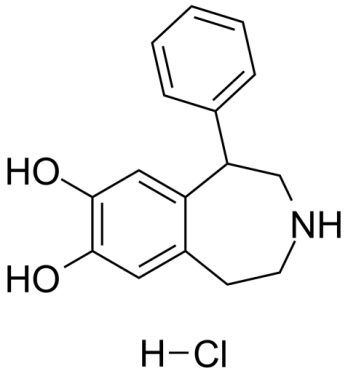
Data Sheet

Product Name:	SKF 38393 (hydrochloride)
Cat. No.:	CS-5354
CAS No.:	62717-42-4
Molecular Formula:	C16H18ClNO2
Molecular Weight:	291.77
Target:	Dopamine Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Solubility:	DMSO : ≥ 34 mg/mL (116.53 mM)



BIOLOGICAL ACTIVITY:

SKF 38393 hydrochloride is a selective agonist of the **dopamine D1 receptor (D1DR)** with an **IC_{50}** of 110 nM[1]. IC50 & Target: IC50: 110 nM (D1DR) **In Vitro:** The selective D1-R agonist SKF-38393 (hydrochloride) induces a similar change in cytomorphology and increased 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].

In Vivo: SKF-38393 (hydrochloride) (10 mg/kg; i.p.; every 16 hours) 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].

PROTOCOL (Extracted from published papers and Only for reference)

Cell cultures [2] Primary mixed cell cultures (glial cells/neurons) were prepared from three- to five-day-old rat hippocampi. The experimental procedure has been explained in detail elsewhere. The electrophysiological experiments have been carried out 13 to 17 days after the dissociation and plating of the cells on poly-l-ornithine-coated glass coverslips. SKF-38393 were prepared fresh on the day of the experiments. Most drugs were prepared in bidistilled water except forskolin and dideoxyforskolin which were dissolved in DMSO and sulpiride in ethanol. The final concentration in the bathing medium of the vehicle never exceded 0.1%. All experiments were performed at room temperature. Data are presented as means S.E.M. The statistical significance of the results was assessed by using parametric and non-parametric statistical tests. When appropriate, statitical comparisons were made by one-way ANOVA followed by Dunnett's test. Animal administration [3] The male Wistar rats weighing 200-250 g were housed in groups of six under controlled conditions (12h light/dark cycle, 22 ± 2°C). Rats had free access to standard laboratory food and water. Rats were habituated to the animal room for 1 week. To minimize stress, the animals were accustomed to handling and intraperitoneal (i.p.) and subcutaneous (s.c.) injections (0.9% saline, 2 ml/kg) for 4 days before the experiments. The rats were injected s.c. with R(±)-SKF 38393 hydrobromide (5, 10 and 20 mg/kg) or with vehicle (0.1% ascorbic acid in saline; 1 ml/kg). In experiments with dopamine D1-like receptor antagonism, rats were subjected to an acute s.c. administration of either R(+)-SCH 23390 hydrochloride (0.5 and 1 mg/kg) or respective vehicle (saline, 1 ml/kg) 30 min before SKF 38393 (10 mg/kg) injection. In experiments with cocaine pretreatment, rats were injected acutely or repeatedly (once daily for 5 consecutive days) with either cocaine hydrochloride (25 mg/kg, i.p.) or vehicle (saline, 2 ml/kg). Then, 2 or 24 hours after single or the last dose of cocaine, the challenging dose of SKF 38393 (10 mg/kg) was given.

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.

CAIndexNames:

1H-3-Benzazepine-7,8-diol, 2,3,4,5-tetrahydro-1-phenyl-, hydrochloride (1:1)

SMILES:

OC1=C(O)C=C2C(C3=CC=CC=C3)CNCCC2=C1.[H]Cl

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