	146
Protein Ladder see Electrophoresis Size Marker/Standard Protein	325
Protein Marker/Standard for Gel Electrophoresis see Electrophoresis Size Marker/Standard Protein	325
Proteo-Dye - Protein dyes	674
Protease	675
PSA see Prostate specific Antigen (PSA), human	671
PSA-ACT see Prostate specific Antigen - α_1 -Antichymotrypsin Complex, human	671
Pseudohypericin HPLC grade	676
<i>Psp</i> DNA Polymerase	676
Pteroyl-L-glutamic acid see Folic acid crystalline	354
Purimycin see Puromycin dihydrochloride <i>BioChemica</i>	676
6-Purinethiol see Mercaptopurine monohydrate <i>BioChemica</i>	529
Puromycin aminonucleoside <i>BioChemica</i>	676
Puromycin dihydrochloride <i>BioChemica</i>	676
Purpuric acid ammonium salt see Murexide (C.I. 56085)	553
Putrescin dihydrochloride	677
PVDF - Transfer membran see Transfer Membranes: Nitrocellulose, Nylon, PVDF	825
PVP see Polyvinylpyrrolidone	634
PVPP see Polyvinylpyrrolidone insoluble <i>BioChemica</i>	633
Pyocytanin coeruleum see Crystal violet (C.I. 42555)	247
Pyridine	677
Pyridine D ₅	677
Pyridine 3-carboxylic acid see Nicotinic acid pure Ph. Eur., USP	567
3-(1-Pyridino)-1-propanesulfonate	677
Pyridoxal hydrochloride <i>BioChemica</i>	678
Pyridoxal 5'-phosphate <i>BioChemica</i>	678
Pyridoxin hydrochloride	678
Pyridoxol hydrochloride see Pyridoxin hydrochloride	678
3-(2-Pyridylidithio)-propionic acid N-succinimide ester see SPDP	759
Pyrogallol pure	678
Pyrogallol red	678
Pyrogallolsulfonephthalein see Pyrogallol red	678
L-Pyroglutamic acid β -naphthylamide	679
Pyronein G see Pyronin Y (C.I. 45005)	679
Pyronin Y (C.I. 45005)	679
L-2-Pyrrolidinedecarboxylic acid see L-Proline	663
Pyruvic acid	679
Pyruvic acid sodium salt see Sodium pyruvate	750
qPCR	598

Q

Quantitation of proteins see Bicinchoninic acid Protein Assay	138
Quercetin HPLC grade	680
Quercetin-3- β -D-galactoside see Hyperosid	431
Quercetin-3-glucoside see Isoquercitrin	466
Quercetin-4'-glucoside see Spiraeoside HPLC grade	760
Quercetin-3-rhamnoside see Quercitrin HPLC grade	680
Quercetin-3-rutinoside see Rutin HPLC grade	694
Quercitrin HPLC grade	680
Quercitroside see Quercitrin HPLC grade	680
Quinaldine red	680
Quinaldine red - Solution	680
Quinoline for synthesis	681
Quinoline yellow	681
8-Quinolol see 8-Hydroxyquinoline	428
p-Quinone see p-Benzoquinone for synthesis	134

R

Radical <i>BioChemica</i>	681
D(+)-Raffinose pentahydrate <i>BioChemica</i>	681
Rakoff staining solution for microscopy	681
Random Primer DNA Labeling Mix	682
recombinant Human RANKL see rHu RANKL	682
recombinant Mouse RANKL see rM RANKL	683
rHu RANKL bioconfident grade	682
rHu RANKL	682
rM RANKL	683
rM Soluble RANK Ligand see rM RANKL	683
rHu soluble Rank Ligand see rHu RANKL	682
recombinant Human RANTES see rHu RANTES	683
recombinant Mouse RANTES see rM RANTES	683
rHu RANTES	683
rM RANTES	683
RAPA see Rapamycin <i>BioChemica</i>	683
Rapamune see Rapamycin <i>BioChemica</i>	683
Rapamycin <i>BioChemica</i>	683
RbCl see Rubidium chloride <i>BioChemica</i>	693
RBP see Retinol Binding Protein (RBP), human	685
Real Time-PCR Kit see qPCR Kit, DNA-free	597
Real Time-PCR Mastermix see qPCR Kit, DNA-free	597
Resiniferatoxin see Resiniferatoxin <i>BioChemica</i>	684
Red blood cell - Lysis solution see DNA Isolation Kits	294
Red-Gal™ see Rose-Gal <i>BioChemica</i>	691
Red-Glucuro™ see Rose-Glucuro CHA salt <i>BioChemica</i>	692
Red-Phos™ see Rose-Phos p-toluidine salt <i>BioChemica</i>	692
Refill Buffer Set for DNA Isolation Spin Kits see maxXmore™	518
Regeneration Kit for DNA Binding Columns see maxXbond™	517
Reinforced Clostridial (RCM-DRCM) Medium Base	684
Renardin see Senkirin HPLC grade	709
Renin, human	684
Resazurin sodium salt	684
Resiniferatoxin <i>BioChemica</i>	684
all-trans-Retinoic acid see Retinoic acid pure Ph. Eur.	685
Retinoic acid pure Ph. Eur.	685
Retinol Binding Protein (RBP), human	685
Retinyl acetate see Vitamin A acetate	856
Retrorsin HPLC grade	685
Retrorsin-N-oxide HPLC grade	685
M-MuLV Reverse Transcriptase, RNase H minus	685
Reverse transcription buffer (10X)	686
N-(α -Rhamnopyranosylphosphono)-L-leucyl-L-tryptophan disodium salt see Phosphoramidon disodium salt <i>BioChemica</i>	624
L(+)-Rhamnose monohydrate <i>BioChemica</i>	686
Rhamnoxanthine see Frangulin A HPLC grade	363
Rhein	686
Rheum-Emodin see Emodin HPLC grade	326
Rhinanthin see Aucubin HPLC grade	122
Rhodamine B (C.I. 45170)	686
Rhodamine 6G (C.I. 45160)	687
Rhodoese see D(+)-Fucose <i>BioChemica</i>	365
Ribitol see Adonitol <i>BioChemica</i>	69
Riboflavin	687
Riboflavin-5'-adenosine diphosphate disodium salt dihydrate see Flavin adenine dinucleotide disodium salt dihydrate <i>BioChemica</i>	351
Riboflavin 5'-phosphate monosodium salt dihydrate see Flavin mononucleotide monosodium salt dihydrate <i>BioChemica</i>	352
Ribonuclease A see RNase A	689
Ribonuclease inhibitor from human placenta	687
Ribonuclease Inhibitor, recombinant	687
Ribonuclease T1 see RNase T	690
Ribonucleic acid from yeast	688
D(-)-Ribose <i>BioChemica</i>	688

