Product Datasheet

Technical Data

Formula	$C_{11}H_{14}N_4O_4$					
Molecular Weight	266.25	**CAS No.**	69-33-0			
Solubility (25°C)*	In vitro	DMSO	53 mg/mL (199.06 mM)			
		Water	Insoluble			
		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.	2.65mg/ml (9.95mM)	Taking the 1 mL working solution as an example, add 50 μL of 53 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.	0.265mg/ml (1.00mM)	Taking the 1 mL working solution as an example, add 50 μL of 5.3 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	3.7559 mL	18.7793 mL	37.5587 mL
5 mM	0.7512 mL	3.7559 mL	7.5117 mL
10 mM	0.3756 mL	1.8779 mL	3.7559 mL
50 mM	0.0751 mL	0.3756 mL	0.7512 mL

Biological Activity

Description	Tubercidin (7-deaza-adenosine), an adenosine analogue, is a **nucleoside antibiotic**. It is incorporated into DNA and inhibits polymerases, thereby inhibiting **DNA replication** and **RNA and protein synthesis**. This agent also exhibits antifungal and antiviral activities.
In vitro	Continuous exposure for 14 days to tubercidin alone is highly toxic to both human CFU-GM and BFU-E. The IC50s of tubercidin are 3.4±1.7 and 3.7±0.2 nM for CFU-GM and BFU-E, respectively. Tubercidin also has a direct dose-dependent inhibitory effect on myeloid and erythroid human bone marrow progenitor cells in vitro[1].
In vivo	Tubercidin at the dose regimen (5 mg/kg everyday for 4 days) is lethal when used alone. Some of the studies show that the mortality from tubercidin is primarily due to hepatic and renal injuries and, to a lesser extent, damage to the pancreas. Coadministration of NBMPR-P at 25 mg/kg per day completely protects the mice (100% survival) from this lethal dose regimen of tubercidin[1].

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  Human bone marrow cells
- **Concentrations**
  10 nM
- **Incubation Time**
  14 days
- **Method**
  Human bone marrow cells were obtained from healthy volunteers. In the protection studies, cells are exposed to 10 nM of tubercidin in the presence or absence of various doses of NBMPR-P. Cells are continuously exposed to drugs for 14 days in a humidified atmosphere of 5% C02-95% air at 37°C. Colonies of CFU-GM (250 cells) and BFU-E (>30 hemoglobinized cells) are counted with an inverted microscope.

Animal Study:[1]

- **Animal Models**
  CD1 mice
- **Dosages**
  5 mg/kg
- **Administration**
  i.p.

References

https://pubmed.ncbi.nlm.nih.gov/2764531/

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.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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