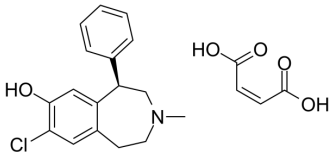
SCH-23390 maleate

Cat. No.:	HY-108400
CAS No.:	87134-87-0
Molecular Formula:	$C_{21}H_{22}ClNO_5$
Molecular Weight:	403.86
Target:	Dopamine Receptor; 5-HT Receptor; Potassium Channel
Pathway:	GPCR/G Protein; Neuronal Signaling; Membrane Transporter/Ion Channel
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	SCH-23390 maleate (R-(+)-SCH-23390 maleate) is a potent and selective dopamine D_1-like receptor antagonist with K_is of 0.2 nM and 0.3 nM for the D_1 and D_5 receptor, respectively. SCH-23390 maleate is a potent and high efficacy human 5-HT_{2C} receptor agonist with a K_i of 9.3 nM. SCH-23390 maleate also binds with high affinity to the 5-HT_2 and 5-HT_{1C} receptors. SCH-23390 maleate inhibits G protein-coupled inwardly rectifying potassium (GIRK) channels with an IC_{50} of 268 nM[1][2][3].

IC_{50} & Target	D_1 Receptor	D_5 Receptor	5-HT_{2C} Receptor	GIRK
	0.2 nM (Ki)	0.3 nM (Ki)	9.3 nM (Ki)	268 nM (IC_{50})

In Vitro	SCH-23390 (1 μM) treatment reverses the inhibitory effects of Isosibiricin on NLRP3 expression and the cleavages of caspase-1 and IL-1β in the LPS-induced BV-2 cells. SCH-23390 could reverse the Isosibiricin-mediated inhibition of the NLRP3/caspase-1 inflammasome pathway[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	SCH-23390 can abolish generalized seizures evoked by the chemoconvulsants: pilocarpine and soman. SCH-23390 has also been used in studies of other neurological disorders in which the dopamine system has been implicated, such as psychosis and Parkinson's disease. Apart from the study of neurological disorders, SCH-23390 has been extensively used as a tool in the topographical determination of brain D_1 receptors in rodents, nonhuman primates, and humans[1]. SCH-23390 is a very short-acting compound with an elimination half-life of around 25 min following administration of 0.3 mg/kg i.p. in the rat[1]. SCH-23390 augments dopamine-induced ductus constriction in CD-1 mouse vessels under newborn O_2 conditions[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2020 Feb 18;11(1):941.
- Microbiome. 2020 Aug 20;8(1):120.
- Acta Pharmacol Sin. 2020 Feb;41(2):173-180.
- Int Immunopharmacol. 2020 Nov;88:106963.
- Viruses. 2021, 13(8), 1533.

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REFERENCES

[1]. Bourne JA. SCH 23390: the first selective dopamine D1-like receptor antagonist. CNS Drug Rev. 2001 Winter;7(4):399-414.

[2]. Millan MJ, et al. The "selective" dopamine D1 receptor antagonist, SCH23390, is a potent and high efficacy agonist at cloned human serotonin2C receptors. Psychopharmacology (Berl). 2001 Jun;156(1):58-62.

[3]. Kuzhikandathil EV, et al. Classic D1 dopamine receptor antagonist R-(+)-7-chloro-8-hydroxy-3-methyl-1-phenyl-2,3,4,5-tetrahydro-1H-3-benzazepine hydrochloride (SCH23390) directly inhibits G protein-coupled inwardly rectifying potassium channels. Mol Pharmacol. 2002 Jul;62(1):119-26.

[4]. Wang YH, et al. Isosibiricin inhibits microglial activation by targeting the dopamine D1/D2 receptor-dependent NLRP3/caspase-1 inflammasome pathway. Acta Pharmacol Sin. 2020 Feb;41(2):173-180.

[5]. Crockett SL, et al. Role of dopamine and selective dopamine receptor agonists on mouse ductus arteriosus tone and responsiveness. Pediatr Res. 2019 Dec 9.

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