L(+)-Ribose <i>BioChemica</i>	688	recombinant Mouse SCF see rM SCF	704
Rifampicin	688	rHu SCF bioconfident grade	703
Rifampin see Rifampicin	688	rHu SCF	703
Rifamycin SV see Rifampicin	688	rM SCF bioconfident grade	703
RNA from yeast see Ribonucleic acid from yeast	688	rM SCF	704
RNA - Isolation	689	Schaffer's - Solution	704
RNase A	689	Schardinger- γ -Dextrin see γ -Cyclodextrin <i>BioChemica</i>	250
RNase decontamination solution see RNase-ExitusPlus™	691	Schneider's Drosophila - Insect medium	704
RNase T	690	recombinant Mouse SDF-1a see rM SDF-1 α	705
RNase-ExitusPlus™	691	rHu SDF-1 α	704
Robigenin see Kaempferol	468	rM SDF-1 α	705
Rosaniline see Fuchsin basic (C.I. 42510) Microscopy grade	364	SDS	705
Rosazein see Rhodamine B (C.I. 45170)	686	SDS - Solutions	706
Rose Bengal (C.I. 45440)	691	SDS-Tris-Glycine buffer <i>BioChemica</i>	707
Rose Bengal - Solution	691	Sea sand	707
Rose-Gal <i>BioChemica</i>	691	sec. Propanol see 2-Propanol (Isopropanol)	666
Rose-Glucuro CHA salt <i>BioChemica</i>	692	Seignette salt see Potassium sodium tartrate tetrahydrate	660
Rose-Phos p-toluidine salt <i>BioChemica</i>	692	Selenite Broth Base	708
Rosmarinic acid HPLC grade	692	Selenite Supplement see Supplements for Microbiological Media	786
Rosolic acid (C.I. 43800)	692	Senecionin HPLC grade	708
RPM see Rapamycin <i>BioChemica</i>	683	Senecionin-N-oxide HPLC grade	708
Click - RPMI - Medium	692	Seneciophyllin HPLC grade	708
RPMI 1640 - Medium	693	Seneciophyllin-N-oxide HPLC grade	709
RT-PCR First Strand cDNA Synthesis Kit for Reverse Transcription see First Strand cDNA Synthesis-Kit for RT-PCR	351	Senkirkin HPLC grade	709
Rubidium chloride <i>BioChemica</i>	693	Sennosid A HPLC grade	709
Rubin S see Fuchsin acidic disodium salt (C.I. 42685)	364	Sennosid B HPLC grade	709
Rum see Ethanol 10 % - 39 %	336	SeparateIT Polymer Solution	709
Ruthenium red	694	Separation medium for Lymphocytes see Lympho-Pure	498
Ruthenium(II) tris(bathophenanthroline disulfonate) tetrasodium salt see Proteo-Dye - Protein dyes	674	L-Serine	710
Rutin HPLC grade	694	Serum glutamic oxaloacetic transaminase (SGOT) see Glutamate Oxaloacetate Transaminase (GOT), human	379
Rutosid see Rutin HPLC grade	694	Sesamol	710
		rHu SF20 bioconfident grade	710
		SGOT see Glutamate Oxaloacetate Transaminase (GOT), human	379
S		rM SHH	711
Sabouraud Chloramphenicol Agar	694	Shikimic acid pure	711
Sabouraud Dextrose (4 %) Agar	694	SIA	711
Saccharin sodium salt pure Ph. Eur., USP	694	Sialic acid <i>BioChemica</i>	711
S-Acetylthiocholine iodide see Acetylthiocholine iodide <i>BioChemica</i>	49	Silane A 174 see 3-Methacryloxypropyl trimethoxysilane	532
SafetyFirst Caps	695	Silica gel 60	711
SafetyFirst Caps for waste container	697	Silica gel orange	712
SafetyFirst Accessories	698	Silica powdered, pure DAB	712
Safranalin see Rhodamine B (C.I. 45170)	686	Silicon-free greases (glisseal®)	712
Safranin O (C.I. 50240) for Microscopy	700	Silver carbonate pure	713
Safranin T see Safranin O (C.I. 50240) for Microscopy	700	Silver L-lactate see L(+)-Lactic acid silver salt <i>BioChemica</i>	477
Salicine yellow see Alizarin yellow GG (C.I. 14025)	80	Silver methanesulfonate pure	713
D(-)-Salicin Microbiology grade	700	Silver nitrate	713
Salicylic acid	701	Silver nitrate - Solutions	714
Salicylic acid sodium salt see Sodium salicylate p. A.	751	Silver nitrate - Standard volumetric solutions	715
Salmon sperm DNA sodium salt	701	Silver sulfate	717
Salmonella-Shigella (SS) Agar, Modified	701	Silver sulfate - Sulfuric acid - Solutions for COD-determination	717
SAM see S-(5'-Adenosyl)-L-methionine iodide <i>BioChemica</i>	68	Silybin HPLC grade	718
Sample buffer for immunoassays (detergent-free) see Immunoassay Buffer	446	Simmons Citrate Agar	718
Sample buffer for immunoassays (with detergent) see Immunoassay Buffer	446	Sinalbin HPLC grade	718
Saponarin HPLC grade	702	Sinensetin HPLC grade	718
Saponin from <i>Quillaja</i> Bark	702	Sinigrin monohydrate	719
Sarcosine see L(+)-Lactic acid silver salt <i>BioChemica</i>	477	Sinigrin monohydrate	719
Sarkine see Hypoxanthine <i>BioChemica</i>	431	Sinigrin monohydrate	719
Sarkosyl see N-Lauroylsarcosine sodium salt	480	SiO ₂ see Silica powdered, pure DAB	712
SATA	702	Sirolimus see Rapamycin <i>BioChemica</i>	683
SB 3-12 see Sulfobetaine SB 12	778	β -Sitosterol	719
SBA	703	Size-exclusion chromatography matrix see AppliXchange-G25 M	116
Scarlet Red Scharlach see Sudan IV (C.I. 26105)	777	Size-exclusion Chromatography Protein see DextraSEC PRO10	271
		Size Standard for Gel Electrophoresis DNA see Electrophoresis Size Marker/Standard DNA	319

Size Standard for Gel Electrophoresis Proteins see Electrophoresis Size Marker/Standard Protein	325	Sodium heptylsulfonate see 1-Heptanesulfonic acid sodium salt anhydrous IPC grade	404
Skim milk see Nonfat dried milk powder	577	Sodium heptylsulfonate monohydrate see 1-Heptanesulfonic acid sodium salt monohydrate IPC grade	404
Skin decontamination reagent (nucleic acids) see Derma-ExitusPlus™	269	Sodium hydrogen carbonate	734
SMCC	719	Sodium hydrogen carbonate - Solution 5 %	735
SnCl ₂ see Tin(II) chloride dihydrate	817	di-Sodium hydrogen phosphate anhydrous	735
SOB-Medium - Powder	720	di-Sodium hydrogen phosphate dihydrate	735
Sodium acetate anhydrous	720	di-Sodium hydrogen phosphate - Solution (1/15 M)	736
Sodium acetate trihydrate	720	di-Sodium hydrogen phosphate dodecahydrate	736
Sodium acetate - Solutions 3 M	721	Sodium hydrogen tartrate monohydrate pure	737
Sodium acetate - Solutions	722	Sodium hydroxide pearls	737
Sodium acetate - Standard volumetric solutions	722	Sodium hydroxide pellets	737
Sodium alginate see Alginic acid sodium salt <i>BioChemica</i>	79	Sodium hydroxide - Solutions (concentrations: ≥ 5 %)	738
Sodium L(+)-ascorbate pure USP	722	Sodium hydroxide - Solutions (concentrations: ≥ 2 % - < 5 %)	741
Sodium azide pure	723	Sodium hydroxide - Solution 1 % pure	741
Sodium benzoate pure Ph. Eur., NF	723	Sodium hydroxide - Solution (1 M) Molecular biology grade	742
Sodium bicarbonate see Sodium hydrogen carbonate	734	Sodium hydroxide - Standard volumetric solutions (concentrations ≥ 1.25 M)	742
Sodium bitartrate see Sodium hydrogen tartrate monohydrate pure	737	Sodium hydroxide - Standard volumetric solutions (conc. ≥ 0.5 M - < 1.25 M)	743
Sodium borohydride	723	Sodium hydroxide - Standard volumetric solutions (conc. > 0.13 M - < 0.5 M)	743
Sodium boranate see Sodium borohydride	723	Sodium hydroxide - Standard volumetric solutions (concentrations < 0.125 M)	744
Sodium borate see di-Sodium tetraborate anhydrous	754	Sodium hypochlorite - Solutions	745
Sodium bromide	724	Sodium iodate p. A.	745
Sodium 1-butanedisulfonate see 1-Butanesulfonic acid sodium salt IPC grade	170	Sodium iodide	745
Sodium cacodylate see Cacodylic acid sodium salt trihydrate <i>BioChemica</i>	175	Sodium iodoacetate see Iodoacetic acid sodium salt <i>BioChemica</i>	456
Sodium carbonate anhydrous	724	Sodium isothiocyanate see Sodium thiocyanate pure	755
Sodium carbonate - Solutions	725	Sodium-L-lactate see L(+)-Lactic acid sodium salt crystalline <i>BioChemica</i>	477
Sodium carbonate - Standard volumetric solutions	725	Sodium L-lactate - Solution 50 % see L-Lactic acid sodium salt - Solution 50 % low endotoxin pure Ph. Eur., USP	477
Sodium carbonate decahydrate	725	Sodium lauroylsarcosinate - Solutions see N-Lauroylsarcosinate - Solutions	480
Sodium chlorate - Solution (50 g/L)	726	Sodium laurylsulfate see SDS	705
Sodium chloride	726	Sodium laurylsulfonate see 1-Dodecanesulfonic acid sodium salt IPC grade	305
Sodium chloride - Solutions	727	Sodium metabisulfite see Sodium disulfite	732
Sodium cholate <i>BioChemica</i>	728	Sodium metaperiodate p. A.	746
mono-Sodium citrate pure	728	Sodium methanesulfonate see Methanesulfonic acid sodium salt pure	533
tri-Sodium citrate dihydrate	728	Sodium molybdate dihydrate	746
Sodium citrate monobasic see mono-Sodium citrate pure	728	Sodium 1-naphthyl phosphate see 1-Naphthyl phosphate monosodium salt monohydrate <i>BioChemica</i>	561
Sodium citrate tribasic see tri-Sodium citrate dihydrate	728	Sodium nitrate	746
Sodium cyclamate pure Ph. Eur.	729	Sodium nitrite	747
Sodium-1-decane sulfonate see 1-Decanesulfonic acid sodium salt IPC grade	260	Sodium 1-nonane sulfonate see 1-Nonanesulfonic acid sodium salt IPC grade	576
Sodium deoxycholate <i>BioChemica</i>	729	Sodium 1-octane sulfonate see 1-Octanesulfonic acid sodium salt IPC grade	581
Sodium diacetate pure	729	Sodium orthovanadate <i>BioChemica</i>	748
Sodium diatrizoate dihydrate Cell culture grade	730	Sodium oxamate see Oxamic acid sodium salt	589
Sodium diethyldithiocarbamate trihydrate <i>BioChemica</i>	730	Sodium 1-pentanesulfonate see 1-Pentanesulfonic acid sodium salt anhydrous IPC grade	603
Sodium dihydrogen citrate see mono-Sodium citrate pure	728	Sodium 1-pentanesulfonate monohydrate see 1-Pentanesulfonic acid sodium salt monohydrate IPC grade	603
Sodium dihydrogen phosphate dihydrate	730	Sodium perborate tetrahydrate	748
Sodium dihydrogen phosphate monohydrate	731	Sodium perchlorate monohydrate	749
Sodium dihydrogen phosphate - Solutions	732	Sodium perchlorate - Solution (5 M) Molecular biology grade	749
tetra-Sodium diphosphate decahydrate see Sodium pyrophosphate decahydrate	750	Sodium periodate see Sodium metaperiodate p. A.	746
Sodium disulfite	732	tri-Sodium phosphate dodecahydrate	749
Sodium dodecylsulfate see SDS	705	sec.-Sodium phosphate see di-Sodium hydrogen phosphate dodecahydrate	736
di-Sodium-1,2-ethanedisulfonate see 1,2-Ethanedisulfonic acid disodium salt IPC grade	332	sec.- Sodium phosphate see di-Sodium hydrogen phosphate dihydrate	735
Sodium ethylmercurithiosalicylate see Thimerosal <i>BioChemica</i>	812	tert.Sodium phosphate see tri-Sodium phosphate dodecahydrate	749
Sodium fluoride	733		
Sodium formiate pure	733		
Sodium fusidate see Fusidic acid sodium salt <i>BioChemica</i>	366		
Sodium gluconate pure USP	733		
Sodium-D-glucuronate see D-Glucuronic acid sodium salt monohydrate <i>BioChemica</i>	379		
Sodium L-glutamate monohydrate see L-Glutamic acid sodium salt monohydrate pure	381		
Sodium glycocholate <i>BioChemica</i>	734		
Sodium glyoxylate monohydrate <i>BioChemica</i>	734		

