Kikkoman Lumitester® PD-30
&
LuciPac Pen

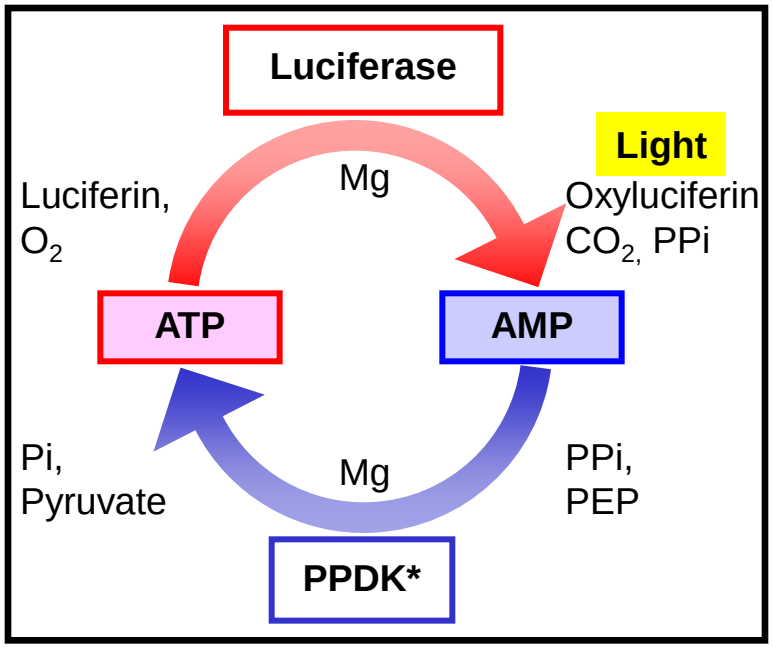
Kikkoman Lumitester® PD-20
&
LuciPac Pen

Kikkoman Lumitester® PD-10N
&
LuciPac W

Note : Lumitester PD-30 & LuciPac Pen, Lumitester PD-20 & LuciPac Pen shows equivalent measurement RLU value as that of Lumitester PD-10 & LuciPac W.

