

Product Data Sheet

Product Name: SKF38393 HCl

Cat. No.: GC17729

Chemical Properties

Cas. No. 62717-42-4

Chemical Name 1-phenyl-2,3,4,5-tetrahydro-1H-benzo[d]azepine-7,8-diol hydrochloride

SMILES OC1=C(O)C=C2C(CCNCC2C3=CC=CC=C3)=C1.Cl

Formula $C_{16}H_{18}ClNO_2$ M.Wt 291.77

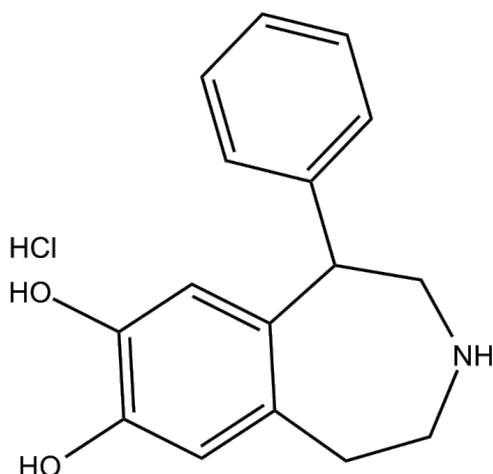
Solubility ≥ 29.2 mg/mL in DMSO, ≥ 3 mg/mL in EtOH with ultrasonic and warming,
 ≥ 14.75 mg/mL in Water with ultrasonic

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

SKF38393 HCl (SKF38393) is a selective dopamine D1 receptor agonist [1], with an IC50 value of

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110 nM [2].

There are two functional types of dopamine receptors, D1 and D2 receptors [3]. The stimulation of the D1 receptor (D1R) in prefrontal cortex (PFC) results in an 'inverted-U' dose-response. Either too little or too much D1R stimulation can impair spatial working memory [4].

6-OHDA reduced the specific expression of mRNAs to encode substance P and D1 dopamine receptor in striatonigral neurons. Subsequently daily injections of SKF-38393 reversed this reduction effect. The treatment with SKF-38393 also increased dynorphin mRNA [5]. D1Rs activate cyclic AMP-dependent protein kinases, stimulate adenylyl cyclase, regulate neuron growth and differentiation, modify dopamine D2 receptor-mediated events and influence behavior [3]. In a 96-well plate assay, the plating of MCF-7 cells was involved in the breast cancer in vitro screening procedure. After 1 day, treatment with SKF 38393 was applied to cells for 2 days. Data showed that SKF 38393 significantly decrease the proliferation of MCF-7 cells. The IC50 value was 0.1 +/- 0.03 μ M [6].

In locally anesthetized, artificially respired, gallamine-treated rats, i.v. administration of SKF 38393 significantly altered dopamine cell activity. In these rats, firing rate increases and decreases were also observed [7].

References:

- [1]. Rimondini R, Ferré S, Giménez-Llort L, et al. Differential effects of selective adenosine A1 and A2A receptor agonists on dopamine receptor agonist-induced behavioral responses in rats. European journal of pharmacology, 1998, 347(2): 153-158.
- [2]. Altar CA, Marien MR. Picomolar affinity of 125I-SCH 23982 for D1 receptors in brain demonstrated with digital subtraction autoradiography. The Journal of neuroscience, 1987, 7(1): 213-222.
- [3]. Sunahara RK, Niznik HB, Weiner DM, et al. Human dopamine D1 receptor encoded by an intronless gene on chromosome 5. 1990, 347:80-83.
- [4]. Vijayraghavan S, Wang M, Birnbaum SG, et al. Inverted-U dopamine D1 receptor actions on prefrontal neurons engaged in working memory. Nature neuroscience, 2007, 10(3): 376-384.
- [5]. Gerfen CR, Engber TM, Mahan LC, et al. D1 and D2 dopamine receptor-regulated gene expression of striatonigral and striatopallidal neurons. Science, 1990, 250(4986): 1429-1432.
- [6]. Johnson DE, Ochieng J, Evans SL. The growth inhibitory properties of a dopamine agonist (SKF 38393) on MCF-7 cells. Anti-cancer drugs, 1995, 6(3): 471-474.
- [7]. Carlson JH, Bergstrom DA, Weick BG, et al. Neurophysiological investigation of effects of the D-

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1 agonist SKF 38393 on tonic activity of substantia nigra dopamine neurons. Synapse, 1987, 1(5): 411-416.

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