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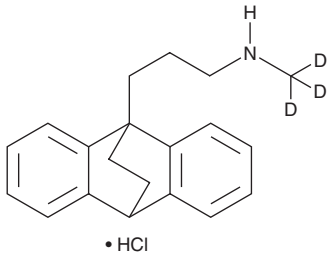
PRODUCT INFORMATION

Maprotiline-d_3 (hydrochloride)

Item No. 33301

CAS Registry No.:	1329496-63-0
Formal Name:	N-methyl-d_3-9,10-ethanoanthracene-9(10H)-propanamine, monohydrochloride
Synonym:	Ba 34276-d_3
MF:	$C_{20}H_{20}D_3N \bullet HCl$
FW:	316.9
Chemical Purity:	≥98% (Maprotiline)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_3); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



Laboratory Procedures

Maprotiline-d_3 (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_3 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the maprotiline-d_3 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Maprotiline-d_3 (hydrochloride) is soluble in methanol and DMSO.

Description

Maprotiline-d_3 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.[1,2] It binds to the norepinephrine transporter (NET; K_d = 11 nM) and is selective for NET over the serotonin (5-HT) and dopamine transporters (K_ds = 5,800 and 1,000 nM, respectively).[2] Maprotiline also binds to the 5-HT receptor subtype 5-HT_{2A} (K_i = 51 nM), as well as histamine H_1, muscarinic acetylcholine, α_1-adrenergic, and dopamine D_2 receptors (K_ds = 2, 570, 90, and 350 nM, respectively).[3] *In vivo*, maprotiline inhibits norepinephrine reuptake in rat brain and peripheral tissues.[4] 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).[5] 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).*

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