Citalopram

Cat. No.: HY-121203

CAS No.: 59729-33-8

Molecular Formula: $C_{20}H_{21}FN_2O$

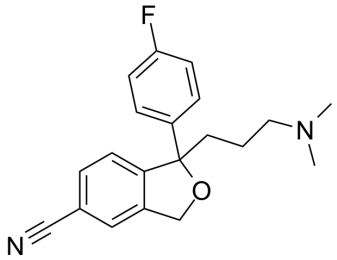
Molecular Weight: 324.39

Target: Serotonin Transporter

Pathway: Neuronal Signaling

Storage:

Pure form	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (308.27 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0827 mL	15.4135 mL	30.8271 mL
	5 mM	0.6165 mL	3.0827 mL	6.1654 mL
	10 mM	0.3083 mL	1.5414 mL	3.0827 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: 2.5 mg/mL (7.71 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Citalopram is a racemate mixture of the active S(+)-enantiomer (Escitalopram; HY-14258) and R(-)-enantiomer. Citalopram is an orally active selective serotonin reuptake inhibitor (SSRI). Citalopram is an antidepressant and enhances serotoninergic neurotransmission[1][2][3].

In Vitro

Citalopram (25-175 μM; 24 h) shows a concentration-dependent cytotoxicity[3].
Citalopram (100 μM; 24 h) strongly down-regulates MYBL2, BIRC5, BARD1, AURKA, CCNA2 and CCNE1 in B104 cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[3]

Cell Line:	Rat B104, human SH-SY5Y, IMR32 and Kelly neuroblastoma cells
Concentration:	25, 50, 100, 125, 150, 175 μM
Incubation Time:	24 h
Result:	Showed a concentration-dependent cytotoxicity.

RT-PCR[3]

Cell Line:	B104 cells
Concentration:	100 μM
Incubation Time:	24 h
Result:	Strongly down-regulated MYBL2, BIRC5, BARD1, AURKA, CCNA2 and CCNE1 in B104 cells.

In Vivo

Citalopram (5-40 mg/kg; i.p.) reduces immobility time in DBA/2J mice but not in C57BL/6J mice[4].

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

Animal Model:	Male C57BL/6J and DBA/2J mice, aged 5-7 weeks, 16-20 g[4]
Dosage:	5-40 mg/kg
Administration:	IP
Result:	Reduced immobility time in DBA/2J mice but not in C57BL/6J mice.

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]. 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.

[2]. Zeng-Liang Jin, et al. Mouse strain differences in SSRI sensitivity correlate with serotonin transporter binding and function. Sci Rep. 2017 Aug 17;7(1):8631.

[3]. Carlsson B, et al. Enantioselective analysis of citalopram and escitalopram in postmortem blood together with genotyping for CYP2D6 and CYP2C19. J Anal Toxicol. 2009;33(2):65-76.

[4]. Milne RJ, et al. Citalopram. A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic potential in depressive illness. Drugs. 1991;41(3):450-477.

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

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