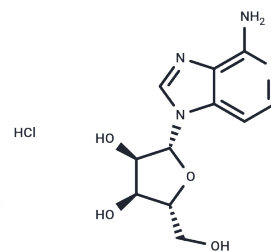


## 3-Deazaadenosine hydrochloride

## Chemical Properties

CAS No. :	86583-19-9
Formula:	C <sub>11</sub> H <sub>15</sub> ClN <sub>4</sub> O <sub>4</sub>
Molecular Weight:	302.71
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	3-Deazaadenosine hydrochloride is an inhibitor of S-adenosylhomocysteine hydrolase (K <sub>i</sub> : 3.9 μM). It has anti-inflammatory, anti-proliferative, and anti-HIV activity.
Targets(IC50)	HIV Protease
In vitro	3-Deazaadenosine exhibits antiviral properties specifically against HIV, by inhibiting the p24 antigen in HIV-1 infected peripheral blood mononuclear (PBMCs) cells (A012 and A018 isolates, IC <sub>50</sub> s: 0.15 and 0.20 μM) [1]. Furthermore, it modulates inflammatory responses by suppressing LPS-induced TNF-α mRNA expression and altering NF-κB pathway activity in RAW 264.7 cells. This includes inhibition of NF-κB transcriptional activity, which is enhanced by homocysteine, and proteolytic degradation of IκBα (not IκBβ), despite increasing NF-κB's DNA binding activity and promoting its nuclear translocation [2]. Additionally, at concentrations of 50 and 100 μM, 3-Deazaadenosine impedes the phosphorylation of several key signaling molecules, including Raf, ERK, protein-dependent kinase 1, protein kinase B (Akt), and forkhead transcription factor FoxO1a. At 50 μM, it also inhibits the proliferation of vascular smooth muscle cells (VSMC) by interfering with Ras signaling pathways, showcasing its potential for cardiovascular applications [3].
Cell Research	The HIV-1 strains A012 and A018 are used in the assay. Inhibition of p24 antigen is measured. Briefly, PHA-stimulated peripheral blood mononuclear (PBMCs) are incubated with either HIV-1 strain for 1 h at 37°C at 200-fold the 50% tissue culture infectious dose (TCID <sub>50</sub> ) of the virus stock per 2 × 10 <sup>5</sup> PBMC cells. The TCID <sub>50</sub> is defined as the amount of virus stock at which 50% of the inoculated wells are positive. Cells are then grown in microtiter plates with different drug concentrations at 2 × 10 <sup>5</sup> cells per well. On day 4, cells are resuspended and split 1:3 with fresh media and 3-Deazaadenosine. Supernatant p24 antigen is determined on day 7 by ELISA [1].

## Solubility Information

Solubility	DMSO: 127.5 mg/mL (421.2 mM), Sonication is recommended. H <sub>2</sub> O: 20 mg/mL (66.07 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	3.3035 mL	16.5175 mL	33.0349 mL
5 mM	0.6607 mL	3.3035 mL	6.607 mL
10 mM	0.3303 mL	1.6517 mL	3.3035 mL
50 mM	0.0661 mL	0.3303 mL	0.6607 mL

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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;274(27):18981-8.
- 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.

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