



# SZABO SCANDIC

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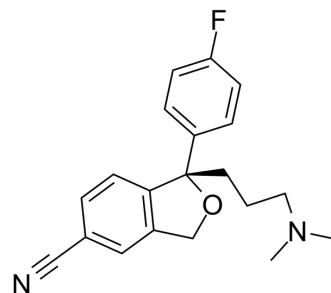
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## Escitalopram

<b>Cat. No.:</b>	HY-14258	
<b>CAS No.:</b>	128196-01-0	
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>21</sub> FN <sub>2</sub> O	
<b>Molecular Weight:</b>	324.39	
<b>Target:</b>	Serotonin Transporter	
<b>Pathway:</b>	Neuronal Signaling	
<b>Storage:</b>	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 6 months -20°C 1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (308.27 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	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.					
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Escitalopram ((S)-Citalopram), the S-enantiomer of racemic Citalopram, is a selective serotonin reuptake inhibitor (SSRI) with a K <sub>i</sub> of 0.89 nM. Escitalopram has -30 fold higher binding affinity than its R(-)-enantiomer and shows selectivity over both dopamine transporter (DAT) and norepinephrine transporter (NET). Escitalopram is an antidepressant for the research of major depression <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Ki: 0.89 nM (serotonin transporter), 10500 nM (DAT), 8150 nM (NET) <sup>[1]</sup>

## In Vivo

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

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<sup>[4]</sup>.

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

Animal Model:	Male Sprague-Dawley rats <sup>[3]</sup>
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) <sup>[4]</sup>
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.

## CUSTOMER VALIDATION

- Phytomedicine. 2023 Dec, 121, 155083.
- Mol Neurobiol. 2022 Mar 1.
- J Clin Psychopharmacol. 2021 Jun 11.

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## 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-carbonitrile) 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-3 $\beta$  signal pathway activity. Neurobiol Aging. 2018;67:137-147.
- [4]. Cirrito JR, et al. Effect of escitalopram on A $\beta$  levels and plaque load in an Alzheimer mouse model. Neurology. 2020;95(19):e2666-e2674.

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

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