



**Kikkoman Lumitester® PD-20
&
LuciPac Pen**

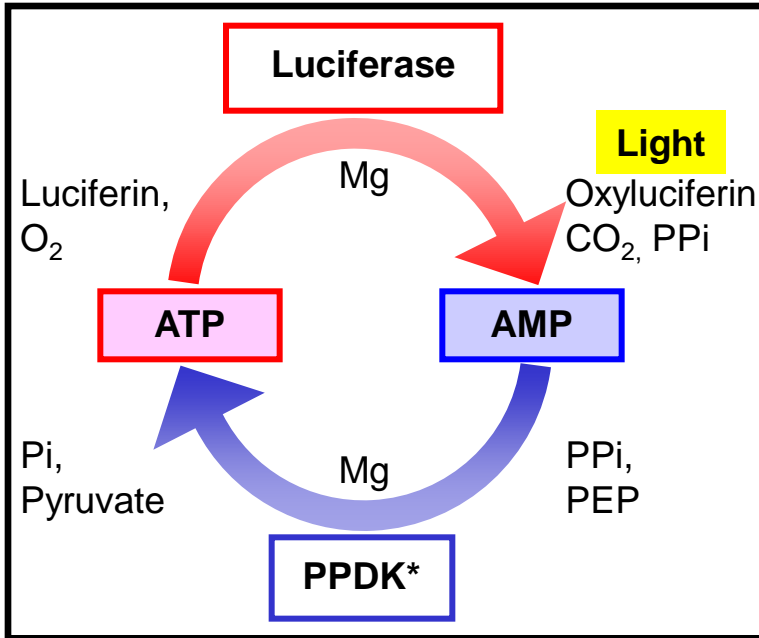


**Kikkoman Lumitester® PD-10N
&
LuciPac W**

(no longer available)

