

# Certificate of Analysis

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**Product Name:** D-Luciferin sodium salt

**Catalog No.:** 5427

**Batch No.:** 5

CAS Number: 103404-75-7

IUPAC Name: (4S)-4,5-Dihydro-2-(6-hydroxy-2-benzothiazolyl)-4-thiazolecarboxylic acid sodium salt

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>11</sub>H<sub>7</sub>N<sub>2</sub>NaO<sub>3</sub>S<sub>2</sub>·<sup>3</sup>/<sub>4</sub>H<sub>2</sub>O

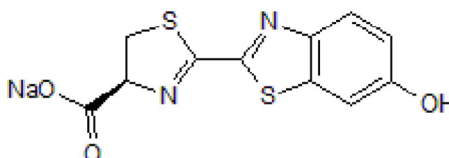
**Batch Molecular Weight:** 315.81

**Physical Appearance:** White solid

**Solubility:** water to 100 mM  
DMSO to 100 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 99.3% purity

**Chiral HPLC:** Shows 99.5% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	41.83	2.71	8.87
Found	41.05	2.8	8.65

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

D-Luciferin sodium salt is a firefly luciferase substrate ( $K_m = \sim 2 \mu\text{M}$ ). Used in many standard bioluminescence imaging (BLI) techniques, including monitoring tumour growth, and investigating intracellular signaling activity in vitro and in vivo. Used with MC3 LNP Luciferase (Cat. No. 8889) for in vitro and in vivo bioluminescence LNP detection. Cell permeable. Emission maximum = 562 nm.

**Physical and Chemical Properties:**

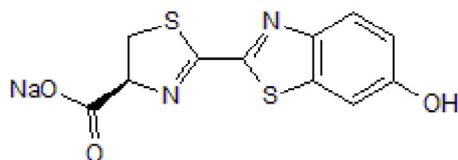
Batch Molecular Formula:  $\text{C}_{11}\text{H}_7\text{N}_2\text{NaO}_3\text{S}_2 \cdot \frac{3}{4}\text{H}_2\text{O}$

Batch Molecular Weight: 315.81

Physical Appearance: White solid

**Minimum Purity:**  $\geq 99\%$

**Batch Molecular Structure:**



**Storage:** Store at  $-20^\circ\text{C}$ . This product is packaged under an inert atmosphere.

**CAUTION** - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

**Solubility & Usage Info:**

water to 100 mM

DMSO to 100 mM

Solutions of this product should be made with solvents purged with nitrogen. We do not recommend storing aqueous solutions for more than one day.

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a  $45\text{--}60^\circ\text{C}$  water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. \*Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at  $-20^\circ\text{C}$  or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Keyaerts et al** (2008) Dynamic bioluminescence imaging for quantitative tumour burden assessment using IV or IP administration of D-luciferin: effect on intensity, time kinetics and repeatability of photon emission. *Eur.J.Nucl.Med.Mol.Imaging*. **35** 999. PMID: 18180921.

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