- 1002 -

Sulfo-NHS-LC-Biotin see 6-(Biotinylamino)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt	143	L(+)-Tartaric acid monosodium salt see Sodium hydrogen tartrate monohydrate pure	737
Sulfo-NHS-LC-LC-Biotin see 6-(Biotinamido)hexanoylamido)hexanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt	141	Taurine	796
Sulfo-NHS-SS-Biotin see 3-[[2-(Biotinylamino)ethylidithio]propanoic acid 3-sulfo-N-hydroxysuccinimide ester sodium salt	143	(+)-Taxifolin HPLC grade	796
1-(3-Sulfopropyl)-pyridinium betaine see 3-(1-Pyridino)-1-propanesulfonate	677	Taxol <i>BioChemica</i>	797
Sulfuric acid (concentrations: $\geq 51\%$)	780	TB see Thymol blue	815
Sulfuric acid (concentrations: 15 - 51 %)	782	TBA see Thiobarbituric acid <i>BioChemica</i>	812
Sulfuric acid 10 %	783	TBE buffer	797
Sulfuric acid - Standard volumetric solution (6 M)	784	TBE buffer powder	798
Sulfuric acid - Standard volumetric solution (concentrations $\geq 2\text{ M} - \leq 5\text{ M}$)	784	TBG see Thyroxin Binding Globulin (TBG), human	816
Sulfuric acid - Standard volumetric solution (1 M)	785	TB-Medium - Powder (Terrific Broth)	798
Sulfuric acid - Standard volumetric solution (concentrations $\leq 0.5\text{ M}$)	785	TBPA see Prealbumin, human	662
Supplement for Malt Extract Agar & Potato Dextrose Agar see Supplements for Microbiological Media	786	TB - Phosphate - Powder (10X)	799
Supplements for Microbiological Media	786	TBS (Tris-buffered saline) with Phenol red	799
Swainsonine	789	TBS (Tris-buffered saline) (20X) - Powder	799
SYBR Green® staining reagent, DNA free	789	TC 100 - Insect medium	799
Synperonic® F-68 see Pluronic® F-68	629	TCA - Solution see Trichloroacetic acid - Solutions	829
Syringaresinol-4',4'-O-bis- β -D-glucoside see Eleutheroside E HPLC grade	326	TCEP · HCl see Tris-(2-carboxyethyl)-phosphine hydrochloride <i>BioChemica</i>	838
Syringin see Eleutheroside B für die HPLC	326	TEACl see Tetraethylammonium chloride	805
Syringosid see Eleutheroside B für die HPLC	326	TEAF see Triethylammonium formate buffer pH 6.0 (1 M)	832
T			
T-2 Toxin see T2 Toxin <i>BioChemica</i>	789	TEAP see Triethylammonium phosphate buffer pH 3.0 (1 M)	833
T2 Toxin <i>BioChemica</i>	789	TE buffer	800
T4 DNA Ligase	790	TEMED	801
T4 Polynucleotide kinase	790	TEN buffer	801
T4 RNA Ligase	790	Tentoxin <i>BioChemica</i>	801
Tacrolimus see FK506 <i>BioChemica</i>	351	Terminator removal see DNA Isolation Kits	294
Tacrolimus see FK506 <i>BioChemica</i>	351	2,6-Di-tert.-butyl-4-methylphenol see Butylated hydroxytoluene (BHT)	173
TAE buffer	791	TES	802
D-(-)-Tagatose <i>BioChemica</i>	791	TES sodium salt Buffer grade	802
Talc powdered, pure Ph. Eur., USP	792	Testosterone	802
D-(-)-Talose <i>BioChemica</i>	792	3,3',4,4'-Tetraaminobiphenyl tetrahydrochloride see 3,3'-Diaminobenzidine tetrahydrochloride <i>BioChemica</i>	273
Tannic acid pure Ph. Eur., USP	792	3',3'',5',5''-Tetrabromo-m-cresolsulfonephthalein see Bromocresol green	159
TAPS	792	2',4',5',7'-Tetrabromofluorescein disodium salt see Eosin Y (C.I. 45380)	328
TAPSO Buffer grade	793	3',3'',5',5''-Tetrabromophenolsulfonephthalein see Bromophenol blue	161
Taq DNA Polymerase	793	3',3'',5',5''-Tetrabromophenolsulfone-phthalein sodium salt see Bromophenol blue sodium salt	162
Taq DNA Polymerase DNA-free	793	2',4',5',7'-Tetrabromo-4,5,6,7-tetrachlorofluorescein disodium salt see Phloxine B (C.I. 45410) Microscopy grade	622
SuperHot Taq DNA Polymerase	793	Tetrabutylammonium dihydrogen phosphate	802
Taq DNA Polymerase Reaction buffer (10X) complete	794	Tetrabutylammonium hydrogen sulfate	803
Taq DNA Polymerase Reaction buffer (10X) incomplete	794	Tetrabutylammonium hydroxide - Solutions	803
SuperHot Taq-red DNA Polymerase	794	Tetracaine hydrochloride <i>BioChemica</i>	804
Klein Taq DNA Polymerase	794	Tetrachlorauric(III) acid trihydrate	804
SuperHot Taq Master Mix "HotStart"	795	Tetrachloroethene see Tetrachloroethylene pure	804
Anti-Taq DNA Polymerase, monoclonal antibody (2R,3R)-(+)-Tartaric acid see L(+)-Tartaric acid	795	Tetrachloroethylene pure	804
L(+)-Tartaric acid	795	4,5,6,7-Tetrachloro-2',4',5',7'- tetraiodofluorescein see Rose Bengal (C.I. 45440)	691
L(+)-Tartaric acid - Solution 20 % p. A.	796	Tetracycline hydrochloride	805
Tartaric acid disodium salt dihydrate see di-Sodium tartrate dihydrate	753	12-O-Tetradecanoylphorbol-13-acetate see Phorbol-12-myristate-13-acetate (PMA)	622
		N-Tetradecyl-dimethyl-3-ammonio-1-propanesulfonate see Sulfobetaine SB 14	778
		n-Tetradecyl- β -D-maltoside	805
		Tetraethylammonium chloride	805
		Tetraethylrhodamin see Rhodamine B (C.I. 45170)	686
		Tetrafluoroboric acid - Solutions	805
		Tetrahydrobenzene see Cyclohexene for synthesis	252
		Tetrahydrofuran	806
		Tetrahydrofuran D ₈	807
		Tetrahydro-2-methylfuran see 2-Methyltetrahydrofuran pure	543
		3,4',5,7-Tetrahydroxyflavone see Kaempferol	468
		3',4',5,7-Tetrahydroxyflavone see Luteolin HPLC grade	498
		3,4',5,7-Tetrahydroxyflavone see Kaempferol	468

