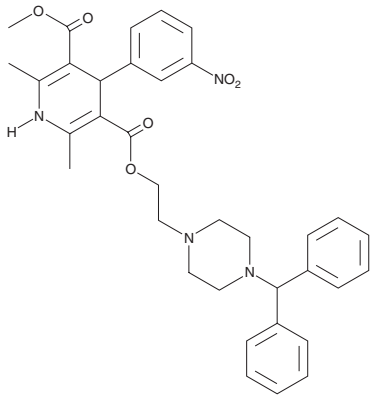
PRODUCT INFORMATION

Manidipine

Item No. 23614



CAS Registry No.:	89226-50-6
Formal Name:	1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-3,5-pyridinedicarboxylic acid, 3-[2-[4-(diphenylmethyl)-1-piperazinyl]ethyl] 5-methyl ester
Synonyms:	CV-4093, Franidipine, (±)-Manidipine
MF:	$C_{35}H_{38}N_4O_6$
FW:	610.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 230, 348 nm
Supplied as:	A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the manidipine in the solvent of choice, which should be purged with an inert gas. Manidipine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of manidipine in ethanol is approximately 15 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Manidipine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, manidipine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Manidipine has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Manidipine is a dihydropyridine L- and T-type calcium channel blocker.[1-3] It blocks recombinant rabbit L-type ($\alpha_{1C}\alpha_2/\delta\beta_{1a}$) and human T-type ($\alpha_{1H}$) 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_7r_5 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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2. Furukawa, T., Nukada, T., Namiki, Y., *et al. Eur. J. Pharmacol.* **613(1-3)**, 100-107 (2009).
3. Tohse, N., Takeda, Y., and Kanno, M. *Eur. J. Pharmacol.* **249(2)**, 231-233 (1993).
4. Huang, S., Simonson, M.S., and Dunn, M.J. *Am. Heart J.* **125(2 Pt 2)**, 589-597 (1993).
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.

WARRANTY AND LIMITATION OF REMEDY
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