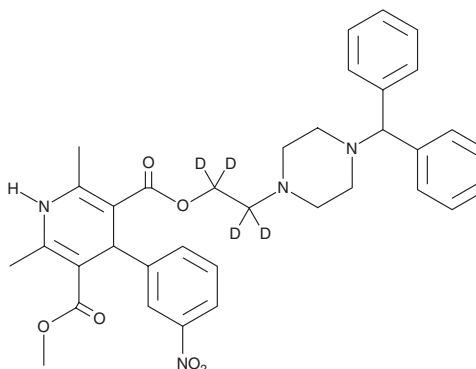


PRODUCT INFORMATION



Manidipine-d₄ Item No. 30768

CAS Registry No.: 1189656-59-4
Formal Name: 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-3,5-pyridinedicarboxylic acid, 3-[2-[4-(diphenylmethyl)-1-piperazinyl]ethyl-d₄] 5-methyl ester
Synonyms: Franidipine-d₄, (±)-Manidipine-d₄
MF: C₃₅H₃₄D₄N₄O₆
FW: 614.7
Chemical Purity: ≥98% (Manidipine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤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

Manidipine-d₄ is intended for use as an internal standard for the quantification of manidipine (Item No. 23614) 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).

Manidipine-d₄ is supplied as a solid. A stock solution may be made by dissolving the manidipine-d₄ in the solvent of choice, which should be purged with an inert gas. Manidipine-d₄ is soluble in methanol.

Description

Manidipine is a dihydropyridine L- and T-type calcium channel blocker.^{1,2,3} It inhibits recombinant rabbit L-type ($\alpha_1C\alpha_2/\delta\beta_{1a}$) and human T-type (α_{1H}) calcium channels expressed in *Xenopus* oocytes and native L-type channels in dissociated guinea pig cardiac ventricular cells (IC_{50} = 2.6 nM). Manidipine inhibits intracellular calcium increases induced by endothelin-1 (ET-1; Item No. 24127) in A_{7r5} rat vascular smooth muscle cells (ED_{50} = 1 nM) and potassium-induced contraction of isolated dog femoral and portal veins (IC_{50} s = 24 and 2.1 nM, respectively).^{4,5} *In vivo*, it lowers blood pressure in spontaneously hypertensive rats (SHRs) when administered at a dose of 10 mg/kg and inhibits left ventricular hypertrophy in rats induced by isoproterenol (Item No. 15592) when administered at a dose of 3 mg/kg.^{6,7} Formulations containing manidipine have been used in the treatment of hypertension.

References

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3. Tohse, N., Takeda, Y., and Kanno, M. *Eur. J. Pharmacol.* **249**(2), 231-233 (1993).
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5. Shibouta, Y., Kitayoshi, T., Kitoh, G., *et al.* *Jpn. J. Pharmacol.* **48**(4), 463-472 (1988).
6. Meguro, K., Aizawa, M., Sohda, T., *et al.* *Chem. Pharm. Bull. (Tokyo)* **33**(9), 3787-3797 (1985).
7. Yoshiyama, M., Takeuchi, K., Kim, S., *et al.* *Jpn. Circ. J.* **62**(1), 47-52 (1998).

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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