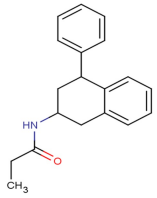
Data Sheet (Cat.No.T14042)

TargetMol
A DRUG SCREENING EXPERT

4-P-PDOT

Chemical Properties



CAS No.:	134865-74-0
Formula:	C19H21NO
Molecular Weight:	279.38
Appearance:	white to beige powder
Storage:	0-4℃ for short term (days to weeks), or -20℃ for long term (months).

Biological Description

Description	4-P-PDOT is a potent, selective and affinity Melatonin receptor (MT2) antagonist.
Targets(IC_{50})	MT2 receptor: None
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) (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.579 mL	17.897 mL	35.794 mL
5 mM	0.716 mL	3.579 mL	7.159 mL
10 mM	0.358 mL	1.790 mL	3.579 mL
50 mM	0.072 mL	0.358 mL	0.716 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

1. Dubocovich ML. Melatonin receptors: are there multiple subtypes? Trends Pharmacol Sci. 1995 Feb;16(2):50-6.
2. 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.
3. Christopher Browning, et al. Pharmacological characterization of human recombinant melatonin mt1 and MT2 receptors. British Journal of Pharmacology (2000) 129, 877-886.
4. 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.

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