Citalopram hydrobromide

Cat. No.: HY-B1287

CAS No.: 59729-32-7

Molecular Formula: $C_{20}H_{22}BrFN_2O$

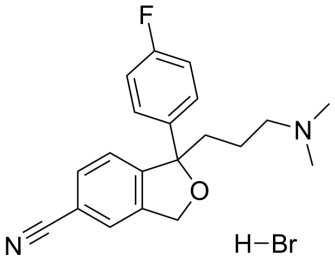
Molecular Weight: 405.3

Target: Serotonin Transporter; Autophagy

Pathway: Neuronal Signaling; Autophagy

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 : ≥ 38 mg/mL (93.76 mM)

H_2O : 10 mg/mL (24.67 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4673 mL	12.3365 mL	24.6731 mL
	5 mM	0.4935 mL	2.4673 mL	4.9346 mL
	10 mM	0.2467 mL	1.2337 mL	2.4673 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 110 mg/mL (271.40 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.17 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Citalopram hydrobromide is a selective serotonin reuptake inhibitor (SSRI). Citalopram hydrobromide inhibits 5-HT uptake into synaptosomes with an IC_{50} of 1.8 nM. Citalopram hydrobromideinhibits the 5-HT uptake in rabbit blood platelets with an IC_{50} of 14 nM. Antidepressant effect[1].

In Vitro

Citalopram(25-150 μM) shows a concentration-dependent cytotoxicity on the viability of rat B104, human SH-SY5Y, IMR32 and Kelly neuroblastoma cell lines and human primary Schwann cells (HSC)[2].

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

Cell Viability Assay[2]

Cell Line:	Rat B104, human SH-SY5Y, IMR32 and Kelly neuroblastoma cells
Concentration:	50, 100, 125, 150 μM for B104 cells 25, 50, 100, 125 μM for SH-SY5Y cells 25, 50, 100, 125, 150 μM for Kelly cells 25, 50, 100, 125 μM for IMR32 cells 50, 100, 125, 150 μM for HSCs
Incubation Time:	24 h ours
Result:	Significantly decreased B104 cell viability, 61%, 33% and 11% at respectively 100, 125 and 150 μM in B104 cell line. Drastically decreased SH-SY5Y cell viability, 17%, 1% at respectively 100 and 125 μM in SH-SY5Y cell line. Significantly decreased Kelly cell viability, 64%, 9% and 0% at respectively 100, 125 and 150 μM in Kelly cell line. Drastically decreased IMR32 cell viability, 36%, 1% and 0% at respectively 50, 100 and 125 μM in IMR32 cell line.

In Vivo

Acute administration of Citalopram (1-10 mg/kg, i.p. 1 h before an elevated plus-maze test) to Spontaneously Hypertensive rats (SHRs), Lewis (LEW) rats, and Wistar-Kyoto (WKY) rats, i.e., rat strains differing for their emotionality, promotes anxiety, and/or hypoactivity, except in WKY rats. In the three strains, such a pretreatment increased central 5-HT levels and/or decreased 5-hydroxyindoleacetic acid levels[3].

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

Animal Model:	Male rats from the SHR, LEW, and WKY strains, aged 6–8 weeks[3]
Dosage:	1, 3.3, or 10 mg/kg
Administration:	Injected i.p.
Result:	Increased significantly 5-HT in SHRs and WKY rats, and decreased 5-HIAA in all strains, in either a dose-dependent (LEW and WKY rats) or a dose-independent (SHRs) manner.

CUSTOMER VALIDATION

- Comput Struct Biotechnol J. 2023 Jul 7, 21, 3490-3502.
- Eur J Pharmacol. 2018 Sep 27;841:57-66.
- Neurochem Int. 2019 Dec;131:104552.
- J Clin Psychopharmacol. 2021 Jun 11.
- Pharmacol Res Perspect. 2020 Apr;8(2):e00575.

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REFERENCES

[1]. J Hyttel. Citalopram--pharmacological profile of a specific serotonin uptake inhibitor with antidepressant activity. Prog Neuropsychopharmacol Biol Psychiatry. 1982;6(3):277-95.

[2]. Laurent Sakka, et al. Assessment of citalopram and escitalopram on neuroblastoma cell lines. Cell toxicity and gene modulation. Oncotarget. 2017 Jun 27;8(26):42789-

42807.

[3]. F Pollier, et al. Serotonin reuptake inhibition by citalopram in rat strains differing for their emotionality. Neuropsychopharmacology. 2000 Jan;22(1):64-76.

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