Tetramethylammonium chloride (TMACl) <i>BioChemica</i>	808	Thymolphthalein	816
Tetramethylammonium chloride - Solution (approx. 6 M) Molecular biology grade	808	Thymolphthalein - Solution	816
Tetramethylammonium hydroxide - Solution 25 %	808	Thymolsulfonephthalein see Thymol blue	815
3,3',5,5'-Tetramethylbenzidine <i>BioChemica</i>	808	Thymolsulfonephthalein sodium salt see Thymol blue sodium salt water-soluble	815
N,N'-(Tetramethylene)dimalimide see BMB	150	Thyroglobulin, human	816
Tetramethylene glycol see 1,4-Butanediol for synthesis	170	Thyroid-Peroxidase (TPO), human	816
N,N,N',N'-Tetramethylethylenediamine see TEMED	801	Thyroxin Binding Globulin (TBG), human	816
N,N,N',N'-Tetramethyl-p-phenylenediamine dihydrochloride <i>BioChemica</i>	809	Thyroxin Binding Prealbumin see Prealbumin, human	662
Tetramisole hydrochloride see Levamisole hydrochloride	488	Tiamulin see Myco-1	554
2,4,5,6-Tetraoxypyrimidine see Alloxan monohydrate	81	Tin(II) chloride dihydrate	817
Tetrapropylammonium hydroxide - Solution 40 % p. A.	809	Tin(IV) oxide pure	817
Tetrathionate Broth Base	809	Tin(II) sulfate pure	817
Tetrathionate Iodide Selective Supplement see Supplements for Microbiological Media	786	TiO ₂ see Titanium(IV) oxide pure	818
Tetrazolium blue chloride	809	TISAB - Solutions for detection of fluoride	817
Tetrazolium red	809	Titan acid anhydride see Titanium(IV) oxide pure	818
TFA see Trifluoroacetic acid	833	Titanium dioxide see Titanium(IV) oxide pure	818
TFA - Solution see Trifluoroacetic acid - Solution 25 %	833	Titanium(IV) oxide pure	818
TFCS	810	Titanium(III) sulfate - Solution 15 % pure	818
Tg see Thyroglobulin, human	816	Titan yellow (C.I. 19540)	818
TG buffer see Tris-Glycine buffers	838	Titan yellow - Solution	818
rHu TGF-β3	810	TLCK see N _α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) <i>BioChemica</i>	823
TGS buffer see SDS-Tris-Glycine buffer <i>BioChemica</i>	707	TLE buffer	818
THAM see Tris	835	Tli Inorganic Pyrophosphatase	819
Thapsigargin	810	TMACl see Tetramethylammonium chloride (TMACl) <i>BioChemica</i>	808
Thermolabile Antigen A see Enolase, Neuron-specific human	327	TMB see 3,3',5,5'-Tetramethylbenzidine <i>BioChemica</i>	808
Thermozymocidin see Myriocin <i>BioChemica</i>	556	TMCS see Trimethylchlorosilane	834
THF see Tetrahydrofuran	806	TMEDA see TEMED	801
Thiactin see Thiostrepton <i>BioChemica</i>	813	TMSDEA see Trimethylsilyldiethylamine	834
Thiamine chloride see Thiamine hydrochloride	811	TMSIM see 1-Trimethylsilylimidazole	834
Thiamine hydrochloride	811	rHu TNF-α bioconfident grade	819
Thiamine monophosphate chloride dihydrate <i>BioChemica</i>	811	rHu TNF-α	819
Thiamine pyrophosphate	811	rM TNF-α	820
Thiamine pyrophosphate chloride see Thiamine pyrophosphate	811	rR TNF-α	820
Thiazol yellow G see Titan yellow (C.I. 19540)	818	rHu TNF-β bioconfident grade	820
Thiazolyl blue tetrazolium bromide <i>BioChemica</i>	811	rHu TNFSF11 see rHu RANKL	682
Thimerosal <i>BioChemica</i>	812	rM TNFSF11 see rM RANKL	683
Thioacetamide p. A., ACS	812	Tn-I see Troponin I, human	841
Thiobarbituric acid <i>BioChemica</i>	812	TNM-FH - Insect medium (modified Grace's Insect medium)	820
Thiocarbamide see Thiourea	814	Tn-T see Troponin T, human	841
DL-6,8-Thioctic acid see DL-α-Lipoic acid <i>BioChemica</i>	490	DL-α-Tocopherol <i>BioChemica</i>	821
Thioglycolate Medium	812	DL-α-Tocopherol acetate	821
Thioglycolic acid	813	Tolonium chloride see Toluidine blue (C.I. 52040)	823
Thioglycolic acid - Solution 80 % pure	813	Toluene	821
6-Thiohypoxanthine see Mercaptopurine monohydrate <i>BioChemica</i>	529	Toluene D ₈	822
Thiolutin <i>BioChemica</i>	813	Toluene-4-sulfonechloramide sodium see Chloramine T trihydrate	200
Thionicotinamide adenine dinucleotide see Thio-NAD	557	Toluidine blue (C.I. 52040)	823
Thionicotinamide-DPN see Thio-NAD	557	Toluidine blue-O zinc chloride double salt see Toluidine blue (C.I. 52040)	823
Thiostrepton <i>BioChemica</i>	813	Toluylene red see Neutral red (C.I. 50040)	564
Thiourea	814	Tomatin see α-Solanine HPLC grade	757
THP A see Hydroxyectoine	425	TOOS <i>BioChemica</i>	823
THP B see Ectoïne	312	Toronto-Starch see Starch	772
L-Threonine	814	N _α -Tosyl-L-lysine chloromethyl ketone hydrochloride (TLCK) <i>BioChemica</i>	823
recombinant Mouse Thrombopoietin see rM TPO	824	N _α -Tosyl-L-lysyl-chloromethane hydrochloride see N _α -Tosyl-L- lysine chloromethyl ketone hydrochloride (TLCK) <i>BioChemica</i>	823
Thymidine see 2'-Deoxythymidine <i>BioChemica</i>	267	Tosyl-L-phenylalanine chloromethyl ketone (TPCK)	824
Thymidine 5'-triphosphate trisodium salt see 2'- Deoxythymidine 5'-triphosphoric acid trisodium salt <i>BioChemica</i>	268	N-Tosyl-L-phenylalanylchloromethane see Tosyl-L- phenylalanine chloromethyl ketone (TPCK)	824
Thymine	815	" Total Ionic Strength Adjustment Buffer" Solution see TISAB - Solutions for detection of fluoride	817
Thymine deoxyriboside see 2'-Deoxythymidine <i>BioChemica</i>	267	Toxin F2 see Zearalenone <i>BioChemica</i>	874
Thymineose see 2-Deoxy-D-ribose <i>BioChemica</i>	267	TPA see Phorbol-12-myristate-13-acetate (PMA)	622
Thymol pure Ph. Eur	815	TPCK see Tosyl-L-phenylalanine chloromethyl ketone (TPCK)	824
Thymol blue	815		
Thymol blue - Solution	815		
Thymol blue sodium salt water-soluble	815		

