Rotigotine

Cat. No.: HY-75502

CAS No.: 99755-59-6

Molecular Formula: $C_{19}H_{25}NOS$

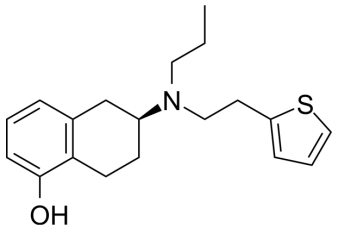
Molecular Weight: 315.47

Target: Dopamine Receptor; Adrenergic Receptor; 5-HT Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (158.49 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1699 mL	15.8494 mL	31.6987 mL
	5 mM	0.6340 mL	3.1699 mL	6.3397 mL
	10 mM	0.3170 mL	1.5849 mL	3.1699 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.92 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.92 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.92 mM); Suspended solution

BIOLOGICAL ACTIVITY

Description

Rotigotine is a potent dopamine receptor agonist with K_i values of 0.71 nM, 4-15 nM, and 83 nM for the dopamine D3 receptor and D2, D5, D4 receptors and dopamine D1 receptor. Rotigotine a partial agonist of the 5-HT1A receptor, and an antagonist of the α2B-adrenergic receptor. Rotigotine can be used for parkinson's disease (PD) research[1][2][3][4].

IC_{50} & Target				
	D_3 Receptor 0.71 nM (Ki)	D_2 Receptor 4-15 nM (Ki)	D_5 Receptor 4-15 nM (Ki)	D_4 Receptor 4-15 nM (Ki)

	D_1 Receptor 83 nM (Ki)	5-HT_{1A} Receptor 30 nM (Ki)	5-HT_7 Receptor 86 nM (Ki)
In Vitro	Rotigotine (0.01-10 μM) slightly protects dopaminergic neurons against MPP^+ toxicity dopamine, protects dopaminergic neurons against rotenone-induced cell death and significantly inhibits ROS production by rotenone[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		
In Vivo	Rotigotine (0.1-5 mg/kg; i.h.; for 14 days; male Sprague–Dawley rats) has antidepressant effect[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

Animal Model:	Male Sprague–Dawley rats[3]
Dosage:	0.1, 0.5, 1, and 5 mg/kg
Administration:	Subcutaneous injection; for 14 days.
Result:	Had antidepressant effect at a dose of 1 mg/kg or less.

CUSTOMER VALIDATION

- Clin Chem. 2019 Dec;65(12):1522-1531.

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REFERENCES

[1]. Wood M, et, al. Rotigotine is a potent agonist at dopamine D1 receptors as well as at dopamine D2 and D3 receptors. Br J Pharmacol. 2015 Feb;172(4):1124-35.

[2]. Radad K, et, al. Neuroprotective effect of rotigotine against complex I inhibitors, MPP and rotenone, in primary mesencephalic cell culture. Folia Neuropathol. 2014;52(2):179-86.

[3]. Bertaina-Anglade V, et, al. Antidepressant properties of rotigotine in experimental models of depression. Eur J Pharmacol. 2006 Oct 24;548(1-3):106-14.

[4]. Scheller D, et, al. The in vitro receptor profile of rotigotine: a new agent for the treatment of Parkinson's disease. Naunyn Schmiedebergs Arch Pharmacol. 2009 Jan;379(1):73-86.

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