Product Data Sheet

Product Name: 2-chloro-3-Deazaadenosine
Cat. No.: GC10116

Chemical Properties

Cas. No.	40656-71-1		
Chemical Name	6-chloro-1-β-D-ribofuranosyl-1H-imidazo[4,5-c]pyridin-4-amine		
SMILES	O[C@H]1[C@H](N2C=NC3=C2C=C(Cl)N=C3N)O[C@H](CO)[C@H]1O		
Formula	$C_{11}H_{13}ClN_4O_4$	M.Wt	300.7
Solubility	≤0.25mg/ml in ethanol;2mg/ml in DMSO;2mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	2-chloro-3-Deazaadenosine		

Background

2-chloro-3-Deazaadenosine, a stable analog of adenosine, is an agonist for adenosine receptors [1].

Adenosine receptors are members of G-protein-coupled receptors (GPCRs). Extracellular adenosine acts as a local modulator with a generally cytoprotective function in the body. Extracellular adenosine has been implicated in increasing the ratio of oxygen supply to demand, protecting against ischaemic damage by cell conditioning, triggering anti-inflammatory responses and the promotion of angiogenesis [2].

In vitro: The Ki values of 2-chloro-3-Deazaadenosine for A1, A2A, A2B, and A3 receptors were 0.3, 0.08, 25.5, and 1.9 μM, respectively [1]. 2-chloroadenosine (25 μM) increased activity of platelet adenylate cyclase to about 150–160% of the control value. Higher concentrations of 2-chloroadenosine showed less effect above 100 μM [3].

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In vivo: In the rat with delayed ischaemic damage, Iterative focal injections of 2-chloroadenosine protected against selective hippocampal CA1 loss [4].

References:
[1] Linden J, Thai T, Figler H, et al. Characterization of Human A2B Adenosine Receptors: Radioligand Binding, Western Blotting, and Coupling to Gqin Human Embryonic Kidney 293 Cells and HMC-1 Mast Cells[J]. Molecular Pharmacology, 1999, 56(4): 705-713.
[2] Jacobson K A, Gao Z G. Adenosine receptors as therapeutic targets[J]. Nature Reviews Drug Discovery, 2006, 5(3): 247-264.
[3] Haslam R J, Lynham J A. Activation and inhibition of blood platelet adenylate cyclase by adenosine or by 2-chloroadenosine[J]. Life Sciences, 1972, 11(23): 1143-1154.
[4] Evans M C, Swan J H, Meldrum B S. An adenosine analogue, 2-chloroadenosine, protects against long term development of ischaemic cell loss in the rat hippocampus[J]. Neuroscience letters, 1987, 83(3): 287-292.

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