Unique ATP + AMP hygiene monitoring system

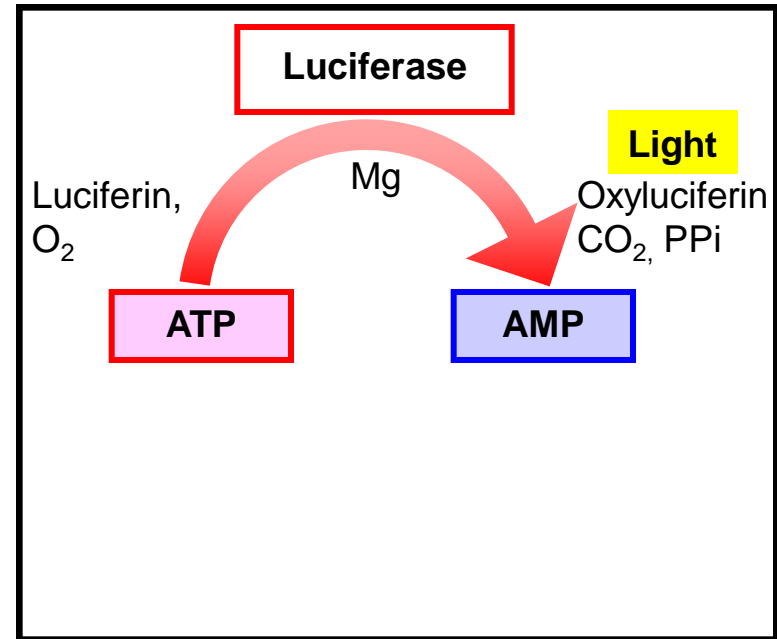
ATP + AMP



PPDK* : pyruvate orthophosphate dikinase

LuciPac Pen & W

Only ATP

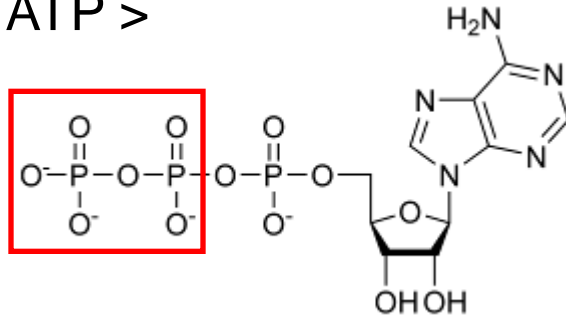


Other devices

ATP + AMP Measuring

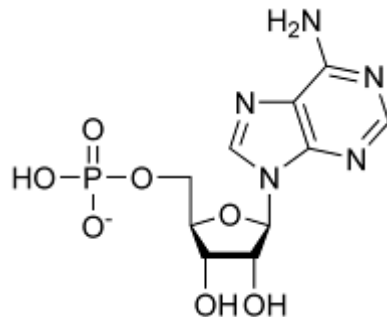
Only one device for AMP detection

< ATP >



ATP is essential for all organisms to live

< AMP >

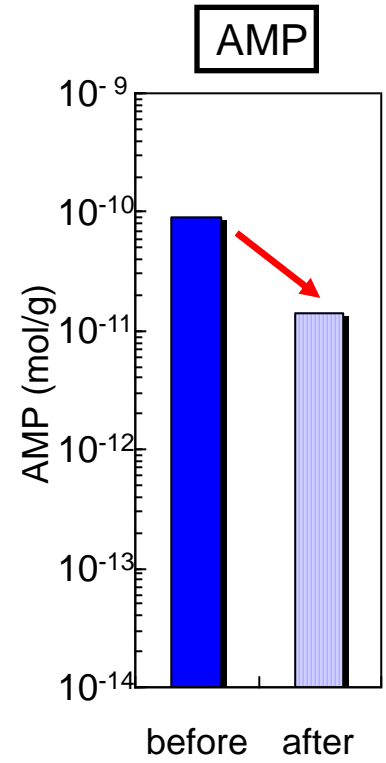
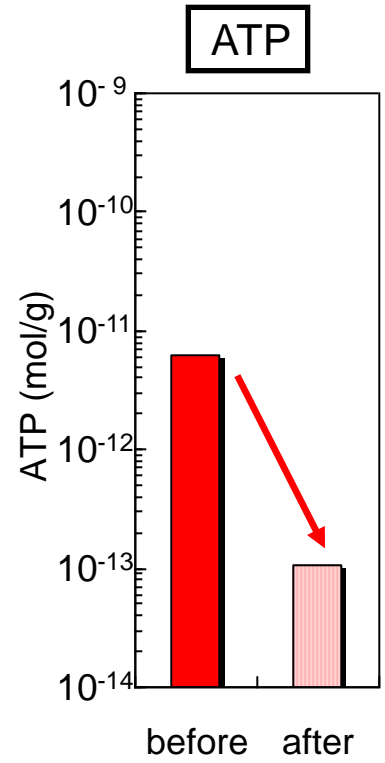
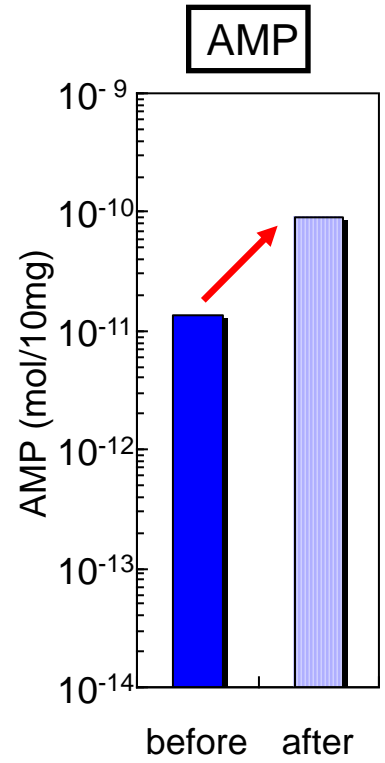
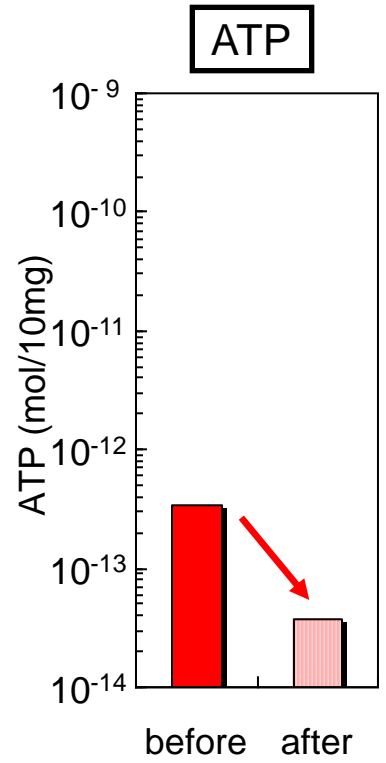