Unique ATP +AMP hygiene monitoring system

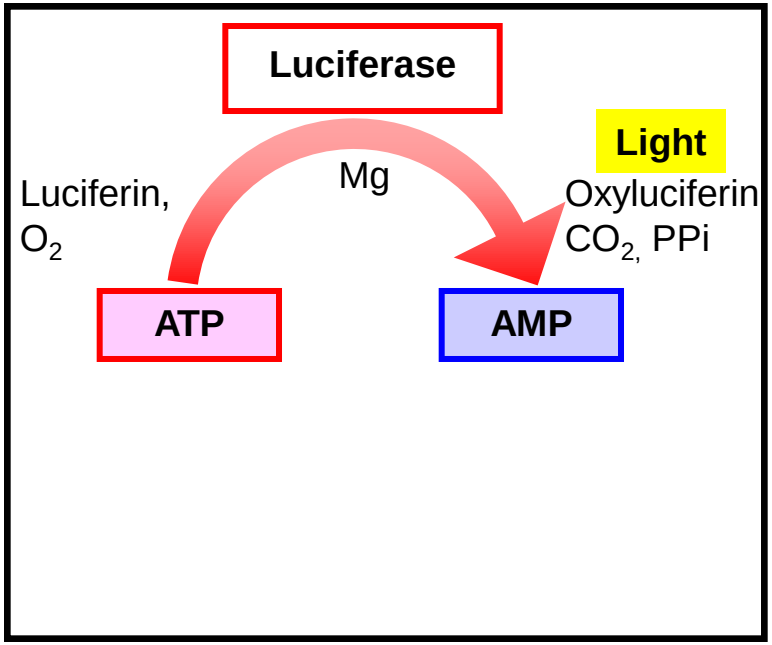
ATP + AMP



PPDK* : pyruvate orthophosphate dikinase

LuciPac Pen & W

Only ATP



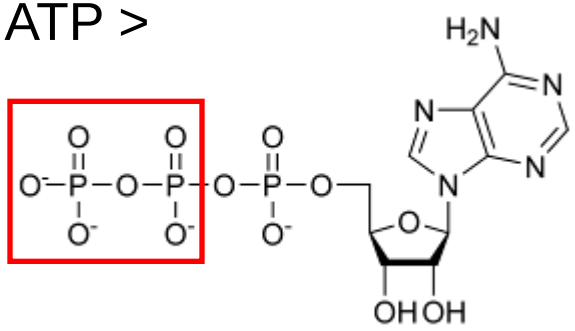
Other devices

U.S. Patent 5,891,659

ATP + AMP Measuring

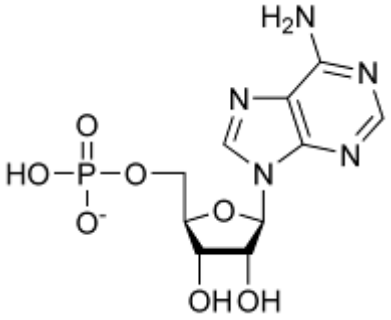
Only one device for AMP detection

< ATP >



ATP is essential for all organisms to live

< AMP >



AMP exists in organisms universally too

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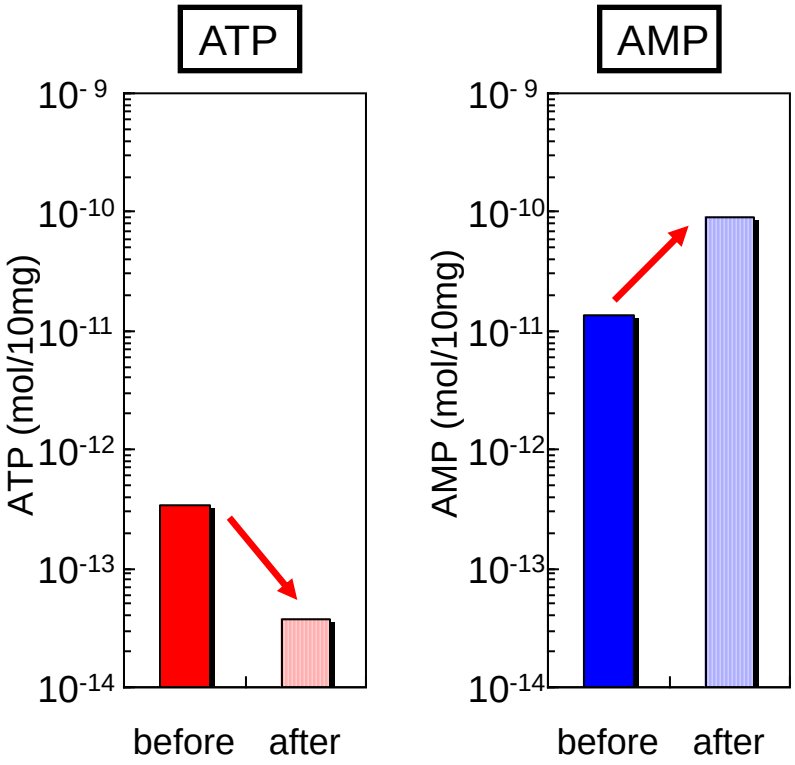
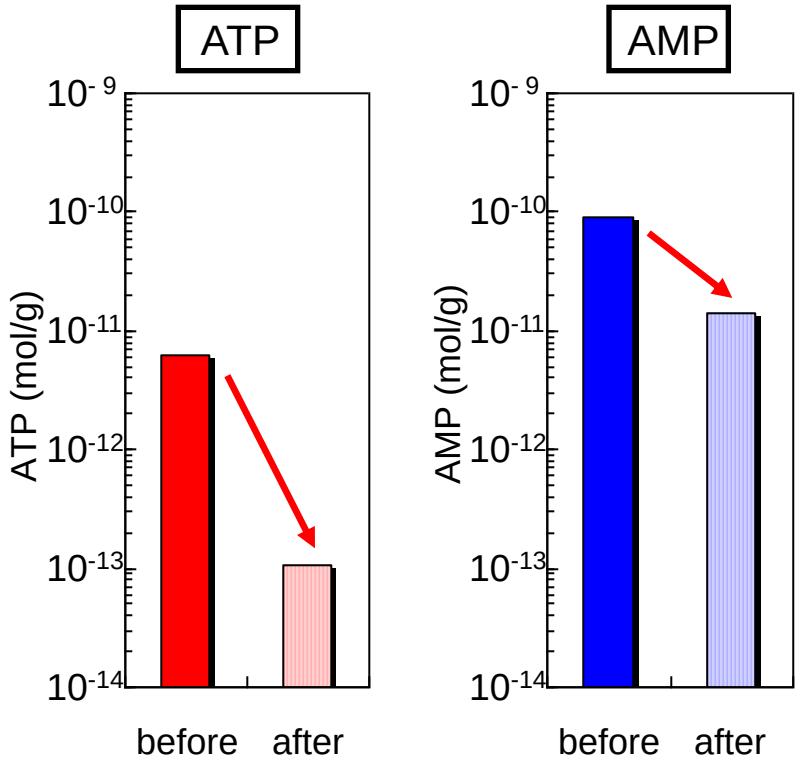
Degradation of ATP and AMP

