

# Product Information

## D-Luciferin, Sodium Salt

Catalog Number: D1007

Product Size: 10 mg, 500 mg

Application Scope: 1) *In vitro* Chemiluminescence Analysis ; 2) *In vivo* Imaging System; 3) High-sensitivity ATP analysis;

## Parameters

Appearance: Light yellow solid soluble in water

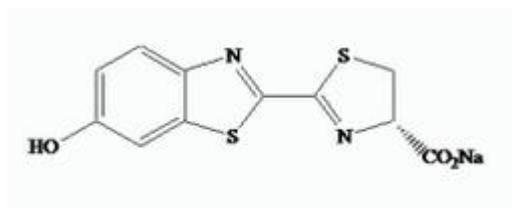
Ex/Em = 254/328 nm

CAS No.: 103404-75-7

Molecular Formula:  $C_{11}H_7N_2NaO_3S_2$

Molecular Weight: 302.3

Molecular Structure:



## Storage

Store at -20°C and protect from light. When stored as directed, product is stable for at least 12 months.

## Description

Optical *in vivo* imaging currently uses bioluminescence and fluorescence technologies. The bioluminescence method is based on the principle that luciferase can catalyze the chemiluminescence of substrates. The cell line which can stably express luciferase *in vitro* is implanted in the animal and reacts with the substrate injected into the body later. The optical system is used to detect the light intensity, which indirectly reflects the change in the number of cells or the localization of the cells. This technology has been widely used in many fields, the most commonly used are the establishment of tumor or

disease animal models, and can be used in virology research, siRNA research, stem cell research, protein interaction research, etc.

D-Luciferin is a commonly used substrate for Luciferase, which is commonly used in the entire biotechnology field, especially in optical *in vivo* imaging. Under the action of ATP and luciferase, luciferin can be oxidized, and its chemiluminescence is detected at 560 nm. Luciferin is encoded by the luc gene, which exists as a reporter gene in a variety of cells. Due to the low background of chemiluminescence, the luc gene can be detected at very low expression levels. In addition, luciferin / luciferase was used to measure  $10^{-15}$  molar amounts of ATP.

## Protocol

1. *In vitro* luminescence detection

1) Dissolve 10 mg D-fluorescein sodium salt in 330  $\mu$ L distilled water to prepare a 100 mM stock solution (200  $\times$ ). Use immediately after mixing or freeze at -20 °C after packaging.

2) Dilute the stock solution 1: 200 with cell culture medium, and configure working solution (final concentration 150  $\mu$ g / mL), that is, 1  $\times$  D-fluorescein sodium salt.

3) Remove the culture medium.

4) Add an appropriate amount of 1  $\times$  fluorescein working solution to the cells, and then perform image analysis (or the cells can be detected after a short incubation at 37 °C to



enhance the signal).

2. In vivo imaging analysis

- 1) Prepare D-luciferin sodium working solution (15 mg / mL) with sterile 1 × PBS, that is, add 667 μL of 1 × PBS to 10 mg of D-luciferin sodium salt, and filter to remove bacteria . When using, keep it cold and protected from light.
- 2) Refer to the following table and inject different volumes according to different injection methods:

3) Imaging analysis is performed 5-10 minutes after injection into the body.

**Note**

The background fluorescence of D-Luciferin Sodium Salt samples is mainly from fluorescein. If this product is not used immediately, it is recommended to store it at -20 °C, protected from light after packaging.

Injection method	Injection dose
Intravenous (25-27 gauge needle)	Add a corresponding volume of 15 mg / mL fluorescein working solution at a concentration of 10 uL / g body weight
Intraperitoneal injection (25-27 gauge needle)	Add a corresponding volume of 15 mg / mL fluorescein working solution at a concentration of 10 uL / g body weight
Intramuscular injection (27 gauge needle)	50 uL, 1–2 mg / mL working solution of fluorescein
Intranasal injection (pipette)	50 uL, 3 mg / mL working solution of fluorescein

