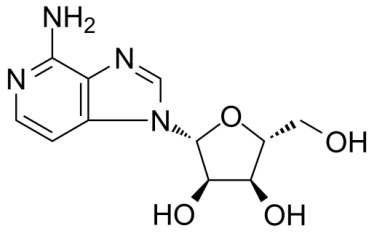
Data Sheet

Product Name:	3-Deazaadenosine
Cat. No.:	CS-W014048
CAS No.:	6736-58-9
Molecular Formula:	$C_{11}H_{14}N_4O_4$
Molecular Weight:	266.25
Target:	HIV
Pathway:	Anti-infection
Solubility:	DMSO : 130 mg/mL (488.26 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

3-Deazaadenosine is an inhibitor of **S-adenosylhomocysteine hydrolase**, with a **K_i** of 3.9 μM; 3-Deazaadenosine has anti-inflammatory, anti-proliferative and anti-**HIV** activity. IC50 & Target: IC50: 0.15 (HIV-1, A012 isolate), 0.20 μM (HIV-1, A018 isolate)[1] Ki: 3.9 μM (S-adenosylhomocysteine hydrolase)[1] **In Vitro:** 3-Deazaadenosine is an inhibitor of S-adenosylhomocysteine hydrolase, with a K_i of 3.9 μM. 3-Deazaadenosine shows anti-HIV effect, and inhibits p24 antigen in peripheral blood mononuclear (PBMCs) cells infected with HIV-1 isolates (A012 and A018) with IC_{50}s of 0.15 and 0.20 μM, respectively[1]. 3-Deazaadenosine (1-100 μM) inhibits LPS-induced expression of TNF-α mRNA, increases DNA binding activity of NF-κB, and causes proteolytic degradation of IκB α, but Not IκBβ in RAW 264.7 cells. 3-Deazaadenosine (100 μM) enhances nuclear translocation of NF-κB, but blocks LPS-induced NF-κB transcriptional activity, and such inhibition is augmented by the addition of homocysteine[2]. 3-Deazaadenosine (50, 100 μM) dose-dependently inhibits the phosphorylation of Raf and ERK, protein-dependent kinase 1, protein kinase B (Akt), and forkhead transcription factor FoxO1a. 3-Deazaadenosine (50 μM) suppresses vascular smooth muscle cell (VSMC) proliferation via interfering with Ras signaling[3].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: [1]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 ($TCID_{50}$) of the virus stock per **2×10^5 PBMC cells**. The $TCID_{50}$ 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 2×10^5 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].

References:

[1]. 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.

[2]. 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.

[3]. 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.

CAIndexNames:

1H-Imidazo[4,5-c]pyridin-4-amine, 1-β-D-ribofuranosyl-

SMILES:

O[C@H]1[C@@H](O[C@H](CO)[C@H]1O)N2C3=C(C(N)=NC=C3)N=C2

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA