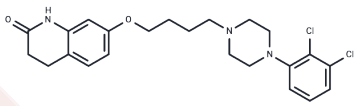
Data Sheet (Cat.No.T1566)

TargetMol

Aripiprazole

Chemical Properties



CAS No. : 129722-12-9

Formula: C23H27Cl2N3O2

Molecular Weight: 448.39

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	Aripiprazole (OPC-14597) is an antipsychotic agent that is structurally related to piperazines and quinolones. It is a partial agonist of SEROTONIN RECEPTOR, 5-HT1A and DOPAMINE D2 RECEPTORS, where it also functions as a post-synaptic antagonist, and an antagonist of SEROTONIN RECEPTOR, 5-HT2A.
Targets(IC50)	5-HT Receptor,Dopamine Receptor
In vitro	Aripiprazole exhibits the highest affinity for h5-HT(2B), hD(2L), and hD(3) dopamine receptors but also demonstrates significant affinity (5-30 nM) for various other 5-HT receptors (5-HT(1A), 5-HT(2A), 5-HT(7)), as well as α(1A)-adrenergic and hH(1)-histamine receptors. Aripiprazole acts as an inverse agonist at the 5-HT(2B) receptor and displays partial agonist activity at 5-HT(2A), 5-HT(2C), D(3), and D(4) receptors. It binds with high affinity to both G protein-coupled and uncoupled states of these receptors. Additionally, Aripiprazole effectively activates D2 receptor-mediated inhibition of cAMP accumulation.
In vivo	Aripiprazole administration at doses of 0.1 mg/kg and 0.3 mg/kg significantly increased dopamine release in the hippocampus of rats. A dose of 0.3 mg/kg slightly, yet significantly, enhanced dopamine release in the medial prefrontal cortex, without affecting dopamine levels in the nucleus accumbens. Additionally, 0.3 mg/kg of Aripiprazole transiently amplified dopamine release in the medial prefrontal cortex induced by 0.1 mg/kg of Haloperidol, but it inhibited dopamine release in the nucleus accumbens. Higher doses of 3.0 mg/kg and 10 mg/kg distinctly decreased dopamine release in the nucleus accumbens, without impacting the medial prefrontal cortex. Aripiprazole reduced the extracellular concentration of 5-HIAA in the medial prefrontal cortex and striatum of drug-naïve rats, but this effect was not observed in rats with chronic Aripiprazole pretreatment.

Solubility Information

Solubility	DMSO: 51 mg/mL (113.74 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 (4.46 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*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	2.2302 mL	11.151 mL	22.302 mL
5 mM	0.446 mL	2.2302 mL	4.4604 mL
10 mM	0.223 mL	1.1151 mL	2.2302 mL
50 mM	0.0446 mL	0.223 mL	0.446 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

Burris KD, et al. J Pharmacol Exp Ther, 2002, 302(1), 381-389.
Sharma K, Dev K K.The Effects of Antipsychotics in Experimental Models of Krabbe Disease.Biomedicines.2023, 11 (5): 1313.
Shapiro DA, et al. Neuropsychopharmacology, 2003, 28(8), 1400-1411.
Xu Z, Guo L, Yu J, et al.Ligand recognition and G protein coupling of trace amine receptor TAAR1.Nature.2023: 1-3.
Keller RK, et al. Biochem Biophys Res Commun, 1999, 266(2), 560-563.
Li Z, et al. Eur J Pharmacol, 2004, 493(1-3), 75-83.
Xu P, Huang S, Zhang H, et al. Structural insights into the lipid and ligand regulation of serotonin receptors[J]. Nature. 2021, 592(7854): 469-473.