

Atomoxetine

Chemical Properties

CAS No. : 83015-26-3

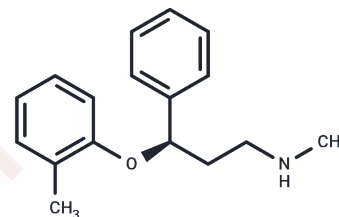
Formula: C₁₇H₂₁NO

Molecular Weight: 255.35

Store at low temperature

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Atomoxetine (HSDB 7352) is a selective norepinephrine inhibitor that may cause an increase in blood pressure by increasing norepinephrine concentrations in peripheral sympathetic neurons. Atomoxetine is a highly selective antagonist of presynaptic norepinephrine transporters with little or no affinity for other norepinephrine receptors or other neurotransmitter transporters or receptors, but has little or no affinity for 5-hydroxytryptamine transporter. Atomoxetine selectively inhibits reuptake of norepinephrine and can be used to treat adolescents with ADHD and chronic tics.
Targets(IC50)	Norepinephrine, Serotonin Transporter, Sodium Channel
In vitro	Atomoxetine (Tomoxetine) exhibits state- and dose-dependent interaction with the human cardiac sodium channel (hNav1.5) in tsA201 cells, with concentrations ranging from 1 to 100 μM and exposure durations of 0.5 to 20 seconds.[2]
In vivo	Administration of Atomoxetine (Tomoxetine) at doses of 0.3-3 mg/kg (i.p.) for a duration of 0-4 hours in male Sprague-Dawley rats results in a threefold increase in extracellular norepinephrine and dopamine levels, along with an increase in Fos expression observed in the prefrontal cortex.[1] Furthermore, Atomoxetine (Tomoxetine) at doses of 0.1-5 mg/kg (i.p. and p.o.) administered over a period of 14 days in spontaneously hypertensive rats demonstrates the potential to ameliorate ADHD-related behaviors in rats.[3]

Solubility Information

Solubility	DMSO: Soluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.9162 mL	19.581 mL	39.1619 mL
5 mM	0.7832 mL	3.9162 mL	7.8324 mL
10 mM	0.3916 mL	1.9581 mL	3.9162 mL
50 mM	0.0783 mL	0.3916 mL	0.7832 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Turner M, et al. Effects of atomoxetine on locomotor activity and impulsivity in the spontaneously hypertensive rat. *Behav Brain Res.* 2013;243:28-37.
- Föhr KJ, et al. Block of Voltage-Gated Sodium Channels by Atomoxetine in a State- and Use-dependent Manner. *Front Pharmacol.* 2021;12:622489.
- 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;27(5):699-711.
- Mosholder AD, et al. Incidence of Heart Failure and Cardiomyopathy Following Initiation of Medications for Attention-Deficit/Hyperactivity Disorder: A Descriptive Study. *J Clin Psychopharmacol.* 2018;38(5):505-508.
- Cortese S, et al. Comparative efficacy and tolerability of medications for attention-deficit hyperactivity disorder in children, adolescents, and adults: a systematic review and network meta-analysis. *Lancet Psychiatry.* 2018;5(9):727-738.
- Froehlich T, et al. Using ADHD Medications to Treat Coexisting ADHD and Reading Disorders: A Systematic Review. *Clin Pharmacol Ther.* 2018;104(4):619-637.
- van den Brink RL, et al. Amplification and Suppression of Distinct Brain-wide Activity Patterns by Catecholamines. *Journal of Neuroscience.* 2018;38(34):7476-7491.

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