Escitalopram oxalate

Cat. No.: HY-14258A

CAS No.: 219861-08-2

Molecular Formula: $C_{22}H_{23}FN_2O_5$

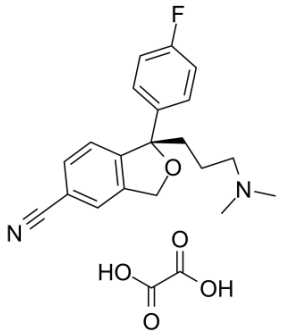
Molecular Weight: 414.43

Target: Serotonin Transporter

Pathway: Neuronal Signaling

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 14.29 mg/mL (34.48 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4130 mL	12.0648 mL	24.1295 mL
5 mM	0.4826 mL	2.4130 mL	4.8259 mL
10 mM	0.2413 mL	1.2065 mL	2.4130 mL

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

BIOLOGICAL ACTIVITY

Description

Escitalopram ((S)-Citalopram) oxalate, the S-enantiomer of racemic Citalopram, is a selective serotonin reuptake inhibitor (SSRI) with a K_i of 0.89 nM. Escitalopram oxalate has ~30 fold higher binding affinity than its R(-)-enantiomer and shows selectivity over both dopamine transporter (DAT) and norepinephrine transporter (NET). Escitalopram oxalate is an antidepressant for the research of major depression[1][2].

IC_{50} & Target

Ki: 0.89 nM (serotonin transporter), 10500 nM (DAT), 8150 nM (NET)[1]

In Vivo

Escitalopram (10 mg/kg; i.p.; daily for 28 days) ameliorates cognitive impairments and selectively attenuates phosphorylated tau accumulation in stressed rats[3].

Chronic administration of Escitalopram (daily; drinking water for a total of 4 months) significantly reduces plaque load by 28% and 34% at 2.5 and 5 mg/d, respectively [4].

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

Animal Model:	Male Sprague-Dawley rats[3]
Dosage:	10 mg/kg
Administration:	I.p.; daily for 28 days
Result:	Could selectively decrease phosphorylated tau accumulation in the hippocampus of stressed rats and could distinctly alleviate the hyperactivity of the HPA axis in both depressive and resistant rats.

Animal Model:	APP-PS1 hemizygous female mice (4 months of age)[4]
Dosage:	2.5-5 mg/kg
Administration:	Daily; drinking water for a total of 4 months
Result:	At both doses significantly reduced plaque burden within the brains of these mice compared to littermate controls that drank only water. Hippocampal plaque load was significantly reduced by 28.7% and 34.4 % for ESC 2.5 mg/day and 5 mg/day, respectively.

REFERENCES

[1]. Zhang, P., et al., Structure-activity relationships for a novel series of citalopram (1-(3-(dimethylamino)propyl)-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-5-carbon itrile) analogues at monoamine transporters. J Med Chem, 2010. 53(16): p. 6112-21.

[2]. Pastoor, D. and J. Gobburu, Clinical pharmacology review of escitalopram for the treatment of depression. Expert Opin Drug Metab Toxicol, 2014. 10(1): p. 121-8.

[3]. Wu C , et al. Escitalopram alleviates stress-induced Alzheimer's disease-like tau pathologies and cognitive deficits by reducing hypothalamic-pituitary-adrenal axis reactivity and insulin/GSK-3β signal pathway activity. Neurobiol Aging. 2018;67:137-147.

[4]. Cirrito JR, et al. Effect of escitalopram on Aβ levels and plaque load in an Alzheimer mouse model. Neurology. 2020;95(19):e2666-e2674.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA