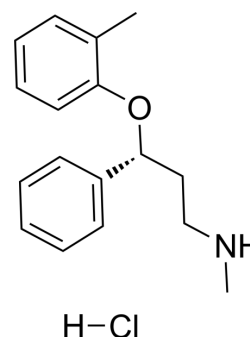


## Atomoxetine hydrochloride

<b>Cat. No.:</b>	HY-17385
<b>CAS No.:</b>	82248-59-7
<b>Molecular Formula:</b>	C <sub>17</sub> H <sub>22</sub> ClNO
<b>Molecular Weight:</b>	291.82
<b>Target:</b>	Adrenergic Receptor; Serotonin Transporter; Sodium Channel
<b>Pathway:</b>	GPCR/G Protein; Neuronal Signaling; Membrane Transporter/Ion Channel
<b>Storage:</b>	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 : ≥ 100 mg/mL (342.68 mM)  
 H<sub>2</sub>O : 50 mg/mL (171.34 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.4268 mL	17.1338 mL	34.2677 mL
	5 mM	0.6854 mL	3.4268 mL	6.8535 mL
	10 mM	0.3427 mL	1.7134 mL	3.4268 mL

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

#### In Vivo

- Add each solvent one by one: PBS  
Solubility: 8.33 mg/mL (28.54 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (8.57 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (8.57 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (8.57 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Atomoxetine (Tomoxetine) hydrochloride is a selective noradrenaline reuptake inhibitor with K<sub>i</sub> values of 5 nM, 77 nM and 1451 nM for norepinephrine (NE), serotonin (5-HT) and dopamine (DA) transporters, respectively. Atomoxetine hydrochloride is a potent Na<sup>+</sup> channels (VGSCs) blocker. Atomoxetine hydrochloride can be used for attention-deficit hyperactivity disorder (ADHD) research<sup>[1][2][3]</sup>.

<b>In Vitro</b>	<p>Atomoxetine (Tomoxetine) (1-100 <math>\mu</math>M; 0.5-20 seconds; tsA201 cells) hydrochloride interacts with the human heart muscle sodium channel (<math>hNa_v1.5</math>) in a state and dose-dependent manner<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																
<b>In Vivo</b>	<p>Atomoxetine (0.3-3 mg/kg; i.p.; 0-4 hours; male Sprague-Dawley rats) hydrochloride increases extracellular norepinephrine and dopamine by 3-fold and increases Fos expression in the rat prefrontal cortex<sup>[1]</sup>.</p> <p>Atomoxetine (0.1-5 mg/kg; i.p. and p.o; for 14 days; spontaneously hypertensive rat) hydrochloride can improve behaviors associated with ADHD in rats<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Male Sprague-Dawley rats<sup>[1]</sup></td> </tr> <tr> <td>Dosage:</td> <td>0.3, 1 and 3 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Intraperitoneal injection; for 4 hours</td> </tr> <tr> <td>Result:</td> <td>Increased the number of cells expressing Fos-like immunoreactivity in PFC 3.7-fold and increased extracellular norepinephrine and dopamine by 3-fold.</td> </tr> </table> <table border="1"> <tr> <td>Animal Model:</td> <td>Spontaneously hypertensive rat (SHR)<sup>[3]</sup></td> </tr> <tr> <td>Dosage:</td> <td>0.1, 0.3, 1.25 and 5.0 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Intraperitoneal injection and oral administration; for 14 days</td> </tr> <tr> <td>Result:</td> <td>Had non-impact on the measurement of motor activity.</td> </tr> </table>	Animal Model:	Male Sprague-Dawley rats <sup>[1]</sup>	Dosage:	0.3, 1 and 3 mg/kg	Administration:	Intraperitoneal injection; for 4 hours	Result:	Increased the number of cells expressing Fos-like immunoreactivity in PFC 3.7-fold and increased extracellular norepinephrine and dopamine by 3-fold.	Animal Model:	Spontaneously hypertensive rat (SHR) <sup>[3]</sup>	Dosage:	0.1, 0.3, 1.25 and 5.0 mg/kg	Administration:	Intraperitoneal injection and oral administration; for 14 days	Result:	Had non-impact on the measurement of motor activity.
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## CUSTOMER VALIDATION

- Brain Behav Immun. 2021 Jan 4;S0889-1591(20)32487-9.
- Ecotoxicol Environ Saf. 2024 Jul 23;282:116766.
- Behav Brain Res. 28 October 2021, 113642.
- School of Pharmacy & Pharmaceutical Sciences Trinity College Institute of Neuroscience Trinity College, University of Dublin. 2019 Mar.

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## REFERENCES

- [1]. Turner M, et, al. Effects of atomoxetine on locomotor activity and impulsivity in the spontaneously hypertensive rat. Behav Brain Res. 2013 Apr 15;243:28-37.
- [2]. Föhr KJ, et, al. Block of Voltage-Gated Sodium Channels by Atomoxetine in a State- and Use-dependent Manner. Front Pharmacol. 2021 Feb 25;12:622489.
- [3]. Bymaster FP, et, al. Atomoxetine increases extracellular levels of norepinephrine and dopamine in prefrontal cortex of rat: a potential mechanism for efficacy in attention deficit/hyperactivity disorder. Neuropsychopharmacology. 2002 Nov;27(5):699-711.

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

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