TPE buffer	824	5,6,7-Trihydroxyflavone see Baicalein	125
TPO see Thyroid-Peroxidase (TPO), human	816	4',5,7-Trihydroxyisoflavone see Genistein <i>BioChemica</i>	372
rM TPO	824	11 β ,17 α ,21-Trihydroxyprogesterone see Hydrocortisone	420
TPTZ see Tetrazolium red	809	<i>BioChemica</i>	
rM TRANCE see rM RANKL	683	2,6,8-Trihydroxypurine see Uric acid <i>BioChemica</i>	851
Transfection reagent AppliFect see AppliFect	114	Triodomethane see Iodoform pure	456
Transfection reagent for mammalian cells with siRNA or miRNA see Electrophoresis Size Marker/Standard Protein	325	3-(Trimethoxysilyl)propyl methacrylate see 3-Methacryloxypropyl trimethoxysilane	532
Transfection reagent for very sensitive cells see AppliFect LowTox	115	P'-[2-(Trimethylammonio)ethyl]-ester cytidine 5'-(trihydrogen diphosphate) inner salt see Citicoline sodium salt	213
Transfection reagent optimized for insect cells see AppliFect Insect	115	<i>BioChemica</i>	
Transfer Membranes: Nitrocellulose, Nylon, PVDF	825	Trimethylchlorosilane	834
apo-Transferrin, human	827	2,2,4-Trimethylpentane see Isooctane	464
holo-Transferrin, human	828	Trimethylsilyldiethylamine	834
apo-Transferrin, bovine	828	1-Trimethylsilylimidazole	834
holo-Transferrin, bovine	828	N,N,N'-Trimethylthionin see Azure B (C.I. 52010)	124
recombinant Human Transforming Growth Factor- β 3 see rHu TGF- β 3	810	2,4,6-Trinitrophenol - Solution, saturated see Pikric acid - Solution 1.2 %	628
Transthyretin see Prealbumin, human	662	Trioxohydrindene hydrate see Ninhydrin p. A.	567
Trasylol® see Aprotinin <i>BioChemica</i>	116	2,3,5-Triphenyltetrazolium chloride see Tetrazolium red	809
D(+)-Trehalose dihydrate <i>BioChemica</i>	828	Tris	835
Tremortin A see Penitrem A <i>BioChemica</i>	602	Tris buffer (1 M)	836
Tretinoin see Retinoic acid pure Ph. Eur.	685	Tris buffer (0.5 M)	837
Triacetin see Glycerol triacetate	386	Tris hydrochloride	837
Triacsin C <i>BioChemica</i>	828	Tris : Tris · HCl - Mixture (pH 8.8)	837
Triacylglycerol acylhydrolase see Lipase, human	490	Tris acetate Buffer grade	838
Triacylglycerol lipase see Lipase from porcine pancreas	490	Tris-Acetate-EDTA buffer see TAE buffer	791
Tributyrin <i>BioChemica</i>	828	Tris base see Tris	835
1,2,3-Tributyrylglycerol see Tributyrin <i>BioChemica</i>	828	Tris-Borate-EDTA buffer see TBE buffer	797
Tricaine methanesulfonate salt see 3-Aminobenzoic acid ethyl ester methanesulfonate <i>BioChemica</i>	87	Tris Buffered Saline (Powder) see TBS (Tris-buffered saline) (20X) - Powder	799
Tricalcium citrate see tri-Calcium dicitrate tetrahydrate pure	180	Tris-(2-carboxyethyl)-phosphine hydrochloride <i>BioChemica</i>	838
Trichloroacetaldehyde hydrate see Chloral hydrate pure Ph. Eur.	200	Tris dihydrogen phosphate Buffer grade	838
3 % Trichloroacetic acid in dichloromethane see Detritylation - Solution DNA synthesis grade	269	Tris-EDTA buffer see TE buffer	800
Trichloroacetic acid (TCA)	829	Tris-Glycine buffers	838
Trichloroacetic acid - Solutions	829	Tris - HCl see Tris hydrochloride	837
1,2,4-Trichlorobenzene GPC grade	830	Tris-(2-hydroxyethyl)-amine see Triethanolamine	831
1,1,2-Trichloroethene see Trichloroethylene	830	Tris-(2-hydroxyethyl)-ammonium chloride see Triethanolamine hydrochloride <i>BioChemica</i>	832
Trichloroethylene	830	Tris-(hydroxymethyl)-aminomethane see Tris	835
Trichloromethane see Chloroform	204	Tris-(hydroxymethyl)-aminomethane acetate see Tris acetate Buffer grade	838
Trichostatin A <i>BioChemica</i>	830	Tris-(hydroxymethyl)-aminomethane hydrochloride see Tris hydrochloride	837
Trichothecen see T2 Toxin <i>BioChemica</i>	789	Tris-(hydroxymethyl)-aminomethane maleate see Tris maleate Buffer grade	839
Tricine	831	Tris-(hydroxymethyl)-aminomethane succinate see Tris succinate Buffer grade	839
n-Tridecyl- β -D-maltoside Crystallography grade	831	N-[Tris-(hydroxymethyl)-methyl]-2-aminoethanesulfonic acid see TES	802
Triethanolamine	831	N-[Tris-(hydroxymethyl)-methyl]-2-amino-ethanesulfonic acid sodium salt see TES sodium salt Buffer grade	802
Triethanolamine hydrochloride <i>BioChemica</i>	832	N-[Tris-(hydroxymethyl)-methyl]-3-amino-2-hydroxypropanesulfonic acid see TAPSO Buffer grade	793
Triethylamine	832	N-[Tris-(hydroxymethyl)-methyl]-3-aminopropanesulfonic acid see TAPS	792
Triethylammonium acetate buffer pH 7.0 (1 M)	832	N-[Tris-(hydroxymethyl)-methyl]-glycine see Tricine	831
Triethylammonium formate buffer pH 6.0 (1 M)	832	Tris maleate Buffer grade	839
Triethylammonium phosphate buffer pH 3.0 (1 M)	833	Trisodium phosphate see tri-Sodium phosphate dodecahydrate	749
Triethyl citrate pure Ph. Eur., NF	833	Tris phosphate see Tris dihydrogen phosphate Buffer grade	838
Trifluoroacetic acid	833	Tris-Phosphate-EDTA buffer see TPE buffer	824
Trifluoroacetic acid - Solution 25 %	833	Tris-Phosphate buffer pH 7.8 (1 M)	839
N-(ϵ -Trifluoroacetylcaproyloxy) succinimide ester see TFCS	810	Tris succinate Buffer grade	839
2,2,2-Trifluoro-N,O-bis-(trimethylsilyl)-acetamide see Bis-(trimethylsilyl)-trifluoroacetamide	147	Tris-Tricine-SDS buffers <i>BioChemica</i>	839
Trifoliin see Isoquercitrin	466	Triton® X-100	840
Trifolirhizin HPLC grade	834	Triton® X-100 - Solution 10 % peroxide-free	840
Trifolitin see Kaempferol	468	Triton® X-114 <i>BioChemica</i>	841
1,2,3-Trihydroxybenzene see Pyrogallol pure	678	Triton® X-114 - Solution 10 % peroxide-free	841
3,4,5-Trihydroxybenzoic acid propyl ester see n-Propyl gallate pure Ph. Eur.	670	tRNA see Ribonucleic acid from yeast	688
3 α ,7 α ,12 α -Trihydroxy-5 β -cholic acid see Cholic acid <i>BioChemica</i>	209		
3,4,5-Trihydroxy-1-cyclohexenecarboxylic acid see Shikimic acid pure	711		
4',5,7-Trihydroxyflavone see Apigenin	112		

rHu TRANCE see rHu RANKL
 Trometamol see Tris
 Tromethamine see Tris
 Tropaeoline see Methyl orange (C.I. 13025)
 Troponin I, human
 Troponin T, human
 TRX see Resiniferatoxin *BioChemica*
 Trypadine see Dimidium bromide *BioChemica*
 Trypan blue (C.I. 23850)
 Trypsin from bovine pancreas
 γ-irradiated Trypsin 1:250 from porcine pancreas
 Trypsin 1 : 250 from porcine pancreas
 AC-Trypsin - Solution Cell culture grade
 Trypsin inhibitor from soybean
 AC-Trypsin Inhibitor from Soybean (50X) Cell culture grade
 Trypsinogen
 Tryptamine
 Tryptone *BioChemica*
 Tryptone Soya Agar
 Tryptone Soya Broth
 L-Tryptophan
 Tryptose
 Tryptose Phosphate Broth
 TTBS (Tween® / Tris-buffered salt solution)
 Tth DNA Polymerase
 Tth PCR buffer (10X)
 TTZ see Tetrazolium red
 Tuerk's Reagent
 Tuliparin see Delphinidin-3-rutinoside HPLC grade
 recombinant Human Tumor Necrosis Factor-α see rHu TNF-α
 recombinant Human Tumor Necrosis Factor-β see rHu TNF-β
 bioconfident grade
 recombinant Mouse Tumor Necrosis Factor-α see rM TNF-α
 recombinant Rat Tumor Necrosis Factor-α see rR TNF-α
 Tunicamycin
 D(+)-Turannose *BioChemica*
 Turkey red oil
 Tween® 20
 Tween® 20 - Solution 10 % peroxide-free
 Tween® 80
 Tween® 80 - Solution 10 % peroxide-free
 L-Tyrosine
 L-Tyrosine disodium salt *BioChemica*

U

Ubiquinone-50 see Coenzyme Q₁₀ *BioChemica*
 UDP-Na₂ see Uridine 5'-diphosphoric acid disodium salt
BioChemica
 Ulexin see Cytisine HPLC grade
 Umckalin HPLC grade
 UMP-Na₂ see Uridine 5'-monophosphoric acid disodium salt
BioChemica
 2,4,7-Undecatrienal nitrosohydrazone see Triacsin C
BioChemica
 2E,4E,7E-Undecatriene-1-triazene see Triacsin C *BioChemica*
 n-Undecyl-β-D-maltoside
 Universal Indicator Strips see pH-Fix Indicator Strips
 Uracil *BioChemica*
 Uracil-DNA Glycosylase (UDG)
 Uracil-1-β-D-ribofuranoside see Uridine *BioChemica*
 Uranine AP (C.I. 45350)
 Urea (Pellets)
 Urea crystalline
 Urea - Solution 50 % see Acrylamide - Diluent for sequencing
 gels
 5-Ureidohydantoin see Allantoin *BioChemica*
 Uric acid *BioChemica*

682 Uridine *BioChemica*
 835 Uridine 5'-diphosphoric acid disodium salt *BioChemica*
 835 Uridine 5'-monophosphoric acid disodium salt *BioChemica*
 540 Uridine 5'-triphosphoric acid trisodium salt hydrate *BioChemica*
 841 Urobilinogen
 841 Ursolic acid HPLC grade
 684 UTP-Na₃ see Uridine 5'-triphosphoric acid trisodium salt
 288 hydrate *BioChemica*
 842

