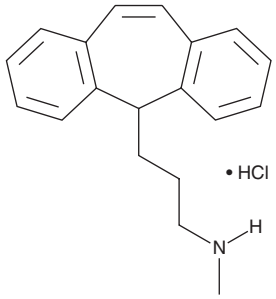
PRODUCT INFORMATION

Protriptyline (hydrochloride)

Item No. 31179

CAS Registry No.:	1225-55-4
Formal Name:	N-methyl-5H-dibenzo[a,d]cycloheptene-5-propanamine, monohydrochloride
Synonym:	Protryptyline
MF:	$C_{19}H_{21}N \bullet HCl$
FW:	299.8
Purity:	≥98%
UV/Vis.:	λ_{max}: 294 nm
Supplied as:	A 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

Protriptyline (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the protriptyline (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Protriptyline (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of protriptyline (hydrochloride) in ethanol and DMF is approximately 5 mg/ml and approximately 3 mg/ml in DMSO.

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 protriptyline (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of protriptyline (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Protriptyline is a tricyclic antidepressant.[1] It binds to the norepinephrine and serotonin (5-HT) transporters with K_d values of 1.41 and 19.6 nM, respectively. Protriptyline also binds to histamine H_1, muscarinic acetylcholine, and α_1-adrenergic receptors (K_ds = 25, 25, and 130 nM, respectively).[2] It inhibits norepinephrine uptake into rat whole brain and hypothalamic synaptosomes (IC_{50}s = 12 and 0.55 µM, respectively) and 5-HT uptake into rat whole brain synaptosomes (IC_{50} = 5.5 µM).[3] Protriptyline (1 mg/kg, i.v.) inhibits food-induced cataplexy in narcoleptic dogs.[4] Formulations containing protriptyline have been used in the treatment of depression.

References

1. Tatsumi, M., Groshan, K., Blakely, R.D., *et al.* Pharmacological profile of antidepressants and related compounds at human monoamine transporters. *Eur. J. Pharmacol.* **340(2-3)**, 249-258 (1997).
2. Richelson, E. and Nelson, A. Antagonism by antidepressants of neurotransmitter receptors of normal human brain *in vitro*. *J. Pharmacol. Exp. Ther.* **230(1)**, 94-102 (1984).
3. Schacht, U. and Heptner, W. Effect of nomifensine (HOE 984), a new antidepressant, on uptake of noradrenaline and serotonin and on release of noradrenaline in rat brain synaptosomes. *Biochem. Pharmacol.* **23(24)**, 3413-3422 (1974).
4. Foutz, A.S., Delashaw, J.B., Jr., Guilleminault, C., *et al.* Monoaminergic mechanisms and experimental cataplexy. *Ann. Neurol.* **10(4)**, 369-376 (1981).

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