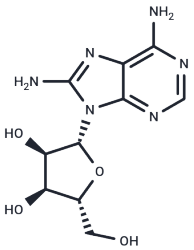
Data Sheet (Cat.No.T40483)

TargetMol

8-Aminoadenosine

Chemical Properties



CAS No. : 3868-33-5

Formula: C10H14N6O4

Molecular Weight: 282.26

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	8-Aminoadenosine (8-NH2-Ado) is an RNA-directed nucleoside analogue that effectively diminishes cellular ATP levels and impedes mRNA synthesis. It also obstructs Akt/mTOR signaling, inducing autophagy and apoptosis in a p53-independent manner. Its significant antitumor activity underscores its therapeutic potential.
Targets(IC50)	Apoptosis,Others,Akt,Autophagy,DNA/RNA Synthesis,mTOR
In vitro	8-Aminoadenosine (8-NH2-Ado) demonstrates a range of bioactive effects across various cell lines. In MM.1S and U266 cells, it exhibits half-maximal inhibitory concentrations (IC50s) of 1.5 μM and 8.88 μM, respectively, after a 48-hour exposure[1]. At a concentration of 10 μM over 24 hours, it induces significant apoptotic death of MCF-7 cells through a p53-independent mechanism, characterized by PARP cleavage[2]. Additionally, at a concentration of 3 μM, 8-Aminoadenosine triggers autophagy in MM. 1S cells within 0.5 to 4 hours, and notably reduces ATP levels and glucose consumption over similar durations[1]. This compound also causes a marked time-dependent decrease in GLUT1 expression initially, with subsequent down-regulation of both GLUT1 and GLUT4 transporters over a longer period (24 hours)[1]. It is observed to inhibit cell proliferation and induce cell death without activating p53 pathway targets or increasing p53 or p21 proteins. Its toxicological actions are adenosine kinase activity-dependent, requiring conversion to 8-NH2-ATP in specifically adenosine kinase-deficient cells[1]. Analysis of cell viability and apoptosis under various concentrations and timeframes further corroborates its impact on cell survival and apoptotic pathways[1][2].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.5428 mL	17.7142 mL	35.4283 mL
5 mM	0.7086 mL	3.5428 mL	7.0857 mL
10 mM	0.3543 mL	1.7714 mL	3.5428 mL
50 mM	0.0709 mL	0.3543 mL	0.7086 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

Mala Shanmugam, et al. Targeting glucose consumption and autophagy in myeloma with the novel nucleoside analogue 8-aminoadenosine. J Biol Chem. 2009 Sep 25;284(39):26816-30.
Alla Polotskaia, et al. 8-Amino-adenosine activates p53-independent cell death of metastatic breast cancers. Mol Cancer Ther. 2012 Nov;11(11):2495-504.
Jennifer Ann Frey, et al. 8-Amino-adenosine inhibits multiple mechanisms of transcription. Mol Cancer Ther. 2010 Jan;9(1):236-45.