V

Valerenic acid HPLC grade 852
 L-Valine 852
 Valinomycin *BioChemica* 853
 Vancomycin hydrochloride 853
 6-Vanilloylcatalpol see Picrosid II HPLC grade 627
 recombinant Human Vascular Endothelial Growth Factor (121)
 see rHu VEGF (121) 854
 recombinant Human Vascular Endothelial Growth Factor 121
 see rHu VEGF-121 bioconfident grade 854
 recombinant mouse Vascular Endothelial Growth Factor-164
 see rM VEGF-164 bioconfident grade 854
 recombinant Human Vascular Endothelial Growth Factor (165)
 see rHu VEGF (165) 855
 recombinant Human Vascular Endothelial Growth Factor 165
 see rHu VEGF-165 bioconfident grade 854
 recombinant Mouse Vascular Endothelial Growth Factor (165)
 see rM VEGF (165) 855
 Vaseline oil see Paraffin oil 591
 Vaseline, white 853
 Vebascoside see Acteoside 66
 rHu VEGF-121 bioconfident grade 854
 rHu VEGF (121) 854
 rM VEGF-164 bioconfident grade 854
 rHu VEGF-165 bioconfident grade 854
 rHu VEGF (165) 855
 rM VEGF (165) 855
 rHu VEGF-A see rHu VEGF (121) 854
 Vermiculite Granulate 855
 Verruculogen *BioChemica* 855
 Vesuvlin see Bismarck brown Y (C.I. 21000) 147
 Vesuvlin R see Bismarck brown R (C.I. 21010) 146
 Violet Red Bile Glucose Agar Ph.Eur. 855
 Violet Red Bile Lactose Agar 856
 Vitamin A acetate 856
 Vitamin A acid see Retinoic acid pure Ph. Eur. 685
 Vitamin B see Nicotinic acid pure Ph. Eur., USP 567
 Vitamin B₁ hydrochloride see Thiamine hydrochloride 811
 Vitamin B₂ see Riboflavin 687
 Vitamin B₆ hydrochloride see Pyridoxin hydrochloride 678
 Vitamin B₉ see Folic acid crystalline 354
 Vitamin B₁₁ see Folic acid crystalline 354
 Vitamin B₁₂ 856
 Vitamin B₇ see L-Carnitine *BioChemica* 186
 Vitamin C see L-(+)-Ascorbic acid powdered 120
 Vitamin D₂ 856
 Vitamin E acetate see DL-α-Tocopherol acetate 821
 Vitamin E alcohol see DL-α-Tocopherol *BioChemica* 821
 Vitamin G see Riboflavin 687
 Vitamin H see D-(+)-Biotin 140
 Vitamin H₁ see 4-Aminobenzoic acid 86
 Vitamin K₃ see Menadiolone 528
 Vitamin PP see Nicotinamide pure Ph. Eur., USP 566
 Vitexicarpin see Casticin HPLC grade 187
 Vitexin HPLC grade 857
 Vitexin-2''-O-rhamnoside HPLC grade 857
 Vomitoxin see Deoxynivalenol *BioChemica* 266
 VRBL Agar see Violet Red Bile Lactose Agar 856

W

Washing buffer for immunoassays (detergent-free) see Immunoassay Buffer	446
Washing buffer for immunoassays (with detergent) see Immunoassay Buffer	446
Water	857
Water D ₂	859
Water Analysis Test Kits	859
Water bath disinfection see AppliClear-Water	114
Waterbath disinfection reagent see Aquabator-Clean™	117
Waymouth's MB 752/1 - Medium	865
Werramycin A see Nonactin <i>BioChemica</i>	576
Western blot Stripping buffer see Immunoassay Buffer	446
Western blot - Transfer buffer	865
William's Media E	865
Withaferin A <i>BioChemica</i>	866
Withaferin E see Withaferin A <i>BioChemica</i>	866
Wogonin-7-β-D-glucopyranosidouronate see Wogonosid HPLC grade	866
Wogonin HPLC grade	866
Wogonosid HPLC grade	866
Wortmannin <i>BioChemica</i>	867
Wright's Eosin-Methylene blue	867
Wright's Eosin-Methylene blue - Solution	867
WS1228A see Triacsin C <i>BioChemica</i>	828
WST-1 <i>BioChemica</i>	867
WST-3 <i>BioChemica</i>	868

X

Xanthine	868
Xanthohumol HPLC grade	868
Xanthophyll see Lutein pure	498
X-α-Gal <i>BioChemica</i>	868
X-Gal	868
X-Glc see X-Glu <i>BioChemica</i>	869
X-GlcA see X-Glucuro CHA salt <i>BioChemica</i>	869
X-Glu <i>BioChemica</i>	869
X-Gluc see X-Glucuro CHA salt <i>BioChemica</i>	869
X-Glucuro CHA salt <i>BioChemica</i>	869
X-Glucuro sodium salt trihydrate <i>BioChemica</i>	869
X-Phos disodium salt <i>BioChemica</i>	870
XLD Agar	870
X-Phos-pT see BCIP <i>BioChemica</i>	130
X-Phos p-toluidine salt see BCIP <i>BioChemica</i>	130
XTT sodium salt <i>BioChemica</i>	870
Xylenebrilliantcyanine see Coomassie® Brilliant blue R-250 (C.I. 42660)	242
Xylene - Mixture of isomeres	871
Xylene cyanol FF (C.I. 42135)	872
Xylene substitute see AppliClear (Xylene substitute)	114

<i>para</i> -Xylenol blue	872
<i>para</i> -Xylenol blue - Solution	872
Xylenol orange tetrasodium salt for metal titration	872
p-Xylenolsulfonephthalein see <i>para</i> -Xylenol blue	872
Xylite see Xylitol pure Ph. Eur.	873
Xylitol pure Ph. Eur.	873
D(+)-Xylose <i>BioChemica</i>	873

Y

Yeast extract	873
Yeast Extract Agar	873
Yeast extract Broth	874
Y-Gal see Rose-Gal <i>BioChemica</i>	691
Y-Glucuro see Rose-Glucuro CHA salt <i>BioChemica</i>	692
Y-Phos see Rose-Phos p-toluidine salt <i>BioChemica</i>	692
YT-Medium - Powder (2X)	874

Z

Zearalenone <i>BioChemica</i>	874
Zeaxanthine	874
Zeolithe see Molecular sieves	548
Z-FG-NHO-Bz see Cathepsin Inhibitor I	188
Z-FG-NHO-Bz-ME see Cathepsin Inhibitor II	189
Z-FG-NHO-Bz-OME see Cathepsin Inhibitor III	189
Z-Gly-Phe-NHO-Bz	874
Ziehl-Neelsen - Solution	875
Zinc acetate dihydrate	875
Zinc carbonate basic see Zinc hydroxide carbonate pure	876
Zinc chloride	875
Zinc citrate dihydrate pure	876
Zinc hydroxide carbonate pure	876
Zinc nitrate hexahydrate pure	876
Zinc nitrate - Solution 10 % p. A.	876
Zinc oxide	876
Zinc stearate	877
Zinc sulfate heptahydrate	877
Zinc sulfate - Standard volumetric solutions	878
ZnCl ₂ see Zinc chloride	875
Zn(NO ₃) ₂ · 6H ₂ O see Zinc nitrate hexahydrate pure	876
ZnO see Zinc oxide	876
ZnSO ₄ · 7H ₂ O see Zinc sulfate heptahydrate	877
Z-Phe-Gly-NHO-Bz see Cathepsin Inhibitor I	188
Z-Phe-Gly-NHO-Bz-p-CH ₃ see Cathepsin Inhibitor II	189
Z-Phe-Gly-NHO-Bz-p-OCH ₃ see Cathepsin Inhibitor III	189
Z-Val-Phe-al see Calpain Inhibitor III	183
Zwittergent 3-12 see Sulfobetaine SB 12	778
Zygomycin see Paromomycin sulfate <i>BioChemica</i>	592
Zygosporin A see Cytochalasins	257
Cell Culture Powder Media	879

I General information – Scope – Warning

- Deliveries and performance from AppliChem shall be executed solely in accordance with the following standard terms of contract. These standard terms of contract shall apply to transactions conducted with businessmen and entrepreneurs in compliance with § 14 BGB (Federal Statutes at Large). These standard terms of contract shall apply to all future transactions between the partners to the agreement, without specialised further reference. They shall also apply to future agreements even if AppliChem does not explicitly quote the terms, in particular when AppliChem having knowledge of alternative terms of purchase or of terms deviating from the standard terms of contract of the customers deliveries or performance. You have already been notified of the standard terms of contract by means of our standard forms as well as via e-mail messages and publications in the Internet. The scope of application of these standard terms of contract shall also be valid in all supplier countries in which German legislation is applicable or has been effectively stipulated. **AppliChem products are exclusively designed for application within the research and laboratory sector and may not be used in connection with persons, animals, in households or in other forms of private use.** The application of the products in diagnostic or therapeutic sector is governed by the appropriate relevant statutory regulations. **The resale of AppliChem products to private individuals is not permitted.** AppliChem shall not be liable for damage to objects or injury to persons caused by improper application, treatment or storage. We draw special attention to the regulations stated in Sections VII. to IX. **Some of the AppliChem products are extremely toxic and hazardous** and are therefore designated as such in compliance with the statutory regulations. An omission of safety hazard warnings on the labels of AppliChem products does not mean that the respective product is harmless. AppliChem also draws special attention to the regulations defined in Sections VII. to IX. **AppliChem has the intent to supply solely to commercial enterprises, public research-, analytical laboratories and educational facilities.** Customers who do not belong to this specified clientele shall be obliged to provide AppliChem with information pertaining to the status and/or business operations of their company res. person on establishment of contact res. placement of order. If the relevant information is not furnished, AppliChem shall be exempted from any liability resulting thereof. AppliChem shall be entitled to reject orders if there is a possibility that their products may be used in an unauthorized manner.

