Atomoxetine
Item No. 22248

CAS Registry No.: 83015-26-3
Formal Name: N-methyl-γR-(2-methylphenoxy)-benzenepropanamine
MF: C_{17}H_{21}NO
FW: 255.4
Purity: ≥98%
UV/Vis.: \( \lambda_{\text{max}} = 279 \) nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

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

Laboratory Procedures

Atomoxetine is supplied as a crystalline solid. A stock solution may be made by dissolving the atomoxetine in the solvent of choice. Atomoxetine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of atomoxetine 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 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of atomoxetine 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 Kᵢ 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