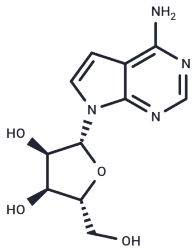
Data Sheet (Cat.No.T7004)

TargetMol

Tubercidin

Chemical Properties



CAS No. : 69-33-0

Formula: C11H14N4O4

Molecular Weight: 266.25

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Tubercidin (Sparsomycin A), 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.
Targets(IC50)	Antibacterial,Antibiotic,DNA/RNA Synthesis,Influenza Virus
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].
Cell Research	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. (Only for Reference)

Solubility Information

Solubility	DMSO: 55 mg/mL (206.57 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.51 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
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

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

el Kouni MH, et al. Antimicrob Agents Chemother. 1989, 33(6):824-827.