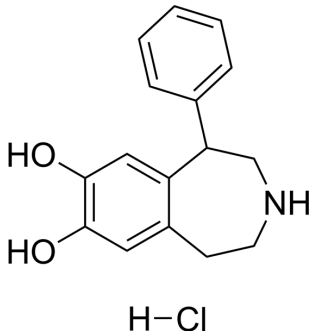
SKF 38393 hydrochloride

Cat. No.:	HY-12520A
CAS No.:	62717-42-4
Molecular Formula:	$C_{16}H_{18}ClNO_2$
Molecular Weight:	291.77
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

DMSO : ≥ 34 mg/mL (116.53 mM)

H_2O : 10 mg/mL (34.27 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	3.4274 mL	17.1368 mL	34.2736 mL
5 mM	0.6855 mL	3.4274 mL	6.8547 mL
10 mM	0.3427 mL	1.7137 mL	3.4274 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SKF 38393 hydrochloride is a selective agonist of the dopamine D1 receptor (D1DR) with an IC_{50} of 110 nM[1].

IC_{50} & Target

D_1 Receptor

In Vitro

SKF-38393 hydrochloride induces a similar change in cytomorphology and increases the levels of media cAMP[2].

?SKF-38393 hydrochloride (10 μmol/L; 1 hour) induces increased threonine-phosphorylation of DA- and cAMP-regulated phosphoprotein of Mr 32 kD (DARPP-32) in cultured GC cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2].

Cell Line:	GC cells

Concentration:	10 μmol/L
Incubation Time:	1 hour
Result:	Induced increased threonine-phosphorylation of DA- and cAMP-regulated phosphoprotein of Mr 32 kD (DARPP-32) in cultured GC cells.

In Vivo

SKF-38393 hydrochloride (10 mg/kg; i.p.) blocks the 1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) -induced depletion of glutathione[3].
?SKF-38393 hydrochloride attenuates MPTP-induced depletion of dopamine[3].
?SKF-38393 hydrochloride enhances the activity of superoxide dismutase and hence mimics the action of Selegiline[3].
?SKF-38393 hydrochloride enhances the frequency but not the amplitude of tetrodotoxin-resistant excitatory postsynaptic currents which argues for a presynaptic locus of D1 action[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Balb/c mice (20-25 g)[3].
Dosage:	5 mg/kg, 10 mg/kg
Administration:	Intraperitoneal injection
Result:	Blocked the MPTP-induced depletion of glutathione and attenuated MPTP-induced depletion of dopamine.

CUSTOMER VALIDATION

- Neuron. 2024 Jan 23:S0896-6273(24)00001-1.
- Microbiome. 2020 Aug 20;8(1):120.
- EMBO Rep. 2022 Jan 17;e53191.
- Free Radic Biol Med. 2023 Mar 23;202:2-16.
- Neurobiol Aging. 2021 Jun;102:1-16.

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REFERENCES

[1]. Altar CA, et al. Picomolar affinity of 125I-SCH 23982 for D1 receptors in brain demonstrated with digital subtraction auto radiography. J Neurosci. 1987 Jan;7(1):213-222.

[2]. Mayerhofer A, et al. Functional Dopamine-1 Receptors and DARPP-32 Are Expressed in Human Ovary and Granulosa Luteal Cells in Vitro. J Clin Endocrinol Metab. 1999 Jan;84(1):257-64.

[3]. Muralikrishnan D, et al. SKF-38393, a dopamine receptor agonist, attenuates 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine-induced neurotoxicity. Brain Res. 2001 Feb 23;892(2):241-7.

[4]. Bouron A, et al. The D1 dopamine receptor agonist SKF-38393 stimulates the release of glutamate in the hippocampus. Neuroscience. 1999;94(4):1063-70.

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

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