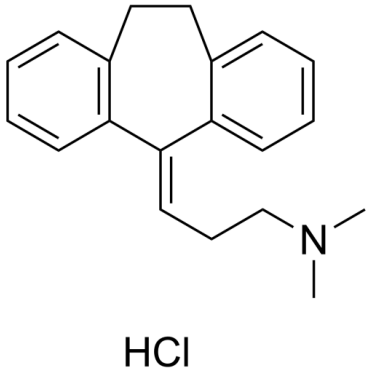
Data Sheet

Product Name:	Amitriptyline (hydrochloride)
Cat. No.:	CS-2751
CAS No.:	549-18-8
Molecular Formula:	$C_{20}H_{24}ClN$
Molecular Weight:	313.86
Target:	5-HT Receptor; Adrenergic Receptor; Histamine Receptor; mAChR; Serotonin Transporter; Sodium Channel; Trk Receptor
Pathway:	GPCR/G Protein; Immunology/Inflammation; Membrane Transporter/Ion Channel; Neuronal Signaling; Protein Tyrosine Kinase/RTK
Solubility:	H2O : ≥ 50 mg/mL (159.31 mM); DMSO : ≥ 100 mg/mL (318.61 mM)



BIOLOGICAL ACTIVITY:

Amitriptyline hydrochloride is an inhibitor of **serotonin reuptake transporter (SERT)** and **noradrenaline reuptake transporter (NET)**, with K_is of 3.45 nM and 13.3 nM for human SERT and NET, respectively. Amitriptyline hydrochloride also weakly binds to **dopamine reuptake transporter (DAT)** with a K_i of 2.58 μM. Amitriptyline hydrochloride also inhibits **adrenergic**, **muscarinic**, **histamine** and **5-HT receptors**. Amitriptyline hydrochloride is a **TrkA** and **TrkB** receptors agonist with potent neurotrophic activity. Amitriptyline hydrochloride has antidepressant activity[1][2][3].

References:

[1]. Jang, S.W., et al., Amitriptyline is a TrkA and TrkB receptor agonist that promotes TrkA/TrkB heterodimerization and has potent neurotrophic activity. Chem Biol, 2009. 16(6): p. 644-56.

[2]. Kim Lawson. A Brief Review of the Pharmacology of Amitriptyline and Clinical Outcomes in Treating Fibromyalgia. Biomedicines. 2017 Jun; 5(2): 24.

[3]. S Neil Vaishnavi , et al. Milnacipran: a comparative analysis of human monoamine uptake and transporter binding affinity. Biol Psychiatry. 2004 Feb 1;55(3):320-2.

CAIndexNames:

1-Propanamine,3-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-ylidene)-N,N-dimethyl-, hydrochloride (1:1)

SMILES:

CN(C)CC/C=C1C2=CC=CC=C2CCC3=C\1C=CC=C3.Cl

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

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