AMP exists in organisms universally too

Degradation of ATP and AMP

Stir-fried ground beef for 5 minutes

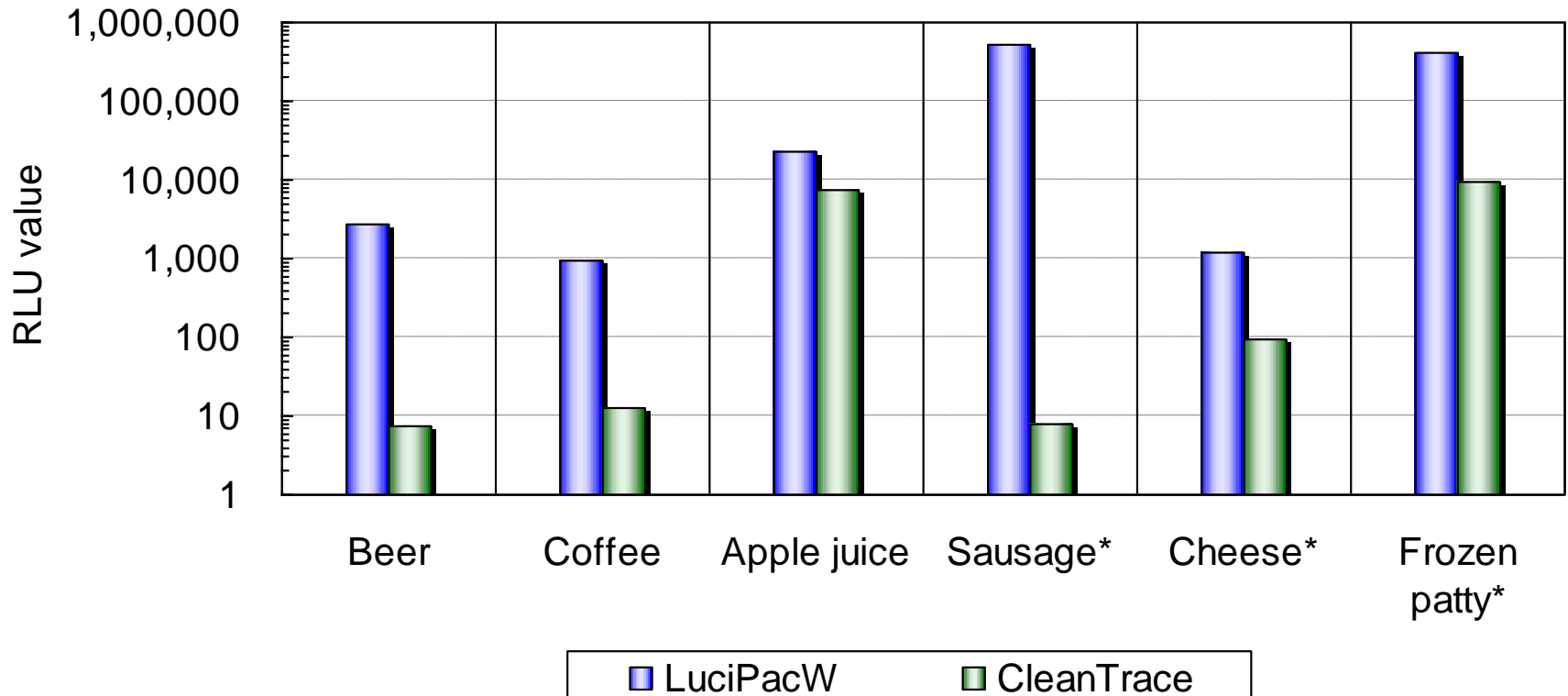
Left grated potato for 2 hours



AMP is more stable than ATP

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

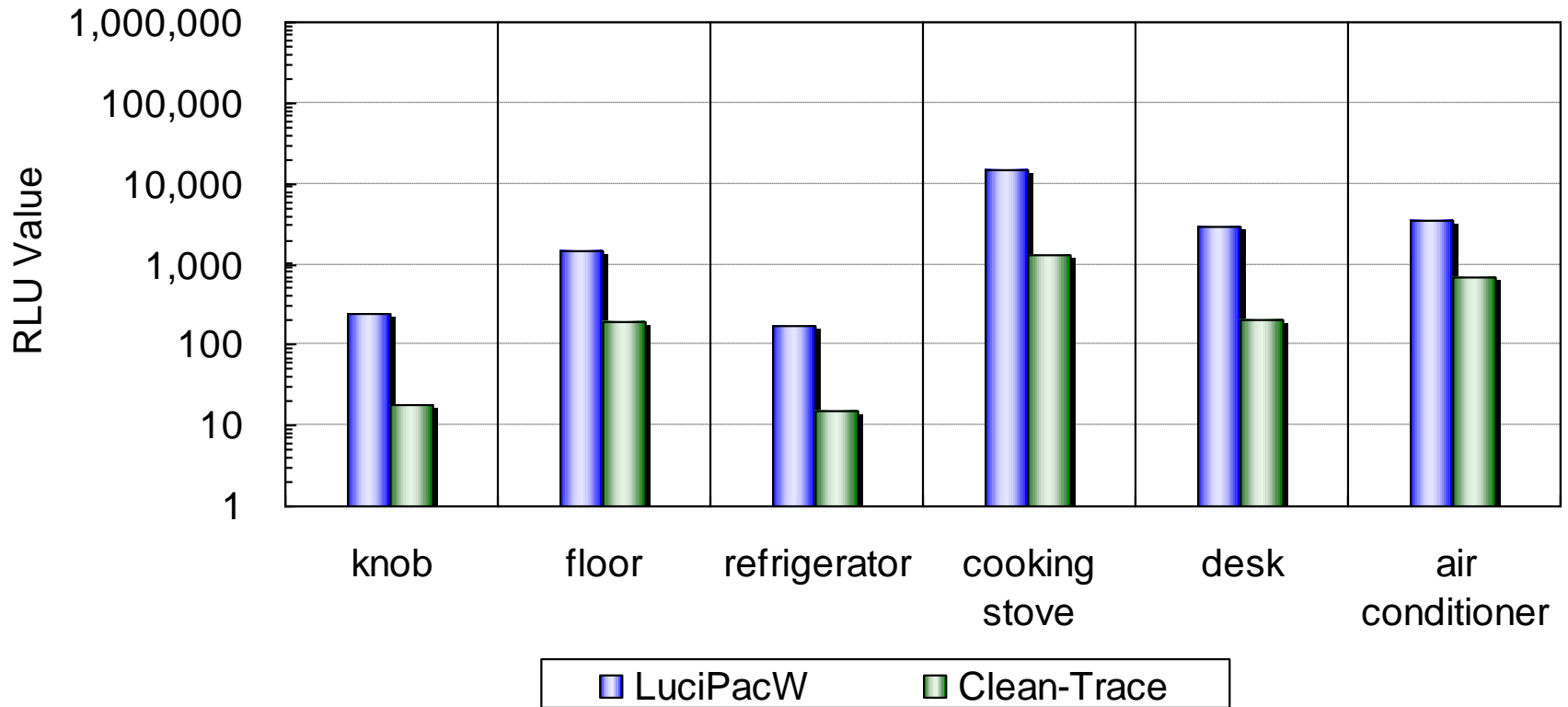
