Ropinirole hydrochloride

Cat. No.: HY-B0623A

CAS No.: 91374-20-8

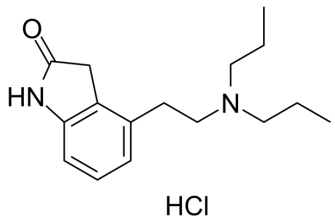
Molecular Formula: $C_{16}H_{25}ClN_2O$

Molecular Weight: 297

Target: Dopamine Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (336.70 mM; Need ultrasonic)
DMSO : 16.67 mg/mL (56.13 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3670 mL	16.8350 mL	33.6700 mL
5 mM	0.6734 mL	3.3670 mL	6.7340 mL
10 mM	0.3367 mL	1.6835 mL	3.3670 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (336.70 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.67 mg/mL (5.62 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (5.62 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (5.62 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ropinirole (SKF 101468) hydrochloride is an orally active, potent D_3/D_2 receptor agonist with a K_i of 29 nM for D_2 receptor. Ropinirole hydrochloride has pEC_{50}s of 7.4, 8.4 and 6.8 for hD_2, hD_3 and hD_4 receptors, respectively. Ropinirole hydrochloride has no affinity for the D_1 receptors. Ropinirole hydrochloride has the potential for Parkinson's disease[1][2].

IC_{50} & Target				
	D_2 Receptor	hD_2 Receptor	hD_3 Receptor	$hD_{4.4}$ Receptor
	29 nM (Ki)	7.4 (pEC50)	8.4 (pEC50)	6.8 (pEC50)

In Vitro	Ropinirole hydrochloride has affinity for D_3 receptors of 10-20 fold higher than the D_2 and D_4 receptors. Ropinirole hydrochloride is weakly active at alpha 2-adrenoceptors and 5-HT_2 receptors but inactive at 5-HT_1, benzodiazepine and gamma-aminobutyric acid receptors or alpha 1 and beta-adrenoceptors[1][2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Ropinirole (0.1-10 mg/kg; i.p.) decreases intracranial self-stimulation (ICSS) thresholds and induces anxiolytic- and antidepressive-like effects without affecting motor activity or spatial memory[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague–Dawley rats weighing 220-350 g[2]
Dosage:	0.1, 1 or 10 mg/kg
Administration:	i.p.
Result:	Decreased ICSS thresholds and induced anxiolytic- and antidepressive-like effects without affecting motor activity or spatial memory.

REFERENCES

[1]. Eden, R.J., et al., Preclinical pharmacology of ropinirole (SK&F 101468-A) a novel dopamine D2 agonist. Pharmacol Biochem Behav, 1991. 38(1): p. 147-54.

[2]. Mavrikaki M, et al. Ropinirole regulates emotionality and neuronal activity markers in the limbic forebrain. Int J Neuropsychopharmacol. 2014 Dec;17(12):1981-93.

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