

Product Data Sheet

Product Name: N6-Benzyladenosine

Cat. No.: GC67272

Chemical Properties

Cas. No. 4294-16-0

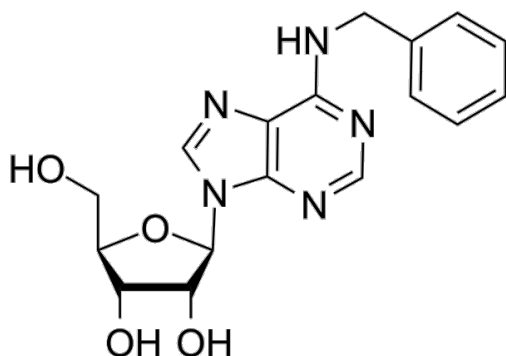
Formula $C_{17}H_{19}N_5O_4$ M.Wt 357.36

Solubility DMSO : 125 mg/mL (349.79 mM; Need ultrasonic) Storage 4°C, protect from light

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



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

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Background

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]}.

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 μ M; 24 h) is a potent inducer of apoptosis, and belongs to apoptotic systems with distinct caspase-3 and caspase-9 activation^[3].

N6-benzyladenosine (0-100 μ M; 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 μ M), over human adenosine kinase^[4].

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

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

Apoptosis Analysis^[3]

Cell Line: HL-60

Concentration: 10 μ M

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.

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Apoptosis Analysis^[5]

Cell Line: U87MG human glioma cell line.

Concentration: 0.3, 0.6, 1.2, 2.5, 5, 10, 20 μ M

Incubation
Time: 48 hours

Result: Inhibited glioma growth by interfering with the mevalonate pathway and inhibiting FPPS.

[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.

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