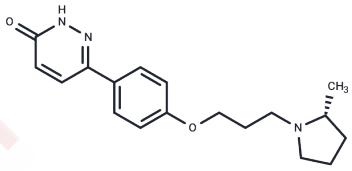
Data Sheet (Cat.No.T32191)

TargetMol

Irdabisant

Chemical Properties



CAS No. : 1005402-19-6

Formula: C18H23N3O2

Molecular Weight: 313.39

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	Irdabisant (CEP-26401) (CEP-26401) is a selective, orally active and blood-brain barrier (BBB) penetrant antagonist/inverse agonist of histamine H3 receptor (H3R) (rat H3R Ki= 7.2 nM, human H3R Ki= 2.0 nM). Irdabisant exhibits relatively low inhibitory activity against hERG current (IC50= 13.8 μM). Irdabisant exhibits cognition-enhancing and wake-promoting activities in the rat social recognition model. Irdabisant can be used for research on schizophrenia or cognitive impairment.
Targets(IC50)	Histamine Receptor
In vitro	Irdabisant exhibits inverse agonist activity with EC50 values of 2.0 nM and 1.1 nM for rat H3R and human H3R, respectively; exhibits antagonist activity with Kb, app values of 1.0 nM and 0.4 nM for rat H3R and human H3R, respectively. Irdabisant exhibits moderate activity at Muscarinic M2 (Ki = 3.7 ± 0.0 μM) and Adrenergic α1A (Ki = 9.8 ± 0.3 μM) receptors, Norepinephrine transporters (Ki = 10 ± 1 μM), Dopamine transporters (Ki = 11 ± 2 μM), and phosphodiesterase PDE3 (IC50 = 15 ± 1 μM). Irdabisant inhibits the cytochrome P450 enzymes CYP1A2, 2C9, 2C19, 2D6, and 3A4 with IC50 values of greater than 30 μM, indicating less potential for drug-drug interactions[1].
In vivo	Irdabisant (0.0001-0.1 mg/kg; i.v. or p.o.; single dosage) improves performance in the rat social recognition model of short-term memory. Irdabisant (0.01-0.3 mg/kg; p.o.; single dosage) dose-dependently inhibits H3R agonist RAMH-induced dipsogenia. Irdabisant (1 mg/kg for i.v. and 3 mg/kg for p.o.; single dosage) is rapidly absorbed with high oral bioavailability in rat and monkey, and exhibits a moderate clearance in monkey and dog compared to the rat[1]. Irdabisant (3-30 mg/kg; p.o.; single dosage) exhibits wake-promoting activity in rat. Irdabisant (3-30 mg/kg; i.p.) increases prepulse inhibition (PPI) in DBA/2NCrl mice[2].

Solubility Information

Solubility	DMSO: 22.5 mg/mL (71.8 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1909 mL	15.9546 mL	31.9091 mL
5 mM	0.6382 mL	3.1909 mL	6.3818 mL
10 mM	0.3191 mL	1.5955 mL	3.1909 mL
50 mM	0.0638 mL	0.3191 mL	0.6382 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

Hudkins RL, et al. Discovery and characterization of 6-{4-[3-(R)-2-methylpyrrolidin-1-yl)propoxy]phenyl}-2H-pyridazin-3-one (CEP-26401, irdabisant): a potent, selective histamine H3 receptor inverse agonist. J Med Chem. 2011 Jul 14;54(13):4781-92.

Raddatz R, et al. CEP-26401 (irdabisant), a potent and selective histamine H_3 receptor antagonist/inverse agonist with cognition-enhancing and wake-promoting activities. J Pharmacol Exp Ther. 2012 Jan;340(1):124-33.

Josef KA, et al. Synthesis of constrained benzocinnolinone analogues of CEP-26401 (irdabisant) as potent, selective histamine H3 receptor inverse agonists. Bioorg Med Chem Lett. 2012 Jun 15;22(12):4198-202.

Becknell NC, et al. Synthesis and evaluation of pyridone-phenoxypropyl-R-2-methylpyrrolidine analogues as histamine H3 receptor antagonists. Bioorg Med Chem Lett. 2011 Dec 1;21(23):7076-80.