D-Luciferin Potassium Salt

Catalog No.C12027 Batch:C1202703

Product Datasheet

Technical Data

Formula	$C_{11}H_7KN_2O_3S_2$					
Molecular Weight	318.41	**CAS No.**	115144-35-9			
Solubility (25°C)*	In vitro	Water	16 mg/mL (50.24 mM)			
		DMSO	8 mg/mL (25.12 mM)			
		Ethanol	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.
		Injection	Clear solution	5%DMSO [1] → 40%PEG300 [2] → 5%Tween80 [3] → 50%ddH2O Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	0.400mg/ml (1.26mM)	Taking the 1 mL working solution as an example, add 50 μL of 8 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 50 μL of Tween80 to the above system, mix evenly to clarify; then continue to add 500 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results.
			Clear solution	5% DMSO [1] → 95% Corn oil Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	0.400mg/ml (1.26mM)	Taking the 1 mL working solution as an example, add 50 μL of 8 mg/ml clear DMSO stock solution to 950 μL of corn oil and mix evenly. The mixed solution should be used immediately for optimal results.

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.1406 mL	15.7030 mL	31.4060 mL
5 mM	0.6281 mL	3.1406 mL	6.2812 mL
10 mM	0.3141 mL	1.5703 mL	3.1406 mL
50 mM	0.0628 mL	0.3141 mL	0.6281 mL

Biological Activity

Description	D-luciferin is the natural substrate of the enzyme luciferase (Luc) which catalyzes the production of the typical yellow-green light of fireflies. The 560 nm chemiluminescence from this reaction peaks within seconds, with light output that is proportional to luciferase concentration when the substrate luciferin is present in excess. The luciferase (luc) gene is a popular reporter gene for research and agent screening. Chemiluminescent techniques are virtually background-free, making the luc reporter gene ideal for detecting low-level gene expression. In addition to its role as a reporter of gene expression, luciferase is commonly used in an extremely sensitive assay for ATP.
In vitro	1.Example protocol for in vitro bioluminescent image assays a) Prepare a 100 mM (100-200X) Luciferin stock solution in sterile water. Mix well. Use immediately, or make single use aliquots, and store at -20℃, avoid freeze-thaw cycles, avoid exposure to the light. b) Prepare a 0.5-1 mM working solution of D-Luciferin in pre-warmed tissue culture medium. c) Aspirate media from cultured cells. d) Add Luciferin working solution to cells, and incubate the cells for 5-10 minutes at 37℃ just prior to imaging. 2.Example protocol for in vivo bioluminescent image assays a) Prepare a 15 mg/mL Luciferin stock solution in DPBS, without Mg2+ and Ca2+. Mix well. b) Filter sterilizes the solution through a 0.2 μm filter. Use immediately, or make single use aliquots, and store at -20℃, avoid freeze-thaw cycles, avoid exposure to the light. c) Inject the luciferin intra-peritoneally (i.p.) 10-15 minutes before imaging at 150 mg/kg (or 10 μL/g of luciferin stock solution) of the animal body weight. Note: A kinetic study of luciferin should be performed for each animal model to determine peak signal time. 3.Example protocol for luciferin reporter assays a) Prepare a 100 mM Luciferin stock solution in sterile water. Use immediately, or make single use aliquots, and store at -20℃, avoid freeze-thaw cycles, avoid exposure to the light. b) Prepare a 1 mM working solution of D-Luciferin with 3 mM ATP, 1 mM DTT and 15 mM MgSO4 in 25 mM tricine buffer pH 7.8. c) Pipette 5-10 μLof cell lysate into a microplate. Use lysis reagent or buffer without lysate as a blank. d) Prime luminometer with luciferin working solution. e) Inject 200 μL of luciferin working solution with no delay and a 10 second integration time.

Protocol (from reference)

Animal Study:[2]

- **Animal Models**
  Female NCI Athymic nu/nu nude mice
- **Dosages**
  3 mg/100 μL
- **Administration**
  i.p.

References

https://pubmed.ncbi.nlm.nih.gov/25992288/ https://pubmed.ncbi.nlm.nih.gov/33485378/

RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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