Data Sheet (Cat.No.T38205)

TargetMol

3-Aminopropylphosphonic Acid

Chemical Properties

CAS No. : 13138-33-5

Formula: C3H10NO3P

Molecular Weight: 139.09

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	3-aminopropylphosphonic acid (3-APPA) is a phosphonic analog of GABA that acts as a partial agonist of GABAB receptors (IC50 = 1.5 μM in a radioligand binding assay).
Targets(IC50)	GABA Receptor
In vitro	3-aminopropylphosphonic acid (IC50 1.5 microM) and 4-aminobutyl-phosphonic acid (IC50 3.9 μM) were much more potent than anticipated from their relatively weak GABAB antagonist actions [1]. 3-aminopropylphosphonic acid was a potent inhibitor (IC50 6μM) of the binding of [3H]GABA to rat brain membranes under GABAB conditions, i.e. in the presence of 0.1 mM isoguvacine and displaceable by 0.1 mM (+)-baclofen [1].
In vivo	3-aminopropylphosphonic acid induces relaxation in unstimulated isolated guinea pig ileum longitudinal muscle and reverses GABA- and baclofen-induced inhibition of twitch responses in isolated guinea pig ileum longitudinal muscle. 3-APPA (5 mg/kg) completely inhibits GABA- and baclofen-induced inhibition of vagally stimulated bronchospasms in guinea pigs. It also reverses the antitussive effect of baclofen in cats when administered at a dose of 3 mg/kg.

Solubility Information

Solubility	Ethanol:PBS (pH 7.2) (1:3): 0.25 mg/mL (1.8 mM),Sonication is recommended. H2O: 105 mg/mL (754.91 mM),Sonication is recommended. DMF: 5 mg/mL (35.95 mM),Sonication is recommended. DMSO: < 1 mg/mL (insoluble or slightly soluble) Ethanol: 30 mg/mL (215.69 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.1896 mL	35.9479 mL	71.8959 mL
5 mM	1.4379 mL	7.1896 mL	14.3792 mL
10 mM	0.719 mL	3.5948 mL	7.1896 mL
50 mM	0.1438 mL	0.719 mL	1.4379 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

C A Drew, et al. Inhibition of baclofen binding to rat cerebellar membranes by phaclofen, saclofen, 3-aminopropylphosphonic acid and related GABAB receptor antagonists. Neurosci Lett. 1990 May 18;113(1):107-10.