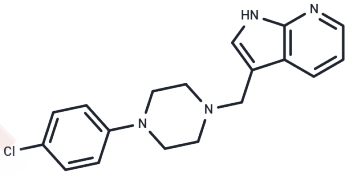
Data Sheet (Cat.No.T11799L)

TargetMol

L-745870

Chemical Properties



CAS No. :	158985-00-3
Formula:	C18H19ClN4
Molecular Weight:	326.82
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	L-745870 is an orally active, selective, and efficient dopamine D4 receptor antagonist that crosses the blood-brain barrier. It also inhibits D2 receptors, 5-HT2 receptors, and α-adrenergic receptors, useful in neurological disease studies.
Targets(IC50)	Dopamine Receptor
In vitro	L-745870 binds specifically to the human dopamine D4 receptor with a binding affinity (Ki) of 0.43 nM. L-745870 (0.1-1 μM) exhibits D4 receptor antagonist activity, reversing dopamine (1 μM) -mediated adenylate cyclase inhibition in hD4HEK and hD4CHO cells. [1]
In vivo	L-745870 (0, 1, or 2 μg/5 μl,icv injection) acts on dopamine D4 receptors to reduce sucrose consumption in a dose-dependent manner in hedonic-fed rat models. [2] L-745870 (5 and 10 mg/kg, systemic injection) inhibited PFC slow rhythm (delta, 2-4 Hz) and enhanced HPCθ in rats. [3]

Solubility Information

Solubility	DMSO: 16 mg/mL (48.96 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: 2 mg/mL (6.12 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	3.0598 mL	15.2989 mL	30.5979 mL
5 mM	0.612 mL	3.0598 mL	6.1196 mL
10 mM	0.306 mL	1.5299 mL	3.0598 mL
50 mM	0.0612 mL	0.306 mL	0.612 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

Patel S, et al. Biological profile of L-745,870, a selective antagonist with high affinity for the dopamine D4 receptor. J Pharmacol Exp Ther. 1997 Nov;283(2):636-47.

López-Alonso VE, et al. The central blockade of the dopamine DR4 receptor decreases sucrose consumption by modifying the microstructure of drinking behavior in male rats. IBRO Neurosci Rep. 2023 Feb 8;14:195-201.

Thörn CW, et al. Differential Effect of Dopamine D4 Receptor Activation on Low-Frequency Oscillations in the Prefrontal Cortex and Hippocampus May Bias the Bidirectional Prefrontal-Hippocampal Coupling. Int J Mol Sci. 2022 Oct 3;23(19):11705.