Food & Beverage



* 20 microL of 10% homogenate with PBS

LuciPacW shows 10 to 100,000 times higher sensitivity

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

kikkoman Hygiene Monitoring Devices

**LuciPac Pen & W
(KIKKOMAN)**



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

ULTRASNAP (Hygiena)



Meas. : ATP
Reagent : Liquid
Storage : 2-8 °C

CleanTrace (BIOTRACE)



Meas. : ATP
Reagent : Liquid
Storage : 2-8 °C

AccuPoint (NEOGEN)



Meas. : ATP
Reagent : Freeze dry
Storage : 2-8 °C

PocketSwab (CHARM)



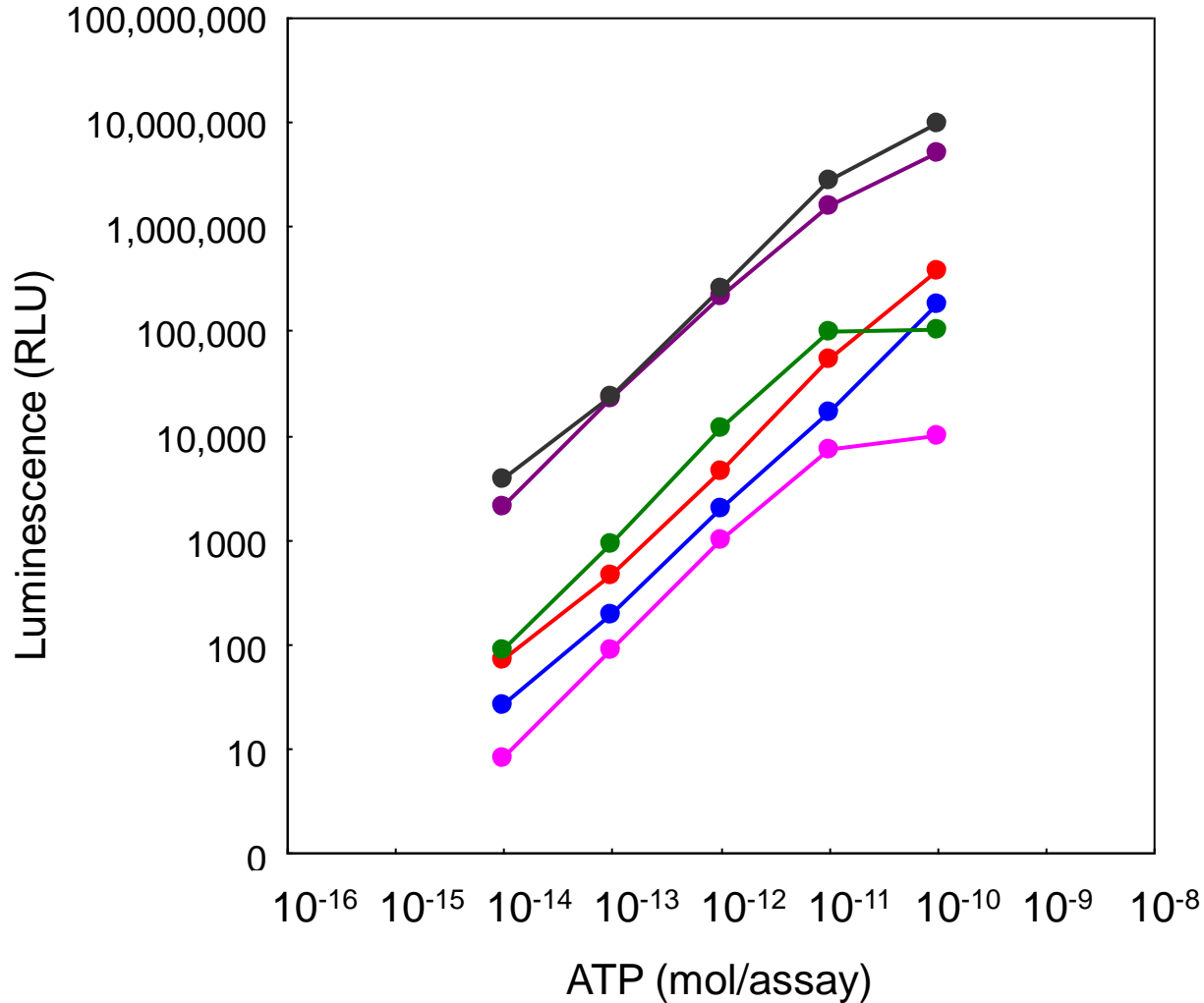
Meas. : ATP
Reagent : Freeze dry
Storage : 2-25 °C

MVP Devices (BIOCONTROL)



Meas. : ATP
Reagent : Freeze dry
Storage : 2-30 °C

Standard Curve



Difference of Luminescence Intensity

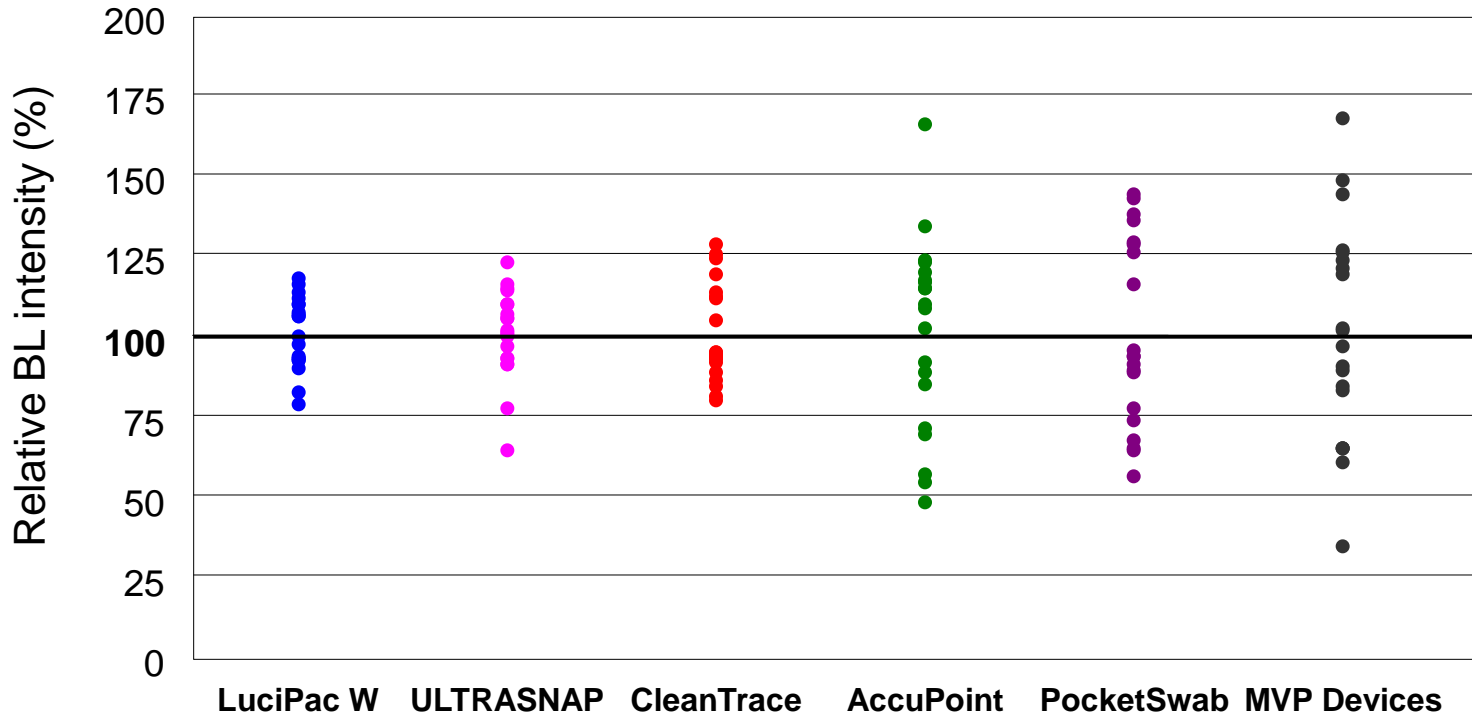
$\frac{\text{ATP}}{10^{-12}\text{mol/assay}}$
(RLU)

