

Chemiluminescence (CL) Application Note

Measurement of ATP from Microorganism Extraction

Method

[1] To 600ul of ATP standard solution ($10^{-13} \sim 10^{-19} \text{mol/ml}$) in a stainless steel dish was added 100ul of CL reagent after 100 seconds. Concentrations were measured by CLD-100 at 24°C for 400 seconds and the standard curve calculated.

[2] 100ul of microorganism (~10⁵), NRP reagent and buffer was mixed and the chemiluminescence was measured by CLD-100 at 24°C for 400 seconds.

 $\label{eq:Luciferin+Luciferase+ATP+Mg2+} \begin{array}{l} \text{Luciferin+Luciferase+ATP+Pyrophosphoric Acid} \\ \text{Luciferin+Luciferase+ATP+O}_2 & \rightarrow & \text{Oxyluciferin+Luciferase+AMP+CO}_2 + \\ \hbar \nu \end{array}$

Fig.1 Reaction of Luciferin - Luciferase

Reagent

ATP (Orientalkobo)

CL reagent: LUMIT (LUMAC)

ATP extraction reagent: NRB (LUMAC)

Buffer: HEPES BUFFER (IRVINE SCIENTIFIC)

Detector: CLD100

Result

 $ATP: 1 \times 10^{-12} \text{ mol/ml}$

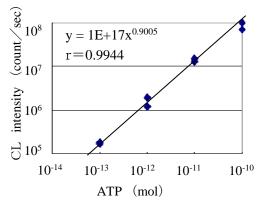


Fig.2 Standard carve of ATP

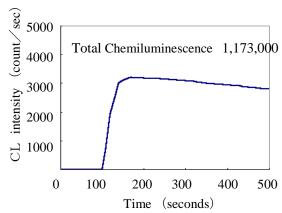


Fig.3 Time-course of chemiluminescence of sample

Reference

Seibutuhakkou to kagakuhakkou



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