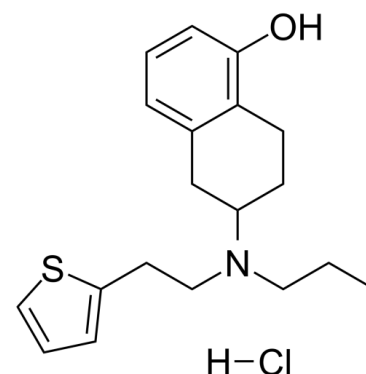


Data Sheet

Product Name:	(Rac)-Rotigotine (hydrochloride)
Cat. No.:	CS-0925
CAS No.:	102120-99-0
Molecular Formula:	C ₁₉ H ₂₆ CINOS
Molecular Weight:	351.93
Target:	5-HT Receptor; Adrenergic Receptor; Dopamine Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Solubility:	DMSO : ≥ 50 mg/mL (142.07 mM)



BIOLOGICAL ACTIVITY:

(Rac)-Rotigotine hydrochloride is a racemate of Rotigotine. Rotigotine is a full agonist of **dopamine receptor**, a partial agonist of the **5-HT_{1A} receptor**, and an antagonist of the **α_{2B}-adrenergic receptor**, with K_{iS} of 0.71 nM, 4-15 nM, and 83 nM for the dopamine D₃ receptor and D₂, D₅, D₄ receptors, and dopamine D₁ receptor. IC_{50} & Target: K_i : Dopamine receptor; 5-HT receptor^{[1][2]} **In Vitro:** Rotigotine has a 10-fold selectivity for D₃ ($pK_i=9.2$) receptors compared with D₂, D₄ and D₅ ($pK_i=8.5-8.0$) and a 100-fold selectivity compared with D₁ receptors ($pK_i=7.2$). In functional studies, Rotigotine behaves as full agonist at all dopamine receptors but notably the potency for stimulation of D₁ receptors is similar to that for D₂ and D₃ receptors (pEC_{50} respectively: 9.0, 9.4-8.6, 9.7)^[1]. Rotigotine (10 μ M) decreases the number of THir neurons by 40% in primary mesencephalic cell culture. Rotigotine (0.01 μ M) slightly protects dopaminergic neurons against MPP⁺ toxicity, significantly protects dopaminergic neurons against rotenone-induced cell death, and significantly inhibits ROS production by rotenone^[4].

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]. 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.
- [3]. Fenu S, et al. In vivo dopamine agonist properties of rotigotine: Role of D₁ and D₂ receptors. *Eur J Pharmacol.* 2016 Oct 5;788:183-91.
- [4]. 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.

CAIndexNames:

1-Naphthalenol, 5,6,7,8-tetrahydro-6-[propyl[2-(2-thienyl)ethyl]amino]-, hydrochloride (1:1)

SMILES:

OC1=C2CCC(N(CCC)CCC3=CC=CS3)CC2=CC=C1.[H]Cl

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

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