● 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)



CV value

11%

14%

15%

30%

29%

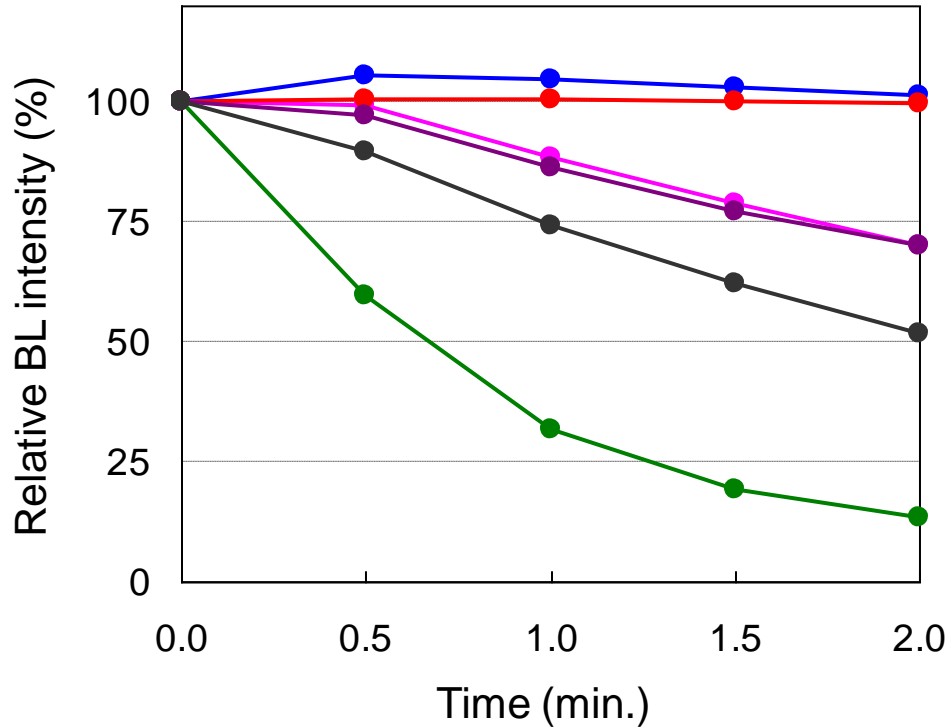
34%

(ATP 10^{-12} mol/assay)

(as a percentage of average BL intensity)

LuciPac W has higher reproducibility

Luminescence Stability



- LuciPac W ● ULTRASNAP (ATP 10⁻¹²mol/assay)
- CleanTrace ● AccuPoint
- PocketSwab ● MVP Devices

LuciPac W has higher luminescence stability