N6-Benzyladenosine

Cat. No.: HY-N7844

CAS No.: 4294-16-0

Molecular Formula: $C_{17}H_{19}N_5O_4$

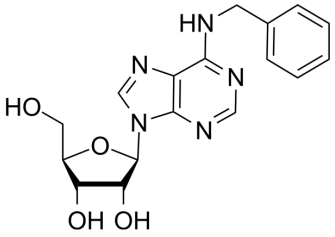
Molecular Weight: 357.36

Target: Apoptosis; Adenosine Receptor

Pathway: Apoptosis; GPCR/G Protein

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (349.79 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7983 mL	13.9915 mL	27.9830 mL
	5 mM	0.5597 mL	2.7983 mL	5.5966 mL
	10 mM	0.2798 mL	1.3991 mL	2.7983 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

N6-Benzyladenosine is an adenosine receptor agonist, has a cytoactive activity. N6-Benzyladenosine arrests cell cycle at G0/G1 phase and induces cell apoptosis. N6-Benzyladenosine also exerts inhibitory effect on T. gondii adenosine kinase and glioma[1]-[5].

In Vitro

N6-benzyladenosine suppresses the clonogenic activity and the growth of different neoplastic cells[2].

N6-benzyladenosine results cell morphology alteration and actin cytoskeleton disorganization in T24 cell[2].

N6-benzyladenosine (10 μM; 24 h) is a potent inductor of apoptosis, and belongs to apoptotic systems with distinct caspase-3 and caspase-9 activation[3].

N6-benzyladenosine (0-100 μM; 24 h) induces chromatin condensation, formation of apoptotic bodies, and cleavage of DNA to nucleosomal fragments in a dose-dependent manner[3].

N6-benzyladenosine acts as a selective anti-toxoplasma agent with binding affinity to T. gondii adenosine kinase (apparent K_m =179.8 μM), over human adenosine kinase[4].

N6-benzyladenosine (0-50 μM) shows weak inhibition against adenosine kinase deficient (TgAKS3) strains of Toxoplasma gondii[4].

N6-benzyladenosine (compound 2) (0.3-20 μM) exerts anti-glioma activity by interfering with the mevalonate pathway and inhibiting FPPS (Farnesyl pyrophosphate synthase) [5].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis[3]	
Cell Line:	HL-60
Concentration:	10 μM
Incubation Time:	24 hours
Result:	Induced cell apoptosis by increasing caspase-3 (DEVDase) as well as caspase-9 (LEHDase) activity, indicating an apoptotic systems with distinct caspase-3/9 activation.

Apoptosis Analysis[5]	
Cell Line:	U87MG human glioma cell line.
Concentration:	0.3, 0.6, 1.2, 2.5, 5, 10, 20 μM
Incubation Time:	48 hours
Result:	Inhibited glioma growth by interfering with the mevalonate pathway and inhibiting FPPS.

REFERENCES

[1]. Kaminek M, et al. Cytokinin activities of N6-benzyladenosine derivatives hydroxylated on the side-chain phenyl ring. Journal of Plant Growth Regulation. 1987. 6(2):113.

[2]. Castiglioni S, et al. N6-isopentenyladenosine and its analogue N6-benzyladenosine induce cell cycle arrest and apoptosis in bladder carcinoma T24 cells. Anticancer Agents Med Chem. 2013 May;13(4):672-8.

[3]. Mlejnek P. Caspase inhibition and N6-benzyladenosine-induced apoptosis in HL-60 cells. J Cell Biochem. 2001;83(4):678-89.

[4]. Kim YA, et al. Synthesis, biological evaluation and molecular modeling studies of N6-benzyladenosine analogues as potential anti-toxoplasma agents. Biochem Pharmacol. 2007 May 15;73(10):1558-72.

[5]. Grimaldi M, et al. NMR for screening and a biochemical assay: Identification of new FPPS inhibitors exerting anticancer activity. Bioorg Chem. 2020 May;98:103449.

Caution: Product has not been fully validated for medical applications. For research use only.

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