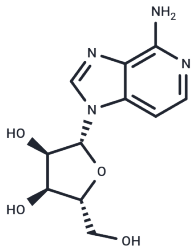
Data Sheet (Cat.No.T10111L)

TargetMol

3-Deazaadenosine

Chemical Properties



CAS No. : 6736-58-9

Formula: C11H14N4O4

Molecular Weight: 266.25

Storage: Store at low temperature
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	3-Deazaadenosine (3-DAA) is a potent S-adenosylhomocysteine (SAH) hydrolase inhibitor. It inhibits methylation reactions by inducing intracellular SAH accumulation, exhibiting antiviral, anti-inflammatory, and immunomodulatory activities.
In vitro	3-Deazaadenosine dose-dependently inhibits viral replication (including HIV-1) by targeting SAH hydrolase to disrupt viral RNA methylation [1]. In macrophages, it suppresses NF-κB transcriptional activity and reduces pro-inflammatory cytokine (e.g., TNF-α) production [2]. Furthermore, it inhibits vascular smooth muscle cell proliferation by interfering with Ras prenylation and downstream signaling [3].
In vivo	In animal models of viral infection, treatment with 3-Deazaadenosine significantly reduces viral titers and improves survival rates [1]. In rodent models of vascular injury, systemic administration of 3-DAA effectively prevents neointima formation and inhibits the accumulation of inflammatory cells within the vessel wall, demonstrating its potential in managing proliferative vascular diseases [3].

Solubility Information

Solubility	H2O: 80 mg/mL (300.47 mM),Sonication is recommended. DMSO: 100 mg/mL (375.59 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.4 mg/mL (9.01 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

Gordon RK, et al. Anti-HIV-1 activity of 3-deaza-adenosine analogs. Inhibition of S-adenosylhomocysteine hydrolase and nucleotide congeners. Eur J Biochem. 2003 Sep;270(17):3507-17.

Jeong SY, et al. 3-deazaadenosine, a S-adenosylhomocysteine hydrolase inhibitor, has dual effects on NF-kappaB regulation. Inhibition of NF-kappaB transcriptional activity and promotion of IkappaBalpha degradation. J Biol Chem. 1999 Jul 2;27

Sedding DG, et al. 3-Deazaadenosine prevents smooth muscle cell proliferation and neointima formation by interfering with Ras signaling. Circ Res. 2009 May 22;104(10):1192-200.