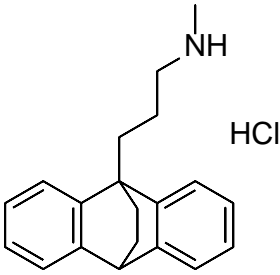


Product data sheet



MedKoo Cat#: 318172 Name: Maprotiline Hydrochlorine CAS: 10347-81-6 Chemical Formula: C ₂₀ H ₂₄ ClN Molecular Weight: 313.869	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Maprotiline Hydrochloride is the hydrochloride salt form of maprotiline, a tetracyclic antidepressant closely related to the tricyclic antidepressants with adrenergic activity and sedative properties. Maprotiline hydrochloride exerts its effect by blocking the re-uptake of norepinephrine, thereby increasing the synaptic concentration of norepinephrine in the central nervous system and subsequently prolonging the action of norepinephrine on central receptors.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	20.0	63.72
DMSO	58.78	187.26
Ethanol	19.5	62.13
PBS (pH 7.2)	0.1	0.32
Water	2.2	7.01

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.19 mL	15.93 mL	31.87 mL
5 mM	0.64 mL	3.19 mL	6.37 mL
10 mM	0.32 mL	1.59 mL	3.19 mL
50 mM	0.06 mL	0.32 mL	0.64 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Chen W, Liu P, Liu D, Huang H, Feng X, Fang F, Li L, Wu J, Liu L, Solow-Cordero DE, Hu Y. Maprotiline restores ER homeostasis and rescues neurodegeneration via Histamine Receptor H1 inhibition in retinal ganglion cells. *Nat Commun.* 2022 Nov 10;13(1):6796. doi: 10.1038/s41467-022-34682-y. PMID: 36357388; PMCID: PMC9649812.
2. Jan CR, Su JA, Teng CC, Sheu ML, Lin PY, Chi MC, Chang CH, Liao WC, Kuo CC, Chou CT. Mechanism of maprotiline-induced apoptosis: role of [Ca²⁺]_i, ERK, JNK and caspase-3 signaling pathways. *Toxicology.* 2013 Feb 8;304:1-12. doi: 10.1016/j.tox.2012.11.013. Epub 2012 Dec 3. PMID: 23219590.

In vivo study

1. Hajhashemi V, Sadeghi H, Minaiyan M, Movahedian A, Talebi A. Central and peripheral anti-inflammatory effects of maprotiline on carrageenan-induced paw edema in rats. *Inflamm Res.* 2010 Dec;59(12):1053-9. doi: 10.1007/s00011-010-0225-1. Epub 2010 Jun 24. PMID: 20574769.

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2. Parra A, Martos A, Monleón S, Carmen Arenas M, Vinader-Caerols C. Effects of acute and chronic maprotiline administration on inhibitory avoidance in male mice. Behav Brain Res. 2000 Apr;109(1):1-7. doi: 10.1016/s0166-4328(99)00149-7. PMID: 10699652.

7. Bioactivity

Biological target:

Maprotiline hydrochloride is a selective noradrenalin re-uptake inhibitor and a tetracyclic antidepressant.

In vitro activity

Maprotiline is a tetracyclic antidepressant and possesses a highly selective norepinephrine reuptake ability. This study found that maprotiline decreased cell viability in a concentration- and time-dependent manner in Neuro-2a cells. Maprotiline induced apoptosis and increased caspase-3 activation.

Reference: Toxicology. 2013 Feb 8;304:1-12. <https://pubmed.ncbi.nlm.nih.gov/23219590/>

In vivo activity

The anti-inflammatory effect of systemic maprotiline (12.5, 25 and 50 mg kg⁻¹) was assessed using a rat paw edema model. Systemic, intracerebroventricular and subplantar application of maprotiline significantly inhibited peripheral edema, but intrathecal maprotiline did not alter the degree of paw swelling.

Reference: Inflamm Res. 2010 Dec;59(12):1053-9. <https://pubmed.ncbi.nlm.nih.gov/20574769/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.