II Tenders and Conclusion of Agreement – Performance

- AppliChem tenders to the prospective customer shall be subject to confirmation. The placing of an order by the customer shall be binding. The acceptance of the order will follow within four (4) weeks by means of the dispatching of a confirmation of order or an unconditional execution of the consigned deliveries or performance. The technical data and descriptions in the respective product information or advertising material from AppliChem shall not present a guarantee for the quality or durability of goods or performance delivered or supplied by AppliChem. Warranties will not be furnished unless these have been explicitly agreed upon in separate contracts. In connection with the above mentioned Paragraph 2 AppliChem draws the attention in particular to the fact that AppliChem gives all information related to the origin, state, nature, condition, quality and the manufacturing process of the primary product and merchandises to its best knowledge. In this context, AppliChem is mostly depending and relying on the information, promises, assurances, confirmations and certificates provided by its suppliers. AppliChem at its stage of production is not able to conduct extensive product testing with all products. As for these reasons it is not possible to trace back in every single case, AppliChem denies all liability in that respect. In the case of sales in accordance with samples or specimens, this shall merely describe the professional compliance with the sample or specimen, but shall not be a guarantee for the composition or durability of the goods to be delivered by AppliChem or the performance to be executed.

III Prices – Terms of payment – Default of payment

- The prices determined by the conclusion of the respective agreement, in particular the prices defined in the order form res. the confirmation of order in EURO should be valid. If a price is not explicitly defined the prices, which are valid at the time when the agreement is concluded in accordance with the current AppliChem price list should be valid. The statutory value-added tax valid on the day of delivery shall be added to the defined prices. The products shall be delivered ex factory. The prices shall include the costs for the packaging required for the regular shipment of the goods together with the reimbursement for the disposal of the sales-, and transport packaging. The prices do not include the transport costs or the costs for a transport insurance policy, if this has not been previously agreed upon. The terms of packaging and transport must be concluded separately for goods to be delivered abroad. AppliChem shall reserve the right to modify prices in a reasonable manner if alterations in costs due to wage settlements, price increases of suppliers or fluctuations in the monetary exchange rates should arise after the conclusion of the agreement. Invoices received from AppliChem must be paid within ten days from receipt of the invoice minus two (2) percent discount, if no other terms have been concluded. The customer shall be in default of payment after the expiry of the settlement date stated in the invoice in compliance with § 286 Section 2 No. 2 BGB (Federal Statutes at Large). Default interest in compliance with § 288 BGB (Federal Statutes at Large) will be calculated from the day of expiry of the settlement date with reservation to assertion of further claims. The customer may only exercise the option of offsetting or retention if his counter-claims have been legally justified and AppliChem have neither recognized nor disputed the claims within two (2) weeks of notification. If the customer should not pay invoices due, when

the term of credit has expired, or when the financial circumstances of the customer should deteriorate following the conclusion of the agreement or when AppliChem should receive unfavourable information pertaining to the customer which query the solvency of the customer, AppliChem shall be justified in taking measures to procure the entire residual amount from the customer and via an amendment of the terms concluded advance payment or collateral security or immediate settlement of all its claims in the case of executed performance which are based upon this legal relationship. This shall apply, in particular, if the customer does not meet his payments, or a cheque from the customer is dishonoured, a bill of draft furnished by the customer should not be redeemed, a bankruptcy process relating to the assets of the customer has been petitioned or initiated or when insolvency proceedings have not been initiated due to insufficient assets.

IV Time of delivery and performance – Default

- Determined delivery schedules shall possess only an approximate validity if a fixed delivery date has not been concluded in writing. However, when AppliChem has exceeded determined delivery schedules due to justifiable circumstances, the customer shall have the option to withdraw from the agreement after an additional respite following the fruitless expiry of a reasonable period defined by the customer. The withdrawal from the agreement must be furnished in writing. AppliChem shall only be in default following the expiry of the reasonable additional respite of time. In cases of Force Majeure (Act of God) and other unforeseeable, extraordinary circumstances, which cannot be influenced by AppliChem such as e.g. disturbance in operation as a result of fire, water and similar circumstances, breakdown of production systems and machinery, exceeding the term of delivery or failure to deliver on the part of suppliers together with interruptions in operation due to a shortage of raw materials, energy or working force, strikes, shut-out, problems with the acquisition of transport, traffic disturbance, official administrative measures, AppliChem – as far as AppliChem is hindered to fulfil its obligations not due to its own fault – shall be entitled to postpone delivery or performance until the extraordinary circumstances have been alleviated and shall be granted a reasonable respite. If delivery or performance should be delayed by more than one month hereby, both AppliChem as well as the customer shall be entitled to furnish written notice of withdrawal from the agreement under the ruling out of claims to indemnification with regard to the bulk amount influenced by the disturbance in delivery. In every case of default the liability of AppliChem to pay compensation is limited by the stipulation of the regulations in Section VIII No. 1 to 6. AppliChem is entitled to furnish partial deliveries or performance within the scope of the agreed terms of delivery and performance if this is acceptable to the customer.

V Passing of risk – Handling of packaging

- Risk and costs shall pass to the customer upon shipment in as far as no deviating provisions have been defined. The risk of accidental perishing, loss or destruction and of incidental deterioration of the object of delivery passes to the customer on surrender of the consignment to the haulage company (even in case of deliveries which have been insured against transport damage by AppliChem). Packaging and containers may not be used for other purposes or for storage of other products. They are exclusively determined for the transport of goods delivered by AppliChem. Labels may not be removed. AppliChem will not take one-way packaging back. The customer must dispose of this packaging in the authorized manner. In particular it must be ensured that emptied containers must not be employed for the storage of other materials. The disposal costs have been calculated into our prices by means of a corresponding compensation (Section III. Paragraph 2., Regulation 2). If another deviating provision has been concluded, AppliChem shall inform the customer of a third party who will accept the packaging in accordance with the statutory legislation pertaining to packaging disposal in return for reasonable remuneration.

VI Customer obligations – Reservation of title

- AppliChem shall retain title to the delivered products until the entire payment of the purchase price and all pending additional, current or future demands resulting from business relations with the customer has been settled. The settlement of the purchase price in an outstanding invoice and the acceptance of the balance shall not affect the reservation of title. The customer shall be obliged to treat the purchased goods carefully, in particular he shall be obliged to insure the goods at purchase price against loss and damage and destruction, e.g. against damage caused by fire, water and theft at his own costs. The customer shall cede his claims resulting from the insurance policies to AppliChem at once. AppliChem shall accept the assignment of the claims herewith. The customer may neither pledge nor give as a security the goods for which AppliChem has the reservation of title. However, he shall be entitled to sell the delivered goods within the scope of a correct business transaction in accordance with the following terms. The previously mentioned justification shall not hold in as far as the customer transfers or pledges claims against his contractual partner, resulting from the resale of the goods, to a third party or has concluded an effective prohibition of assignment in advance. The customer shall immediately assign to AppliChem all – including future and contingent – accounts receivable to be acquired from a resale of the goods delivered by AppliChem for the securing of the fulfilment of claims dealt with in Section VI No. 1 together with all ancillary rights at a sum of 110% gross of the value of the delivered goods which will take precedence over the residual sum of his accounts receivable. AppliChem shall accept the assignment herewith. As long as and as far as the customer settles his payment obligations to AppliChem, he shall be entitled to the collection of claims assigned to AppliChem within the scope of the regular management. However, he shall not be entitled to conclude an accounts correct agreement or prohibition of assignment with his customers in

relation to these claims or to transfer or pledge these to third parties. If in opposition to regulation 2 a accounts current agreement should exist between the customer and the purchaser of AppliChem's reservation goods, the previously assigned claim shall also relate to the accepted balance as well as to the existing balance in the case of insolvency of the purchaser. On demand by AppliChem the customer shall be required to establish the accounts receivable which he has assigned to AppliChem separately and to notify his debtors of the assignment with the request to pay all outstanding invoices to AppliChem up to the value of the claims to the customer. AppliChem shall be entitled to notify the debtors of this arrangement at any time and to collect the claims, if necessary. However AppliChem will only make use of this authorization if the customer fails to meet his financial obligations or is in default, or when an insolvency process has been initiated against the customer, or the customer ceases to pay the invoices. If one of the aforementioned cases should arise, AppliChem can demand that the customer notifies AppliChem of the assigned claims and the debtors thereof in detail and furnishes all relevant information pertaining to the collection of the accounts receivable and hands over the respective documents. In case of seizures or any other interference of third parties, the customer shall immediately (without undue delay) inform AppliChem in writing in order to enable AppliChem to react in an appropriate manner and, if necessary, to bring an action according to § 771 Code of Civil Procedure. AppliChem shall be obliged to release all securities furnished by the customer, if he required, in the event when realisable value of the securities should exceed AppliChem's account receivables from the customer by more than twenty percent (20%). In the case of customer behaviour which is contrary to the terms of the agreement, in particular in case of default of payment exceeding ten percent (10%) of the balance due for a not insignificant period of time, AppliChem – irrespective of further outstanding or pending (compensation) claims – shall be entitled to withdraw from the agreement and demand return of the goods delivered. AppliChem shall be authorized to reprocess the returned goods in the required manner. The profits resulting from the reprocessing of the goods must be credited to the outstanding accounts payable to AppliChem by the customer – minus the appropriate reprocessing expenses.