Stir-fried ground beef for 5 minutes



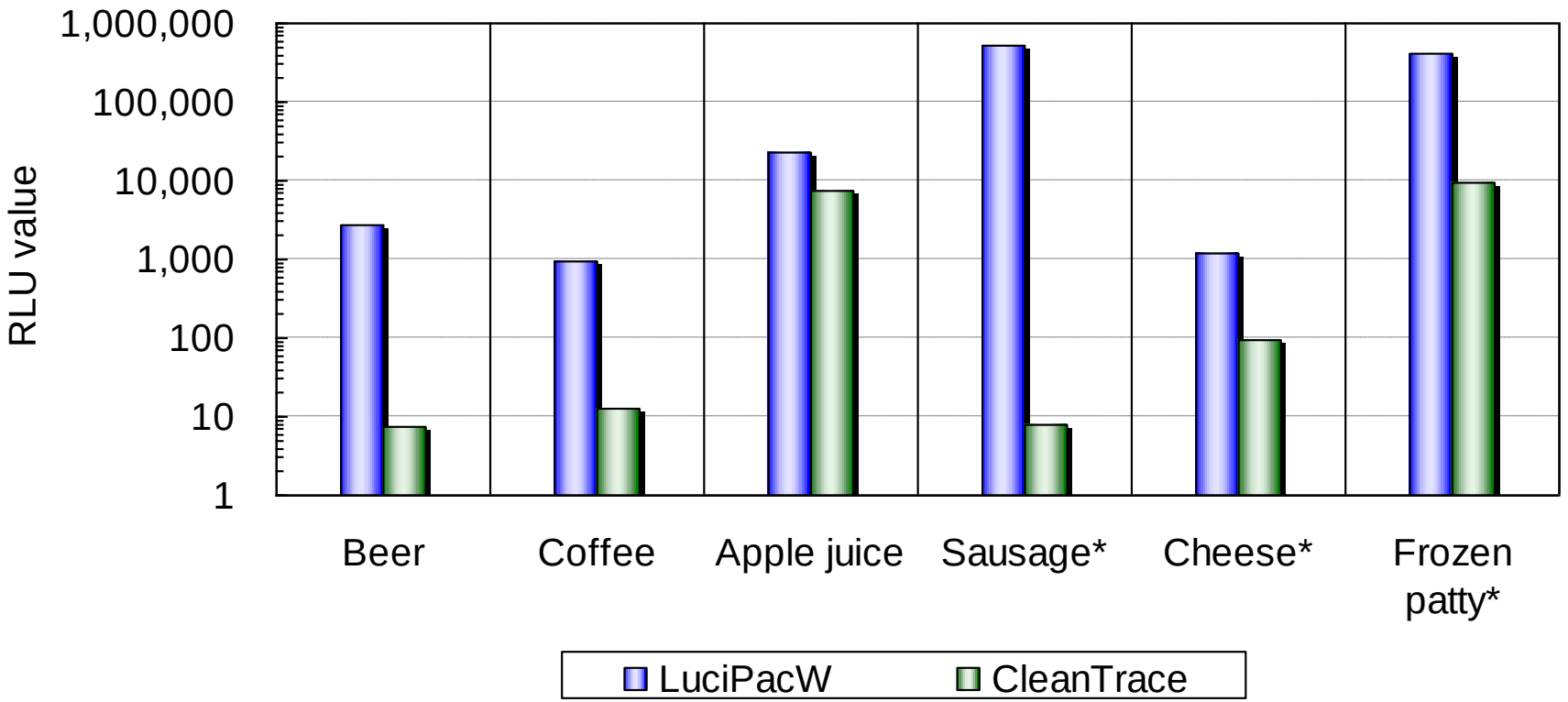
Left grated potato for 2 hours



AMP is more stable than ATP

Example of comparison PD-10N & LuciPac W and other ATP system

Food & Beverage



* 20 microL of 10% homogenate with PBS

LuciPacW shows 10 to 100,000 times higher sensitivity

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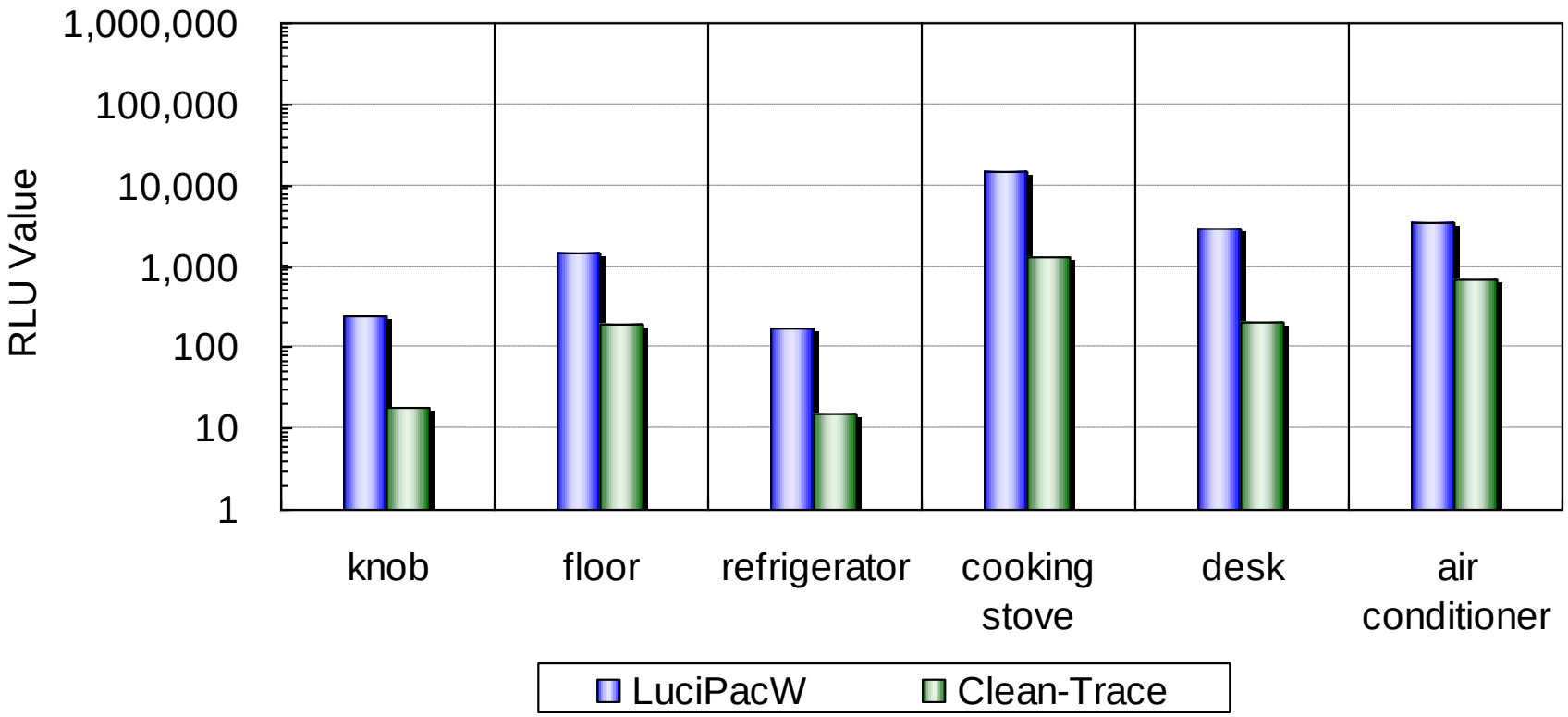
Non-Food



LuciPacW shows 5 to 15 times higher sensitivity

ATP+AMP Detection is powerful marketing tool

Testing products focused more on AMP detectable food especially heat processed and brewed products:

- Breweries, especially for Beer
- Processed meats
  (Sausages,ham and raw meats)
- Frozen seafood
- Grain and cooked noodles (made from flour)
- Beverages: Coffee, Oolong tea, Vegetable juice

