Data Sheet (Cat.No.T23366)

TargetMol

Benalfocin hydrochloride

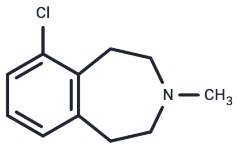
Chemical Properties

CAS No. : 86129-54-6

Formula: C11H15Cl2N

Molecular Weight: 232.15

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	Benalfocin hydrochloride is a potent and selective α2-adrenergic receptor antagonist that blocks α2A, α2B, and α2C receptor subtypes with high affinity, Benalfocin hydrochloride is widely employed in neuroscience research to dissect adrenergic signaling pathways by inhibiting adrenaline-mediated effects on neurotransmission, autonomic regulation, and central nervous system function.
Targets(IC50)	Adrenergic Receptor
In vitro	At a concentration of 10 μM (1 hour incubation), Benalfocin hydrochloride induces the threonine phosphorylation of DARPP-32, a 32 kDa dopamine- and cAMP-regulated phosphoprotein [2].
In vivo	In mouse models treated with the neurotoxin MPTP, Benalfocin hydrochloride (10 mg/kg, i.p.) exhibits neuroprotective effects. Administration of the molecule blocks the depletion of glutathione and attenuates the reduction of dopamine levels. It also increases the activity of superoxide dismutase (SOD), showing antioxidant properties in the brain. In hippocampal studies, Benalfocin hydrochloride stimulates glutamate release by acting on presynaptic D1 receptors [3][4].

Solubility Information

Solubility	DMSO: Soluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.3076 mL	21.5378 mL	43.0756 mL
5 mM	0.8615 mL	4.3076 mL	8.6151 mL
10 mM	0.4308 mL	2.1538 mL	4.3076 mL
50 mM	0.0862 mL	0.4308 mL	0.8615 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

Altar CA, et al. Picomolar affinity of 125I-SCH 23982 for D1 receptors in brain demonstrated with digital subtraction auto radiography. J Neurosci. 1987 Jan;7(1):213-222.
Mayerhofer A, et al. Functional Dopamine-1 Receptors and DARPP-32 Are Expressed in Human Ovary and Granulosa Luteal Cells in Vitro. J Clin Endocrinol Metab. 1999 Jan;84(1):257-64.
Muralikrishnan D, et al. SKF-38393, a dopamine receptor agonist, attenuates 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine-induced neurotoxicity. Brain Res. 2001 Feb 23;892(2):241-7.
Bouron A, et al. The D1 dopamine receptor agonist SKF-38393 stimulates the release of glutamate in the hippocampus. Neuroscience. 1999;94(4):1063-70.