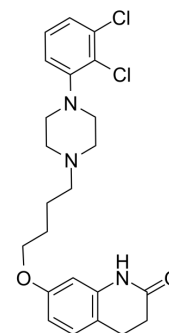


Aripiprazole

Cat. No.:	HY-14546
CAS No.:	129722-12-9
Molecular Formula:	C ₂₃ H ₂₇ Cl ₂ N ₃ O ₂
Molecular Weight:	448
Target:	5-HT Receptor; Dopamine Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMF : 50 mg/mL (111.61 mM; Need ultrasonic)
DMSO : 10 mg/mL (22.32 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.2321 mL	11.1607 mL	22.3214 mL
	5 mM	0.4464 mL	2.2321 mL	4.4643 mL
	10 mM	0.2232 mL	1.1161 mL	2.2321 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMF >> 90% (20% SBE-β-CD in saline)
Solubility: 2.5 mg/mL (5.58 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMF >> 90% corn oil
Solubility: 2.5 mg/mL (5.58 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (5.58 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (5.58 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aripiprazole (OPC-14597), an atypical antipsychotic, is a potent and high-affinity dopamine D2 receptor partial agonist. Aripiprazole is an inverse agonist at 5-HT_{2B} and 5-HT_{2A} receptors and displays partial agonist actions at 5-HT_{1A}, 5-HT_{2C}, D₃, and D₄ receptors. Aripiprazole can be used for the research of schizophrenia and COVID19^{[1][2][3][4]}.

IC₅₀ & Target

5-HT _{1A} Receptor 4.2 nM (Ki)	5-HT _{2A} Receptor	5-HT _{2B} Receptor	5-HT _{2C} Receptor
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	D ₂ Receptor	D ₃ Receptor	D ₄ Receptor												
In Vitro	<p>Aripiprazole potently activates D2 receptor-mediated inhibition of cAMP accumulation^[1]. Aripiprazole shows a greater anti-inflammatory effect on TNF-α, IL-13, IL-17α and fractalkine^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>														
In Vivo	<p>Aripiprazole (0-3 mg/kg, IP, daily) shows some anxiolytic properties^[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <hr/> <table border="1"> <tbody> <tr> <td>Animal Model:</td> <td colspan="2">WAG/Rij rats (N = 6 per dose, 6 months, administration of a mixture of tiletamine/zolazepam)^[4]</td> </tr> <tr> <td>Dosage:</td> <td colspan="2">0, 0.3, 1, 3 mg/kg</td> </tr> <tr> <td>Administration:</td> <td colspan="2">IP, 1 mL/kg, every day at 5 p.m. until the end of the experiments</td> </tr> <tr> <td>Result:</td> <td colspan="2">Showed some anxiolytic properties with the 1 mg/kg dose being the most active.</td> </tr> </tbody> </table>			Animal Model:	WAG/Rij rats (N = 6 per dose, 6 months, administration of a mixture of tiletamine/zolazepam) ^[4]		Dosage:	0, 0.3, 1, 3 mg/kg		Administration:	IP, 1 mL/kg, every day at 5 p.m. until the end of the experiments		Result:	Showed some anxiolytic properties with the 1 mg/kg dose being the most active.	
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CUSTOMER VALIDATION

- Nat Neurosci. 2021 Dec 9.
- Chemosphere. 2019 Jun;225:378-387.
- Acta Pharmacol Sin. 2021 May 11.
- Int J Pharmaceut. 2020 Jun 15;583:119361.
- Int J Mol Sci. 2024 Jan 14, 25(2), 1035.

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REFERENCES

- [1]. Davies MA, et al. Aripiprazole: a novel atypical antipsychotic drug with a uniquely robust pharmacology. CNS Drug Rev. 2004 Winter;10(4):317-36.
- [2]. Crespo-Facorro B, et al. Aripiprazole as a Candidate Treatment of COVID-19 Identified Through Genomic Analysis. Front Pharmacol. 2021 Mar 2;12:646701.
- [3]. Russo E, et al. Ameliorating effects of aripiprazole on cognitive functions and depressive-like behavior in a genetic rat model of absence epilepsy and mild-depression comorbidity. Neuropharmacology. 2013 Jan;64:371-9.
- [4]. Stip E, et al. Aripiprazole in schizophrenia and schizoaffective disorder: A review. Clin Ther. 2010;32 Suppl 1:S3-20.
- [5]. Burris KD, et al. Aripiprazole, a novel antipsychotic, is a high-affinity partial agonist at human dopamine D2 receptors. J Pharmacol Exp Ther. 2002 Jul;302(1):381-9.

Caution: Product has not been fully validated for medical applications. For research use only.

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