Reliability of Kikkoman Lumitester Compared with other systems

Hygiene Monitoring Devices

LuciPac Pen & W (KIKKOMAN)

Meas. : **ATP +AMP**
Reagent : Freeze dry
Storage : 2-8 ºC

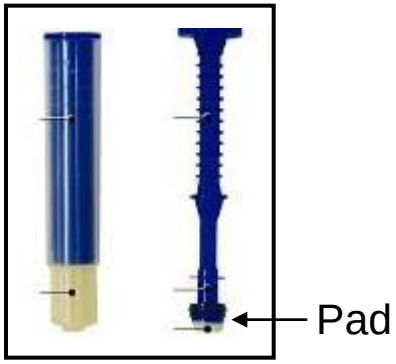
ULTRASNAP (Hygiena)

Meas. : ATP
Reagent : Liquid
Storage : 2-8 ºC

CleanTrace (BIOTRACE / 3M)

Meas. : ATP
Reagent : Liquid
Storage : 2-8 ºC

AccuPoint (NEOGEN)



Meas. : ATP
Reagent : Freeze dry
Storage : 2-8 ºC

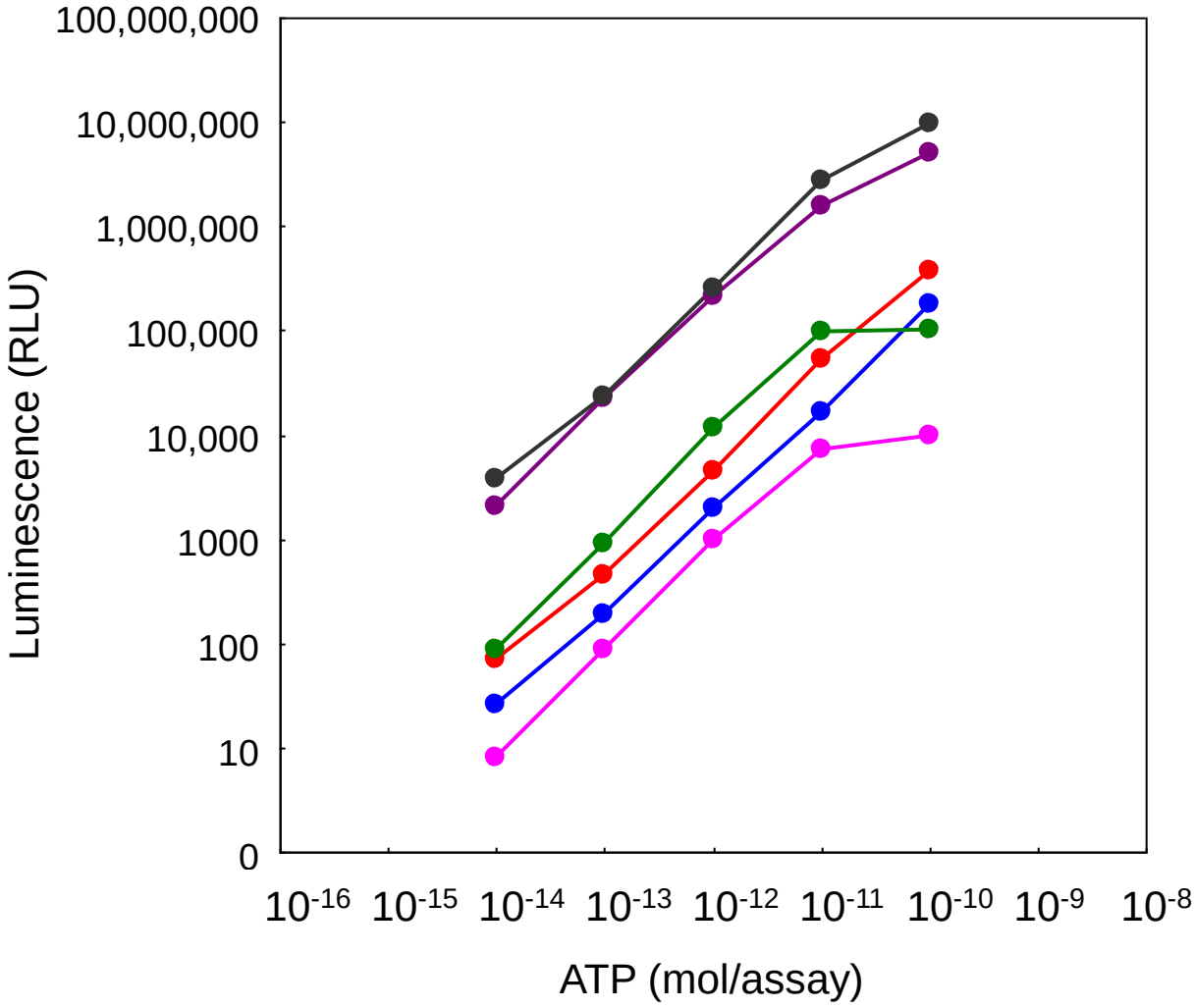
PocketSwab (CHARM)