VII Duties on receiving of incoming goods – Rights of customer in case of non-conformity

- The customer is obliged to subject the delivered goods to the customary receiving control on receiving. He must apply the care of a regular businessman in the course of such inspections. Obvious defects, delivery of the wrong goods, and deviation in quantity should be reported to AppliChem by the customer immediately (without undue delay), or must be reported in writing within seven (7) days, at the latest from the receiving of the goods. Concealed defects must be reported to AppliChem in writing within a period of eight (8) days following the discovery of the non-conformity. Notice of concealed defects of quality or quantity shall be excluded and shall be deemed belated after three (3) months beginning with the passing of the risk to the customer according to Section V No. 1, as far as the concealed defects were reasonably recognizable. In case of a belated or not appropriate notice of defect according to Section VII, the customer shall lose all rights to indemnification, except if the defect was fraudulently concealed by AppliChem. In the case of non-conformity in goods supplied by AppliChem, AppliChem shall only be obliged to rework the goods or deliver of goods free from defects (subsequent fulfilment of contractual obligations). If AppliChem is not prepared to carry out reworking or is not in a position to carry out these measures, in particular due to the fact that the period required for these measures could be prolonged for reasons for which AppliChem is responsible or if the reworking or fulfilment of the obligations should not succeed for other reasons, the customer shall be entitled to withdraw from the contract or to demand a reduction of the purchase price. A reworking measure shall be deemed to have failed following the third unsuccessful attempt, if no other measures have been determined due to the nature of the measures. If the customer has incurred damage or suffered from futile expenditures resulting from non-conformity in goods delivered by AppliChem, the liability of AppliChem in this instance is defined in Section VII No. 1, Section VIII No. 1 to 6 and Section IX.

VIII Rights and obligations of AppliChem

- A liability on the part of AppliChem for damages or futile expenditures – irrespective of the legal basis – shall only arise in the case where the damage or the futile expenditure have been caused by AppliChem or by one of their authorized personnel or subcontractors by means of culpable violation of a significant contractual obligation or due to a grossly negligent or intentional violation of obligations on the part of AppliChem or one of their subcontractors. In compliance with Section VIII No. 1 Letter a) and b) AppliChem shall not be liable for damage or futile expenditures, which have been caused by consulting measures or information provided which were not settled separately, but solely in case of intentional or grossly negligent breach of obligations, in as far as the breach of duties has not led to material defect according to § 434 BGB of the goods delivered by AppliChem. If AppliChem should be liable for the violation of a fundamental contractual duty in compliance with Section VIII No. 1 letter a), without evidence of gross negligence or intent, the liability to compensation shall be limited to the foreseeable and typically arising damage. In this case AppliChem shall not be held liable for loss of profit to the customer and also not for unforeseeable consequential damages. The previously mentioned limitations in accordance with regulations 1 and 2 are equally applicable for damages resulting from gross negligence or intent on the part of AppliChem personnel or authorized persons. AppliChem shall not be liable for consequential loss of the customer, which is due to the customer due to assertion of a claim to contract penalties of a third party. If AppliChem shall be liable for the infringement

of a fundamental contractual obligation in compliance with Section VIII No. 1 letter a), without evidence of gross negligence or intent, their liability is limited to the sum of 1,0 Mio. Euro per event of damage. AppliChem shall be obliged to conclude and maintain an insurance policy to cover claims of at least 1.5 million Euros – maximized in duplicate in the policy year. The liability limitations mentioned in Section VIII No. 1 to 3 shall not apply if AppliChem's liability is conclusive in compliance with the regulations contained in the Product Liability Law, or when claims have been raised due to loss of life, injury to body or health, or when AppliChem has furnished a warranty; AppliChem shall only be liable for such damage which is covered by the warranty. An extended liability to the payment of compensation other than defined in Section VIII No. 1 to 4, is excluded, irrespective of the nature of the valid claims. This especially applies to damage claims resulting from negligence in the course of conclusion of the agreement in compliance with § 311 Section 3 BGB, positive violation of contractual duty in compliance with § 280 BGB or due to claims in tort in compliance with § 823 BGB. In as far as the liability for damages is excluded or limited in compliance with Section VIII No. 1 to 5, this shall also apply in relation to the personal liability for damages of the staff, personnel, colleagues, representatives and subcontractors as well as vicarious agents employed or engaged by AppliChem.

IX Limitation of claims

- Customer claims pertaining to defects in goods delivered by AppliChem or relating to unauthorized performance on the part of AppliChem – including claims for compensation and claims to replacement of futile expenditure – shall be limited to a period of two (2) years from the beginning of the statutory limitation period, in as far as no other provisions have been defined in the following Section IX No. 2 and 3. If AppliChem has provided incorrect consulting that is not invoiced separately (1) either without delivering goods in connection with the incorrect consulting or (2) without the incorrect consulting creating a defect of the goods delivered in connection with the incorrect consulting (§ 434 BGB), the respective claims of the customer shall be subject to a limitation period of one year from the beginning of the statutory limitation period. Claims raised by the customer against AppliChem resulting from the violation of contractual, pre-contractual or statutory obligations pertaining to substances delivered by AppliChem which do not exhibit non-conformity in compliance with § 434 BGB shall also be subject to a limitation period of one year from the beginning of the statutory limitation period. In as far as the afore mentioned breach of duties is responsible for non-conformity in products delivered by AppliChem in compliance with § 434 BGB in connection with consulting or advice, claims dealt with shall be subject to the same statutory period of limitation as contained in Number 1 above. The provisions covered by sections 1 and 2 shall not apply to the limitation of claims resulting from loss of life, injuries to body and health as well as the limitation of claims in compliance with the legislation pertaining to product liability. Furthermore, they shall not apply to the limitation of claims submitted by AppliChem's customers made on the basis that non-conformity in substances delivered by AppliChem has been fraudulently concealed or a contractual obligation has been intentionally or in cases of gross negligence hat. The statutory term of limitation shall apply to limitation in the case of any of these aforementioned cases.

X Assignment and Transfer of Claims

- Contractual obligations of AppliChem or claims raised against AppliChem, in particular resulting from non-conformity in products delivered by AppliChem or from the breach of contractual duties on the part of the AppliChem may not be completely or partially transferred or pledged to third parties without the explicit written agreement of AppliChem; § 354 a of the Handelsgesetzbuch (Code of Commercial Law) shall be untouched by these measures.

XI Place of performance – Place of jurisdiction – Applicable law – Trade stipulations

- Place of performance and sole place of jurisdiction for all claims between AppliChem and business or legal entities of a statutory company or where statutory fund assets are involved is Darmstadt; in as far as there are no mandatory statutory regulations in contradiction to these measures. However, AppliChem shall also have the right to initiate legal proceedings against a customer in the District Court at the place of jurisdiction of the customer. Exclusively the legislation of the Federal Republic of Germany shall apply to the legal relations between AppliChem and the customer, as is customary between German businessmen and which can be effectively agreed upon within the respective supplier countries (see Section I of these terms of sales). The application of regulations pertaining to the Unified international Purchase Laws (CISG – UN Purchase Law) and the German Private Law is explicitly excluded. In as far as trade stipulations in compliance with International Commercial Terms (INCOTERMS) have been concluded, the latest edition of the INCOTERMS shall be valid (currently INCOTERMS 2000).

XII Final provisions

- Should one of the above mentioned provisions be invalid, partially invalid or excluded by a special agreement, this shall hereby not affect the validity of the remaining provisions. AppliChem will store the data of its customers within the scope of the mutual business relations in accordance with the legislation of the Federal Republic of Germany relating to data protection.



CATALOG.WO

44 Mathies + Traut - Darmstadt



AppliChem

There is another top address in Darmstadt:

AppliChem GmbH . Ottoweg 4 D - 64291 Darmstadt Telefon +49 6151 9357-0 Fax +49 6151 9357-11
eMail service@de.applichem.com internet www.applichem.com