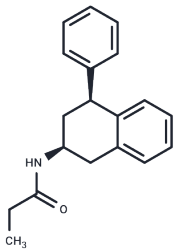
Data Sheet (Cat.No.T14042)

TargetMol

4-P-PDOT

Chemical Properties



CAS No. : 134865-74-0

Formula: C19H21NO

Molecular Weight: 279.38

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	4-P-PDOT (4-phenyl-2- propionamidotetralin) is a potent, selective and affinity Melatonin receptor (MT2) antagonist.
Targets(IC50)	Melatonin Receptor,MT Receptor
In vitro	In CHO-mt1 cells the amidotetraline 4-P-PDOT (10 mM) has no effect on forskolin-stimulated cyclic AMP levels, either alone, or in the presence of Melatonin. However, in CHO-MT2 cells, 4-P-PDOT is an agonist, producing a concentration-dependent inhibition of forskolin stimulated cyclic AMP, with a pEC50 value of 8.72 and intrinsic activity of 0.86[1].
In vivo	4-P-PDOT (0.5-1.0 mg/kg; intravenous injection; klotho mutant mice) treatment significantly reverses antioxidant effects mediated by Melatonin. And significantly reverses the changes in the levels of these GSH-related parameters. 4-P-PDOT also counteracts Melatonin-mediated attenuation in response to the decreases in phospho-ERK expression, Nrf2 nuclear translocation, Nrf2 DNA-binding activity, and GCL mRNA expression in the hippocampi of klotho mutant mice[2]. 4-P-PDOT treatment significantly reverses the memory function of Melatonin-treated klotho mutant mice.

Solubility Information

Solubility	DMSO: 41.67 mg/mL (149.15 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.5794 mL	17.8968 mL	35.7935 mL
5 mM	0.7159 mL	3.5794 mL	7.1587 mL
10 mM	0.3579 mL	1.7897 mL	3.5794 mL
50 mM	0.0716 mL	0.3579 mL	0.7159 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.

Reference

Dubocovich ML. Melatonin receptors: are there multiple subtypes? Trends Pharmacol Sci. 1995 Feb;16(2):50-6.
Xia T J, Jin S W, Liu Y G, et al.Shen Yuan extract exerts a hypnotic effect via the tryptophan/5-hydroxytryptamine/melatonin pathway in mice.Journal of Ethnopharmacology.2024: 117992.
hin EJ, et al. Melatonin attenuates memory impairment induced by Klotho gene deficiency via interactive signaling between MT2 receptor, ERK, and Nrf2-related antioxidant potential. Int J Neuropsychopharmacol. 2014 Dec 30;18 (6). pii: pyu105.
Christopher Browning, et al. Pharmacological characterization of human recombinant melatonin mt1 and MT2 receptors. British Journal of Pharmacology (2000) 129, 877-886.
Dubocovich ML, et al. Melatonin receptor antagonists that differentiate between the human Mel1a and Mel1b recombinant subtypes are used to assess the pharmacological profile of the rabbit retina ML1 presynaptic heteroreceptor. Naunyn Schmiedebergs Arch Pharmacol. 1997 Mar;355(3):365-75.