Meas. : ATP
Reagent : Freeze dry
Storage : 2-25 ºC

MVP Devices (BIOCONTROL)

Meas. : ATP
Reagent : Freeze dry
Storage : 2-30 ºC

Standard Curve



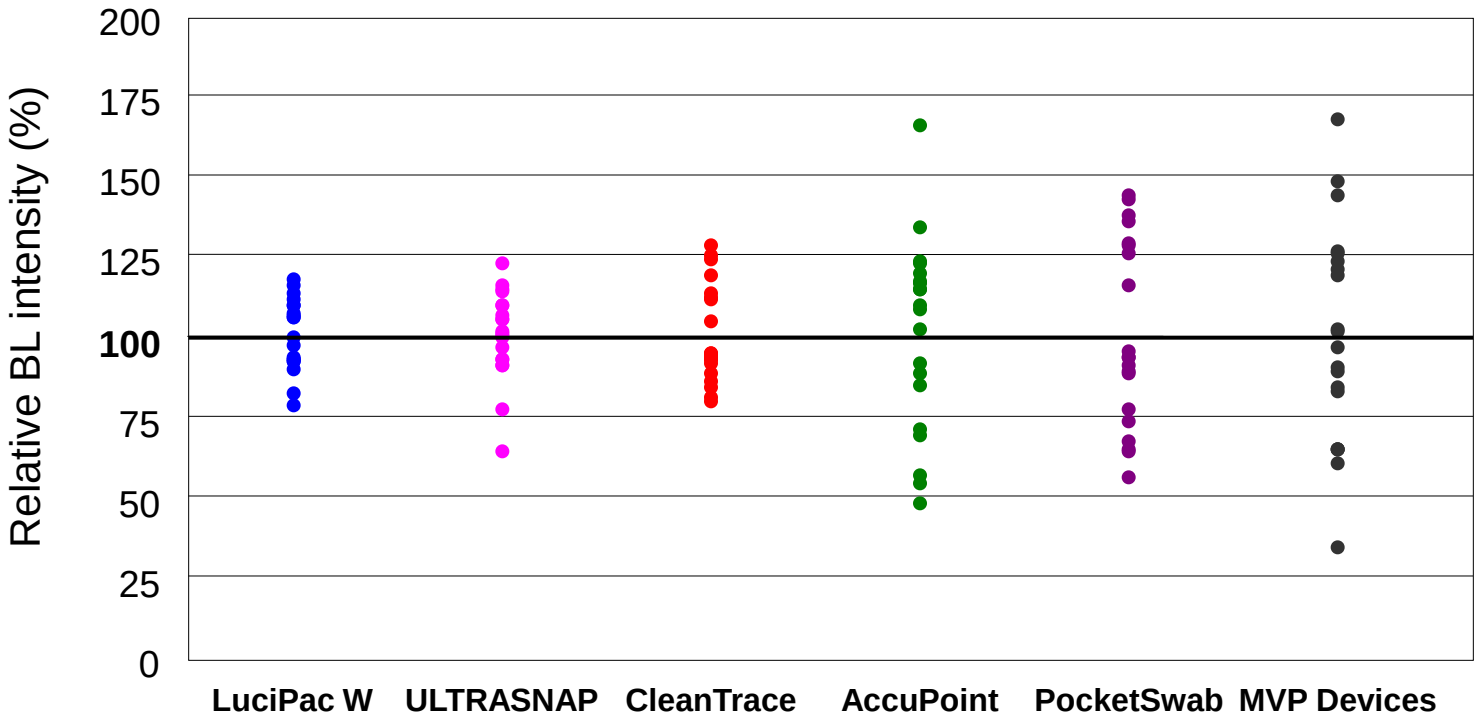
Difference of Luminescence Intensity

	ATP 10^{-12}mol/assay (RLU)
LuciPac W	1,980
ULTRASNAP	973
CleanTrace	4,507
AccuPoint	11,707
PocketSwab	214,486
MVP Devices	258,059

