

D-Luciferin

Cat: D8380 /D8390 /D9390

Specification: 25mg /100mg /1g

Storage: Store in a dry, dark place at -20°C. The shelf life is 1 year. (It can be transported at room temperature.)

Product components:

CAT	Product Name	CAS	Molecular Formula	Molecular Weight	Purity(HPLC)
D8380	D-Luciferin, free acid	2591-17-5	C ₁₁ H ₈ N ₂ O ₃ S ₂	280.32	99%
D8390	D-Luciferin, potassium salt	115144-35-9	C ₁₁ H ₇ N ₂ KO ₃ S ₂	318.41	99%
D9390	D-Luciferin, sodium salt	103404-75-7	C ₁₁ H ₇ N ₂ NaO ₃ S ₂	302.30	99%

Introduction

D-luciferin is the substrate of firefly luciferase. Its quantum efficiency is 0.88, which is 20 times that of Luminol.

Reaction principle: First, in the presence of magnesium ions, luciferase causes the reaction of luciferin with ATP. Subsequently, it is oxidized to form a dioxetane structure and emits yellow-green light. Luciferin-luciferase luminescence is used for ATP monitoring to determine cell viability and bacterial counting. It is also used for reporting genetic testing. It can be used in conjunction with small animal in vivo imaging systems for in vivo fluorescence detection after labeling LUC genes. The excitation and emission wavelengths are 328nm and 533nm, respectively.

Application: (1) in vitro analysis; (2) Analysis of in vivo imaging; (3) High-sensitivity ATP analysis

Protocols:(for reference only)

1. Analysis method of in vivo imaging

(1) Dissolve the D-Luciferin working solution (15mg/mL, dissolved with ultrasound) completely with DPBS (w/o Mg²⁺, Ca²⁺), and filter it through a 0.2 μm sterile filter.

(2) Injection volume: 10μL/g body weight, for example, a 10g mouse is injected with 100μL of working solution (1.5 mg D-Luciferin).

(3) After 10-15 minutes of intraperitoneal injection, the image analysis was performed on the computer.

2. In vitro analysis method

(1) Prepare a 200× D-Luciferin stock solution (30mg/mL, dissolved with ultrasound) with sterile water and use it immediately or store it at -20°C.

(2) Dilute the D-Luciferin stock solution with preheated complete medium at a ratio of 1:200 to prepare a working solution (150 μg/mL).

(3) Remove the culture medium from the cultured cells.

(4) Before conducting image analysis, add 1× D-Luciferin working solution to the cells and conduct image analysis.

Note: Before image analysis, culturing cells at 37°C for a short period of time can increase signal intensity.

Note

1. Unless otherwise specified, the biochemical reagents produced by our company are generally non-sterile packaged. If they are to be used for cell experiments, please conduct pretreatment in advance.
2. Once dissolved, please store the solution in separate containers to avoid product degradation caused by repeated freezing and thawing.
3. The product information is for reference only. If you have any questions, please call 400-968-6088 for consultation.
4. The products are all for scientific research use only. Do not use it for medical, clinical diagnosis or treatment, food and cosmetics, etc. Do not store them in ordinary residential areas.
5. For your safety and health, please wear laboratory clothes, disposable gloves and masks to operate.