

PRODUCT INFORMATION



Amlodipine

Item No. 14838

CAS Registry No.: 88150-42-9
Formal Name: 2-[(2-aminoethoxy)methyl]-4-(2-chlorophenyl)-1,4-dihydro-6-methyl-3,5-pyridinedicarboxylic acid, 3-ethyl 5-methyl ester

Synonyms: Intervask, Pelmec

MF: C₂₀H₂₅ClN₂O₅

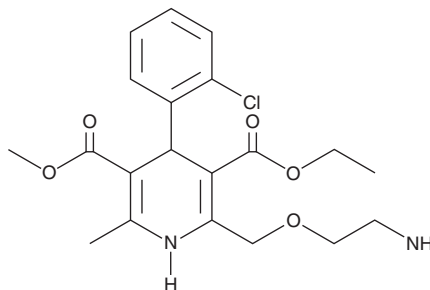
FW: 408.9

Purity: ≥98%

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

Amlodipine is supplied as a crystalline solid. A stock solution may be made by dissolving the amlodipine in the solvent of choice, which should be purged with an inert gas. Amlodipine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of amlodipine in ethanol and DMSO is approximately 12.5 mg/ml and approximately 20 mg/ml in DMF.

Amlodipine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, amlodipine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Amlodipine has a solubility of approximately 0.077 mg/ml in a 1:12 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Amlodipine is a dihydropyridine L-type calcium channel blocker that selectively inhibits calcium influx in cardiac and vascular smooth muscle.¹ Acting as a vasodilator, amlodipine reduces blood pressure by relaxing the smooth muscle in the arterial wall, decreasing total peripheral resistance. It inhibits calcium-induced contractions in depolarized rat aorta with an IC₅₀ value of 1.9 nM, displaying a slow rate of association and dissociation in isolated vascular and cardiac tissues. Amlodipine also demonstrates actions independent of L-type calcium channel blockade by regulating membrane fluidity and cholesterol deposition, stimulating nitric oxide production, acting as an antioxidant, and regulating matrix deposition *in vitro* and *in vivo*.² Formulations containing amlodipine have been used in the treatment of hypertension.

References

- Burges, R.A., Gardiner, D.G., Gwilt, M., *et al.* Calcium channel blocking properties of amlodipine in vascular smooth muscle and cardiac muscle *in vitro*: Evidence for voltage modulation of vascular dihydropyridine receptors. *J. Cardiovasc. Pharmacol.* **9(1)**, 110-119 (1987).
- Mason, R.P., Marche, P., and Hintze, T.H. Novel vascular biology of third-generation L-type calcium channel antagonists: Ancillary actions of amlodipine. *Arterioscler. Thromb. Vasc. Biol.* **23(12)**, 2155-2163 (2003).

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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