LuciPac W has wider range of linearity

Reproducibility

(N = 20)

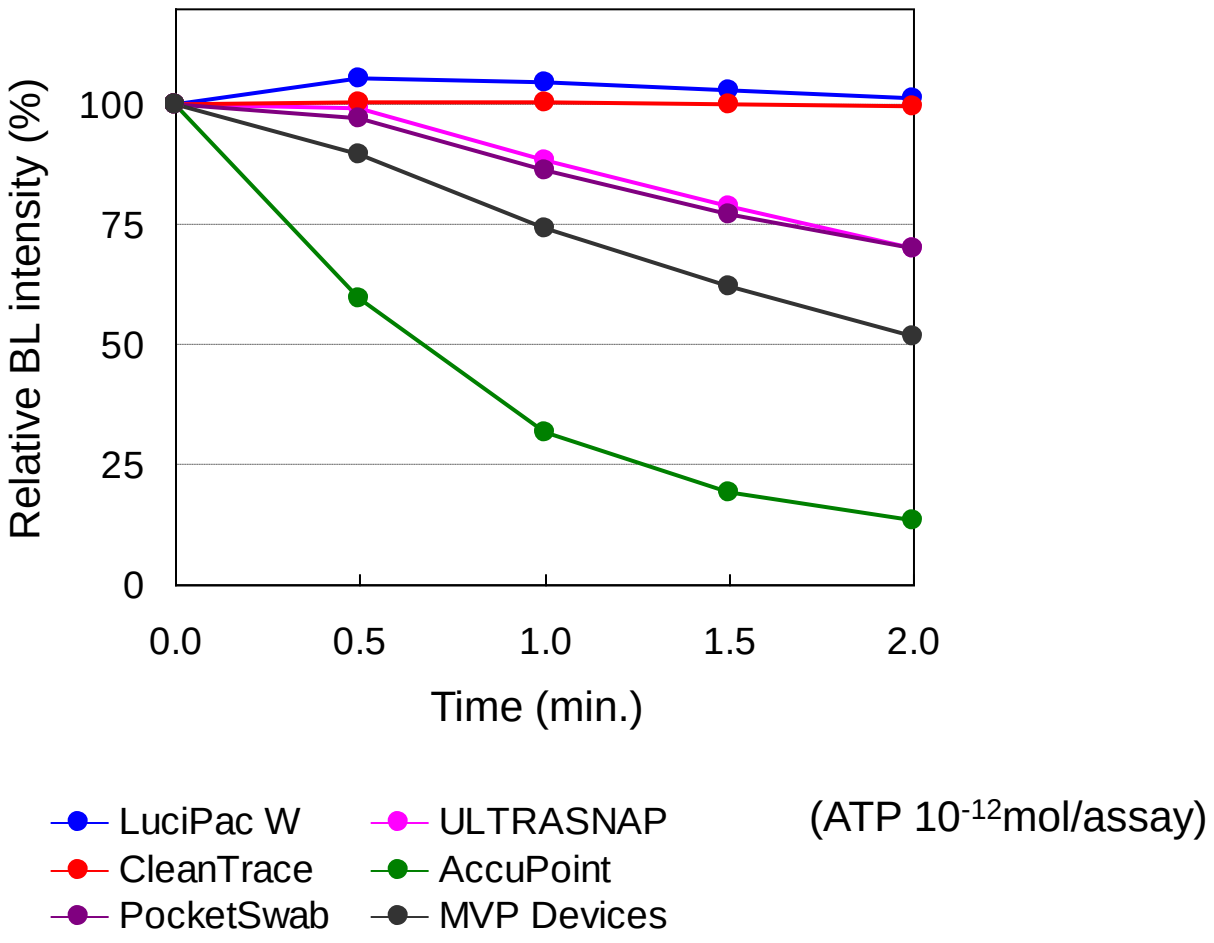


	LuciPac W	ULTRASNAP	CleanTrace	AccuPoint	PocketSwab	MVP Devices
CV value	11%	14%	15%	30%	29%	34%

(ATP 10^{-12}mol/assay)
(as a percentage of average BL intensity)

LuciPac W has higher reproducibility

Luminescence Stability



LuciPac W has higher luminescence stability