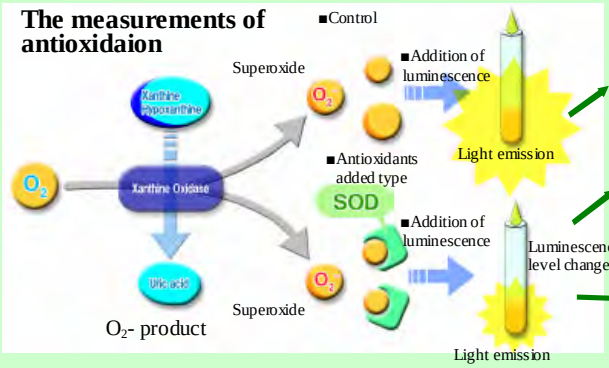
LUMINESCENCE MEASUREMENT CLETA-S

Antioxidant Measurement Kit

■Antioxidant measurement kit
■No need for preparation

Code No.	Type	Name	Quantity
3512011	AB-2970	CLETA-S	1 set

Principle



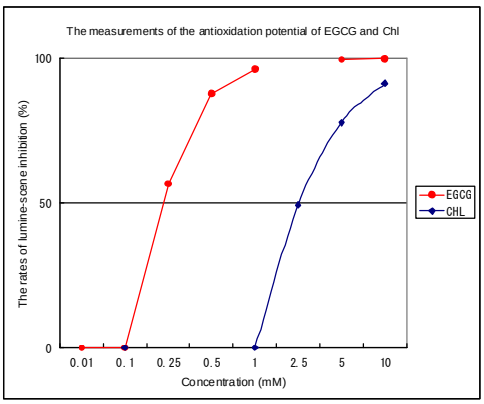
Luminescence intensity as a control value

When the difference in intensity is small
→**Antioxidative potency is small**

When the difference in intensity is large→
Antioxidative potency is large

Purpose of Use

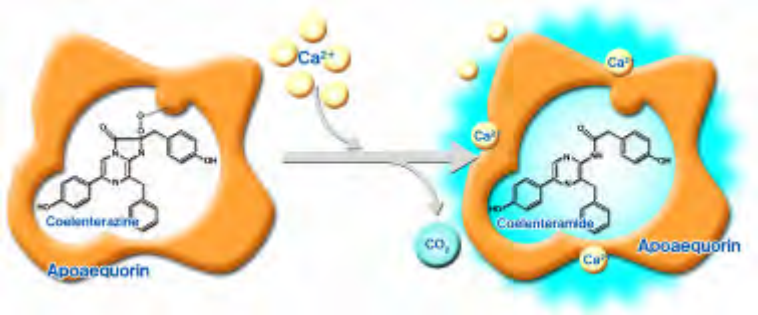
CLETA-S is the kit which measures the antioxidation potential (potential to eliminate superoxide (O_2^-) in enzyme radical). The right figure shows the results of the measurements of the antioxidation potential of epigallocatechin gallate (EGCG) and chlorogenic acid (Chl) known as antioxidants. Concentration-dependent inhibition of luminescence was confirmed for the both chemicals.



Specifications

Type / name	AB-2970 CLETA-S
Kit contents	1. Chemiluminescent reagent solution 2. Substrate solution 3. Enzyme solution 4. Dilution buffer
Volume	Serve for 100 samples
Storage	1. At –20°C or refrigerated

Luminescence Reagent for $Ca2^{+}$

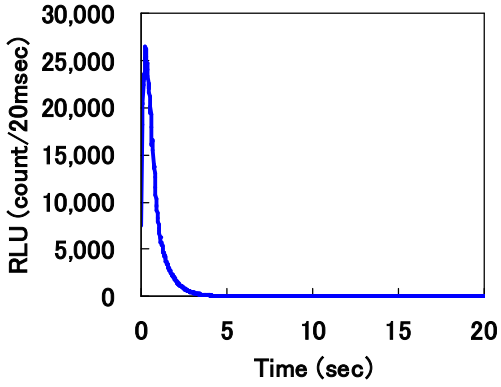


■**Measure intracellular calcium ion**

Code No.	Type	Name	Quantity
3512015	AB-2900	Aequorin 50 µg	1 bottle

Use and features

Aequorin is a photoprotein[(1)] isolated from luminous jellyfish (*Aequorea aequorea*) and exists as a molecular enzyme complex composed of apoaequorin (apoprotein) and coelenterazine (luminescent substrate). This complex reacts with calcium ion and generates blue light that peaks at 470 nm and therefore can be utilized for detection of the changes in intracellular calcium ion concentration under physiological conditions[(4)(5)(6)].



•0.1 ng/µL Aequorin 10 µL ⊕ 30 mM $Ca(NO_3)_2$ 200 µL
•Measurement time: 20 sec. (use luminescence JNR)

Aequorin does not cross the cell membrane, introduced in the cell by the method that temporarily accelerate the membrane permeability[(7)] or by microinjection. Once the intracellular calcium ion concentration is increased in response to some kind of stimulation, aequorin immediately reacts to this change and emits light. Unlike fluorescence detection, it produces specific luminescence that is detectable without excitation energy such as UV light, and there is no concern about autofluorescence. The introduced aequorin evenly distributed throughout the cytoplasm without migrating into subcellular organelle, endoplasmic reticula or extracellular space, allowing for monitoring of changes in calcium ion concentration over a long time course.

This product is provided as a purified recombinant aequorin with apoaequrin gene produced by cloning[(2)(3)], and therefore higher in purity and more stable than natural products.

Specifications

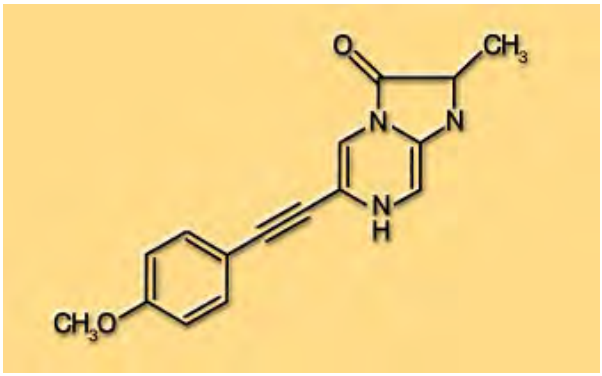
Type / name	AB-2900 Aequorin
Volume	50 µg
Storage	–80ºC

Manufacturer: CHISSO CORPORATION

Reference
(1) Shimomura, O., Johnson, F. H. and Saiga, Y., J. Cell. Comp. Physiol., 59 223-240 (1962)
(2) Inouye, S., Noguchi, M., Sakaki, Y., Takagi, Y., Miyata, T., Iwanaga, S., Miyata, T. and Tsuji, F. I., Proc. Natl. Acad. Sci. USA, 82 3154-3158 (1985)
(3) Shimomura, O. and Inouye, S., Protein Expr. Purif., 16 91-95 (1999)
(4) Blinks, J. R., Mattingly, P. H., Jewell, B., R., Leeuwen, M. V., Harrer, G. C. and Allen, D. G., Methods in Enzymology, 57 292-328 (1978)
(5) Blinks, J. R., Methods in Enzymology, 172 164-203 (1989)
(6) Miller, A. L., Karplus, E. and Jaffe, L. F., Methods in Cell Biol., 40 305-338 (1994)
(7) Snowdowne, K. W. and Borle, A. B., Am. J. Physiol., 247 C396-408 (1984)

Luminescence Measurement

Chemiluminescent Reagent for Detection of O_2^-



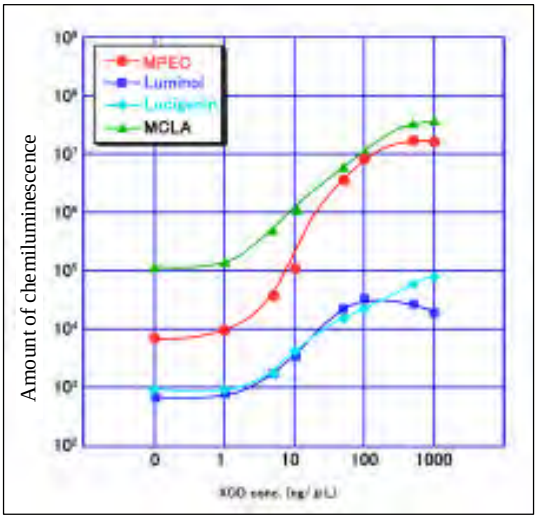
■Measurement of antioxidation potential
■High S/N ratio

Code No.	Type	Name	Quantity
3512010	AB-2950	MPEC 5mg	1 bottle

Use and features

MPEC is a chemiluminescence reagent that specifically reacts with superoxide (O_2^-).
Because it has a higher S/N ratio in neutral solution (see the right figure) and is less reactive with the dissolved oxygen than conventional reagents, it can detect low concentrations of superoxide.

The right figure shows the results of various methods that measured superoxide generated in the hypoxanthine-xanthine oxidase system. The horizontal axis indicates the concentration of xanthine oxidase, and the vertical axis indicates chemiluminescent intensity per min. The red line is the result of MPEC.



Specifications

Type / name	AB-2950 MPEC
Kit contents	2-methyl-6-p-methoxyphenylethynylimidazopyrazinone, 5mg (powder)
Molecular weight	279.1008
Storage temperature	–20℃

Luminescence Measurement BactoLumix®

Chemiluminescent Reagent for Viable Bacteria Counting Test

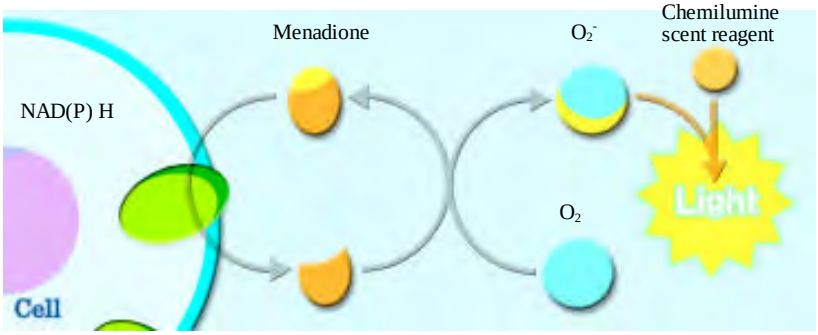
The product comes with a buffer for diluting catalysts other than the bottles in the above picture.

■Speedy measurement of viable bacteria
■For quality control

Code No.	Type	Name	Quantity
3512020	AB-2960	BactoLumix® for 1000 samples	1 set

Principle

This method luminometrically determine the active oxygen generated by the redox reaction between bacterial quinone oxidoreductase (NAD(P)H:) and menadione.



Use and features

BactoLumix can be used for drug susceptibility test and antibacterial activity test. Use of chemiluminescence for microbial count rapidly provides the results.

1. Measurement takes 5 to 20 seconds per sample
   -The results are more rapidly available than the smear method.
2. No need for bacteriolysis for measurement, which makes procedures easier than the ATP method
   -The same viable bacteria can be reused in another assay system.
3. Can be detected up to 3 $\times 10^4$ to 10^8/mL of microbes
   -Almost the same performance as the ATP method

Specifications

Type / name	AB-2960 BactoLumix®
Kit contents	1. Chemiluminescent reagent (powder) 2. Buffer for dissolution of chemiluminescent reagent 3. Catalyst (menadione) 4. Buffer for dilution of catalyst 5. Powder medium for microbial culture
Volume	Serve for 100 samples
Storage temperature	4℃ (Do not frozen)

Manufacturer: Nikken Bio Medical Laboratories