

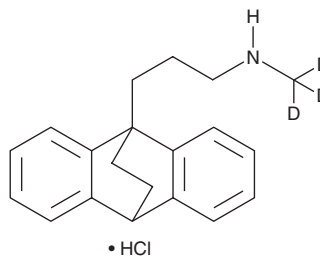
# PRODUCT INFORMATION



## Maprotiline-d<sub>3</sub> (hydrochloride)

Item No. 33301

**CAS Registry No.:** 1329496-63-0  
**Formal Name:** N-methyl-d<sub>3</sub>-9,10-ethanoanthracene-9(10H)-propanamine, monohydrochloride  
**Synonym:** Ba 34276-d<sub>3</sub>  
**MF:** C<sub>20</sub>H<sub>20</sub>D<sub>3</sub>N • HCl  
**FW:** 316.9  
**Chemical Purity:** ≥98% (Maprotiline)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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

Maprotiline-d<sub>3</sub> (hydrochloride) is intended for use as an internal standard for the quantification of maprotiline (Item No. 15892) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Maprotiline-d<sub>3</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the maprotiline-d<sub>3</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Maprotiline-d<sub>3</sub> (hydrochloride) is soluble in methanol and DMSO.

### Description

Maprotiline-d<sub>3</sub> is intended for use as an internal standard for the quantification of maprotiline (Item No. 15892) by GC- or LC-MS. Maprotiline is a tricyclic antidepressant.<sup>1,2</sup> It binds to the norepinephrine transporter (NET; K<sub>d</sub> = 11 nM) and is selective for NET over the serotonin (5-HT) and dopamine transporters (K<sub>d</sub>s = 5,800 and 1,000 nM, respectively).<sup>2</sup> Maprotiline also binds to the 5-HT receptor subtype 5-HT<sub>2A</sub> (K<sub>i</sub> = 51 nM), as well as histamine H<sub>1</sub>, muscarinic acetylcholine, α<sub>1</sub>-adrenergic, and dopamine D<sub>2</sub> receptors (K<sub>d</sub>s = 2, 570, 90, and 350 nM, respectively).<sup>3</sup> *In vivo*, maprotiline inhibits norepinephrine reuptake in rat brain and peripheral tissues.<sup>4</sup> It reduces isolation-induced aggressive behavior and inhibits electrical foot-shock stimulation-induced belligerence in mice when administered at doses ranging from 3 to 10 mg/kg. Maprotiline (20 μM) prevents acid sphingomyelinase activation and subsequent ceramide release induced by infection with replication-deficient vesicular stomatitis virus pseudoviral particles (pp-VSV) presenting the severe acute respiratory coronavirus 2 (SARS-CoV-2) spike protein in Vero cells, an effect that can be overcome with exogenous application of C16 ceramide (Item No. 10681).<sup>5</sup> Formulations containing maprotiline have been used in the treatment of depression and anxiety. This product is also available as an analytical reference material (Item Nos. 32702 | 33077).

### References

1. Spencer, P.S. *Br. J. Clin. Pharmacol.* **4(Suppl 2)**, 57S-68S (1977).
2. Tatsumi, M., Groshan, K., Blakely, R.D., et al. *Eur. J. Pharmacol.* **340(2-3)**, 249-258 (1997).
3. Richelson, E., and Nelson, A. *J. Pharmacol. Exp. Ther.* **230(1)**, 94-102 (1984).
4. Pinder, R.M., Brogden, R.N., Speight, T.M., et al. *Drugs* **13(5)**, 321-352 (1977).
5. Carpinteiro, A., Edwards, M.J., Hoffmann, M., et al. *Cell Rep. Med.* **1(8)**, 100142 (2020).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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