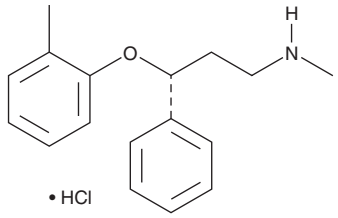
PRODUCT INFORMATION

Atomoxetine (hydrochloride)

Item No. 22248

CAS Registry No.:	82248-59-7
Formal Name:	N-methyl-γR-(2-methylphenoxy)-benzenepropanamine, monohydrochloride
Synonym:	LY139603
MF:	$C_{17}H_{21}NO \bullet HCl$
FW:	291.8
Purity:	≥98%
UV/Vis.:	λ_{max}: 279 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Atomoxetine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the atomoxetine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Atomoxetine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of atomoxetine (hydrochloride) in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of atomoxetine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of atomoxetine (hydrochloride) in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Atomoxetine is a selective norepinephrine reuptake inhibitor with K_i values of 5, 77, and 1,451 nM for norepinephrine, serotonin, and dopamine transporters, respectively.[1] It is selective over the choline, GABA, and adenosine transporters, and a number of neurotransmitter receptors, ion channels, second messengers, and brain/gut peptides. In the rat prefrontal cortex (PFC), it increases extracellular norepinephrine and dopamine by 3-fold and increases Fos expression. Atomoxetine (0.1, 0.5, and 1 mg/kg) reduces premature responding, a measure of impulsivity, by rats in the 5-choice serial reaction time test (5CSRTT) in a dose-dependent manner.[2] It also has neuroprotective effects when administered prior to ischemic damage in a gerbil model of transient cerebral ischemia.[3] Formulations containing atomoxetine have been used in the treatment of attention-deficit hyperactivity disorder (ADHD) in children, adolescents, and adults.

References

1. Bymaster, F.P., Katner, J.S., Nelson, D.L., *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* **27(5)**, 699-711 (2002).
2. Blondeau, C. and Dellu-Hagedorn, F. Dimensional analysis of ADHD subtypes in rats. *Biol. Psychiatry* **61(12)**, 1340-1350 (2007).
3. Park, J.H., Shin, B.N., Chen, B.H., *et al.* Neuroprotection and reduced gliosis by atomoxetine pretreatment in a gerbil model of transient cerebral ischemia. *J. Neurol. Sci.* **359(1-2)**, 373-380 (2015).

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