Amitriptyline-d3 hydrochloride

Cat. No.: HY-135096

CAS No.: 342611-00-1

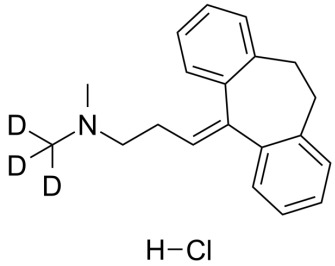
Molecular Formula: $C_{20}H_{21}D_3ClN$

Molecular Weight: 316.88

Target: Sodium Channel; Serotonin Transporter; 5-HT Receptor; Histamine Receptor; mAChR; Adrenergic Receptor; Trk Receptor

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; GPCR/G Protein; Immunology/Inflammation; Protein Tyrosine Kinase/RTK

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (157.79 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1558 mL	15.7788 mL	31.5577 mL
	5 mM	0.6312 mL	3.1558 mL	6.3115 mL
	10 mM	0.3156 mL	1.5779 mL	3.1558 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Amitriptyline-d3 hydrochloride is the deuterium labeled Amitriptyline (hydrochloride). 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].

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. 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.;Kim Lawson. A Brief Review of the Pharmacology of Amitriptyline and C

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