



# LKT Laboratories, Inc.

## Amitriptyline Hydrochloride

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### Product Information

**Product ID** A5235

**CAS No.** 549-18-8

**Chemical Name**

**Synonym** 3-(10,11-Dihydro-5H-dibenzo[a,d]cycloheptene-5-ylidene)-N,N-dimethyl-1-propanamine hydrochloride

**Formula** C<sub>20</sub>H<sub>23</sub>N · HCl

**Formula Wt.** 313.86

**Melting Point** 195-197°C

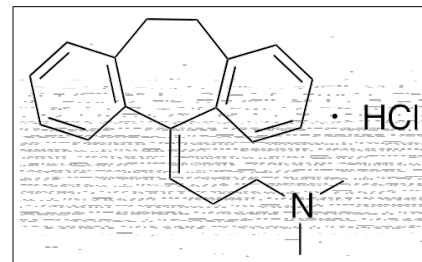
**Purity** ≥98%

**Solubility** Soluble in water, ethanol, DMSO

**Store Temp** Ambient

**Ship Temp** Ambient

**Description** Amitriptyline exhibits antidepressant, antipsychotic, analgesic, and antinociceptive activities; it acts as an antagonist at 5-HT<sub>2A/2C/6/7</sub> receptors, M<sub>1-5</sub> muscarinic acetylcholine receptors (mAChRs), H<sub>1/4</sub> histamine receptors, α<sub>1</sub>-adrenergic receptors, and also on the serotonin transporter (SERT) and norepinephrine transporter (NET). Additionally, amitriptyline acts as an agonist at α<sub>1</sub> receptors and TrkA/B receptors. Amitriptyline inhibits shaker-related Kv1.1 (KCNA1), Kv7.2 (KCNQ2), and Kv7.3 (KCNQ3) voltage-gated K<sup>+</sup> channels and L-type voltage-gated Ca<sup>2+</sup> channels; it inhibits expression of Nav1.1 (SCN1A) and Nav1.2 (SCN2A) voltage-gated Na<sup>+</sup> channels and activates ryanodine RyR2 receptors. Amitriptyline also decreases levels of α<sub>1</sub>-adrenergic receptors in the cortex and cerebellum in vivo. In animal models of chronic constrictive injury and neuropathic pain, amitriptyline decreases thermal hyperanalgesia. In PC12 neurons, this compound exhibits neuroprotective activity, increasing neurite outgrowth and decreasing cell death. Amitriptyline is also a function inhibitor of acid sphingomyelinase (FIASMA). TEST!!!!!!



### Pricing and Availability

**Bulk quantities available upon request**

Product ID	Size	List Price
A5235	10 g	\$46.40
A5235	25 g	\$92.90
A5235	100 g	\$268.80

**References** Effects of chronic administration of amitriptyline, gabapentin and minocycline on spinal brain-derived neurotrophic factor expression and neuropathic pain behavior in a rat chronic constriction injury model. Vanelder P, Rouwette T, Kozicz T, Heylen R, Van Zundert J, Roubos EW, Vissers K. Reg Anesth Pain Med. 2013 Mar-Apr;38(2):124-30. PMID: 23337936.

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Werling LL, Keller A, Frank JG, et al. A comparison of the binding profiles of dextromethorphan, memantine, fluoxetine and amitriptyline: treatment of involuntary emotional expression disorder. Exp Neurol. 2007 Oct;207(2):248-57. PMID: 17689532.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.