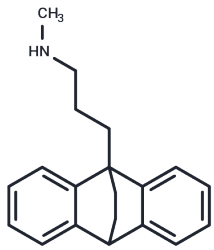
Data Sheet (Cat.No.T0172)

TargetMol

Maprotiline hydrochloride

Chemical Properties



CAS No. :	10347-81-6
Formula:	C20H24ClN
Molecular Weight:	313.86
Storage:	Powder: -20°C for 3 years | In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	Maprotiline hydrochloride (Psymion) is a bridged-ring tetracyclic antidepressant that is both mechanistically and functionally similar to the tricyclic antidepressants, including side effects associated with its use.
Targets(IC50)	Apoptosis,ERK,5-HT Receptor,Adrenergic Receptor,AChR,Norepinephrine,Autophagy, Histamine Receptor
In vitro	Maprotiline inhibits HERG channels expressed in HEK cells with an IC50 of 5.2 μM and HERG channels expressed in oocytes with an IC50 of 24 μM. Maprotiline blocks open channels but has no significant effect on closed channels. [1] Maprotiline is atetracyclic antidepressant, which strongly inhibits the uptake of noradrenaline, though it is notable in its lack of inhibition of serotonergic uptake. Maprotiline also has markedly less pronounced alpha-adrenergic blocking activity than amitriptyline. [2] Maprotiline decreases cell viability in a concentration- and time-dependent manner in Neuro-2a cells. Maprotiline induces apoptosis and increases caspase-3 activation. Maprotiline also induces [Ca(2+)](i) increases which involves the mobilization of intracellular Ca(2+) stored in the endoplasmic reticulum. [3]
In vivo	Maprotiline results in significantly increases GluR1 and GluR2/3 subunit expression in the nucleus accumbens and dorsal striatum of mice as detected by immunohistochemistry; and significantly increases GluR1 and GluR2/3 expression in the hippocampus, as demonstrated by Western blot analysis. [4] Maprotiline has a potent anti-inflammatory effect in rats and this effect is linked to the peripheral and supraspinal actions of the drug. [5] Maprotiline impairs learning when administered before training, but no statistically significant effect is evident when administered after training. [6]

Solubility Information

Solubility	Ethanol: 23.00 mg/mL (73.28 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 98.00 mg/mL (312.24 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.00 mg/mL (6.37 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and*

In vivo Formulation	*used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1861 mL	15.9307 mL	31.8613 mL
5 mM	0.6372 mL	3.1861 mL	6.3723 mL
10 mM	0.3186 mL	1.5931 mL	3.1861 mL
50 mM	0.0637 mL	0.3186 mL	0.6372 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Ferrer-Villada T, et al. Eur J Pharmacol,2006, 531(1-3), 1-8.
Arenas MC, et al. Behav Brain Res,2006, 166(1), 150-158.
Jan CR, et al. Toxicology,2013, 304, 1-12.
Chang KL, et al. Cancer Lett. 2009 Apr 8;276(1):14-20.
Hajhashemi V, et al. Inflamm Res,2010, 59(12), 1053-1059.