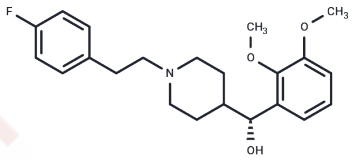
Data Sheet (Cat.No.T5389)

TargetMol

Volinanserin

Chemical Properties



CAS No. : 139290-65-6

Formula: C22H28FNO3

Molecular Weight: 373.46

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	Volinanserin (MDL100907) (MDL 100907) is a potent and selective antagonist of the serotonin receptor 5-HT2 (Ki: 0.36 nM) and shows 300-fold selectivity for 5-HT2 receptor over 5-HT1c, alpha-1 adrenergic and sigma receptors.
Targets(IC50)	5-HT Receptor
In vitro	Volinanserindemonstrated low nanomolar or subnanomolar binding in vitro at the 5-HT2A receptor and showed a > 100-fold separation from all other receptors measured. Volinanserinhad subnanomolar potency as a 5-HT2A antagonist in vitro in reversing 5-HT-stimulated inositol phosphate accumulation in NIH 3T3 cells transfected with the rat 5-HT2A receptor [2].
In vivo	In mice, Volinanserinblocked amphetamine-stimulated locomotion at doses that did not significantly affect apomorphine-stimulated climbing behavior. When administered chronically, Volinanserinselectively reduced the number of spontaneously active A10 neurons [1]. In vivo, Volinanserinpotently inhibited 5-methoxy-N, N-dimethyltryptamine-induced head twitches in mice or 5-hydroxytryptophan-induced head twitches in rats. In vivo, functional tests in mice revealed a > 500-fold separation between doses that produced 5-HT2A antagonism and doses that produced alpha 1-adrenergic or striatal D2 antagonism [2].

Solubility Information

Solubility	DMSO: 125 mg/mL (334.71 mM),Sonication is recommended. Ethanol: 18 mg/mL (48.2 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (10.71 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6777 mL	13.3883 mL	26.7766 mL
5 mM	0.5355 mL	2.6777 mL	5.3553 mL
10 mM	0.2678 mL	1.3388 mL	2.6777 mL
50 mM	0.0536 mL	0.2678 mL	0.5355 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

Sorensen SM, et al. Characterization of the 5-HT2 receptor antagonist MDL 100907 as a putative atypical antipsychotic: behavioral, electrophysiological and neurochemical studies. J Pharmacol Exp Ther. 1993 Aug;266 (2):684-91.
Zhu H, Liu X, Wang X, et al.Gβγ subunit inhibitor decreases DOM-induced head twitch response via the PLCβ/IP3/Ca2+/ERK and cAMP signaling pathways.European Journal of Pharmacology.2023: 176038.
Gao H, Liu X, Xie L, et al.Modulation of DOM-Induced Head-Twitch Response by mGluR2 Agonist/Inverse Agonist is Associated with 5-HT2AR-Mediated Gs Signaling Pathway.Neurochemical Research.2023: 1-13.
Kehne JH, et al. Preclinical characterization of the potential of the putative atypical antipsychotic MDL 100,907 as a potent 5-HT2A antagonist with a favorable CNS safety profile. J Pharmacol Exp Ther. 1996 May;277(2):968-81.
Zhu H, Wang L, Wang X, et al.5-hydroxytryptamine 2C/1A receptors modulate the biphasic dose response of the head twitch response and locomotor activity induced by DOM in mice.Psychopharmacology.2024: 1-16.