

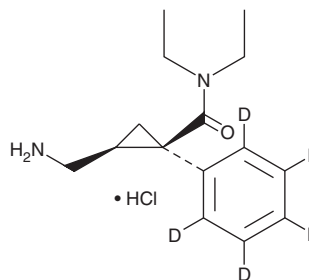
PRODUCT INFORMATION



Milnacipran-d₅ (hydrochloride)

Item No. 31981

Formal Name: (1R,2S)-2-(aminomethyl)-N,N-diethyl-1-(phenyl-d₅)cyclopropane-1-carboxamide, monohydrochloride
MF: C₁₅H₁₇D₅N₂O • HCl
FW: 287.8
Chemical Purity: ≥98% (Milnacipran)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₅); ≤1% d₀
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

Milnacipran-d₅ (hydrochloride) is intended for use as an internal standard for the quantification of milnacipran (Item No. 23837) 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).

Milnacipran-d₅ (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the milnacipran-d₅ (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Milnacipran-d₅ (hydrochloride) is soluble in DMSO and methanol.

Description

Milnacipran is an orally bioavailable serotonin and norepinephrine reuptake inhibitor (SNRI).¹ It selectively inhibits the human serotonin transporter and norepinephrine transporter over the dopamine transporter (IC₅₀s = 420, 77, and 6,100 nM, respectively). It also selectively inhibits sodium-dependent serotonin (Item No. 14332) and norepinephrine (Item No. 16673) uptake over dopamine (Item No. 21992) uptake in rat cerebral cortical synaptosomes (IC₅₀s = 28.0, 29.6, and >10,000 nM, respectively).² Milnacipran is an antagonist of the serotonin (5-HT) receptor subtype 5-HT_{3A} as well as nicotinic acetylcholine receptors (nAChRs; IC₅₀s = 63.5 and 14.3 μM, respectively) but does not inhibit other 5-HT, adrenergic, dopamine, muscarinic acetylcholine, histamine, NMDA, sigma, opioid, or GABA receptors (K_is = >10,000 nM).^{2,3} *In vivo*, milnacipran (30 mg/kg) increases withdrawal threshold and latency in response to tactile and heat stimulation, respectively, in nerve-ligated mice.⁴ Formulations containing milnacipran have been used in the treatment of fibromyalgia pain.

References

1. Chen, C., Dyck, B., Fleck, B.A., *et al.* Studies on the SAR and pharmacophore of milnacipran derivatives as monoamine transporter inhibitors. *Bioorg. Med. Chem.* **18**(4), 1346-1349 (2008).
2. Mochizuki, D., Tsujita, R., Yamada, S., *et al.* Neurochemical and behavioural characterization of milnacipran, a serotonin and noradrenaline reuptake inhibitor in rats. *Psychopharmacology (Berl)* **162**(3), 323-332 (2002).
3. Ueta, K., Suzuki, T., Uchida, I., *et al.* *In vitro* inhibition of recombinant ligand-gated ion channels by high concentrations of milnacipran. *Psychopharmacology (Berl)* **175**(2), 241-246 (2004).
4. Suzuki, T., Ueta, K., Tamagaki, S., *et al.* Antiallodynic and antihyperalgesic effect of milnacipran in mice with spinal nerve ligation. *Anesth. Analg.* **106**(4), 1309-1315 (2008).

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.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM