Sertraline hydrochloride

Cat. No.: HY-B0176A

CAS No.: 79559-97-0

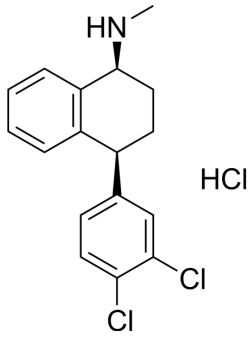
Molecular Formula: $C_{17}H_{18}Cl_3N$

Molecular Weight: 342.69

Target: Serotonin Transporter

Pathway: Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 1 year; -20°C, 6 months (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (145.90 mM; Need ultrasonic)
H_2O : 2.86 mg/mL (8.35 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9181 mL	14.5904 mL	29.1809 mL
5 mM	0.5836 mL	2.9181 mL	5.8362 mL
10 mM	0.2918 mL	1.4590 mL	2.9181 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sertraline hydrochloride is an antidepressant of the selective serotonin reuptake inhibitor (SSRI) class. Sertraline hydrochloride is researched for a number of diseases, such as major depressive disorder and obsessive[1][2].

In Vitro

Sertraline (1 μM, 12 hours) inhibits high mobility group box 1 (HMGB1)- or tumor necrosis factor-α (TNF-α)-induced microglial activation and inflammatory mediator production in microglia[3].
?Sertraline (1 μM) inhibits the HMGB1/toll-like receptor 4 (TLR4)- and TNF-α/TNF receptor 1 (TNFR1)-mediated nuclear factor-kappa B (NF-κB) activation in HMGB1- or TNF-α-stimulated microglia[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Sertraline (10 mg/kg) is shown to produce the optimal anti-depression effectsin chronic unpredictable mild stress (CUMS)-exposed mice[3].

?Sertraline (10 mg/kg; a single i.p.) significantly reduces the immobility time during forced swim test (FST) in all female animals[4].

?Sertraline (10 mg/kg; a single i.p.) does not alter spontaneous locomotor activity in all three genotypes regardless of sex difference[4].

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

Animal Model:	Aromatase-knockout ($Ar^{-/-}$) mice[4]
Dosage:	10 mg/kg
Administration:	A single i.p. administration
Result:	Reduced the immobility time during FST in all genotypes, except male $Ar^{+/-}$ mice.

CUSTOMER VALIDATION

- Autophagy. 2020 Dec;16(12):2140-2155.
- J Exp Clin Cancer Res. 2021 May 18;40(1):173.
- Brit J Pharmacol. 2020 Nov;177(22):5224-5245.
- Commun Biol. 2022 Jun 23;5(1):619.
- Int Immunopharmacol. 2018 Dec 10;67:119-128.

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REFERENCES

[1]. Murdoch D, et al. Sertraline. A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic potential in depression and obsessive-compulsive disorder. Drugs. 1992 Oct;44(4):604-24.

[2]. Koe BK. Preclinical pharmacology of sertraline: a potent and specific inhibitor of serotonin reuptake. J Clin Psychiatry. 1990 Dec;51 Suppl B:13-7.

[3]. Xiang X, et, al. Anti-depressive Effect of Arctiin by Attenuating Neuroinflammation via HMGB1/TLR4- And TNF-α/TNFR1-mediated NF-κB Activation. ACS Chem Neurosci. 2020 Jul 1.

[4]. Lei M, et, al. Sex Differences in Antidepressant Effect of Sertraline in Transgenic Mouse Models. Front Cell Neurosci. 2019 Feb 1; 13:24.

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