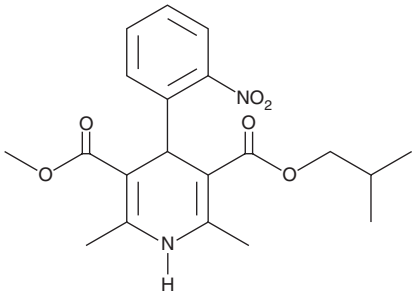
PRODUCT INFORMATION

Nisoldipine

Item No. 20998

CAS Registry No.:	63675-72-9
Formal Name:	1,4-dihydro-2,6-dimethyl-4-(2-nitrophenyl)-3,5-pyridinedicarboxylic acid, 3-methyl 5-(2-methylpropyl) ester
Synonyms:	(±)-BAY-K-5552, (±)-Nisoldipine
MF:	$C_{20}H_{24}N_2O_6$
FW:	388.4
Purity:	≥97%
UV/Vis.:	λ_{max}: 235, 330 nm
Supplied as:	A crystalline solid
Storage:	Room temperature
Stability:	≥4 years



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

Laboratory Procedures

Nisoldipine is supplied as a crystalline solid. A stock solution may be made by dissolving the nisoldipine in the solvent of choice. Nisoldipine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of nisoldipine in ethanol is approximately 3 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Nisoldipine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nisoldipine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Nisoldipine has a solubility of approximately 0.1 mg/ml in a 1:10 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nisoldipine is a calcium channel inhibitor.[1] It binds to calcium channels in isolated rat ventricular membranes (K_d = 0.04 nM) and inhibits calcium uptake by smooth muscle cells.[1,2] Nisoldipine inhibits acetylcholine-induced contraction of isolated rabbit coronary arteries (IC_{50} = 0.03 nM).[1] *In vivo*, nisoldipine (3 mg/kg) reduces ventricular tachycardia and fibrillization and increases survival in a rat model of ventricular arrhythmias induced by myocardial ischemia.[3] Dietary administration of nisoldipine (50-100 mg/kg) reduces systolic blood pressure in spontaneously hypertensive rats.[4] Formulations containing nisoldipine have been used in the treatment of hypertension.

References

1. Knorr, A. The pharmacology of nisoldipine. *Cardiovasc. Drugs Ther.* **1(4)**, 393-402 (1987).
2. Janis, R.A., Shrikhande, A.V., Greguski, R., *et al.* Review of nisoldipine binding studies. *Nisoldipine 1987*. Hugenholtz, P.G., and Meyer, J., editors, 1st edition, *Springer-Verlag* (1987).
3. Fagbemi, O. and Parratt, J.R. Suppression by orally-administered nifedipine, nisoldipine and niludipine of early, life-threatening ventricular arrhythmias resulting from acute myocardial ischaemia. *Br. J. Pharmacol.* **74(1)**, 12-14 (1981).
4. Stasch, J.-P., Kazda, S., Hirth, C., *et al*. Role of nisoldipine on blood pressure, cardiac hypertrophy, and atrial natriuretic peptides in spontaneously hypertensive rats. *Hypertension* **10(3)**, 303-307 (1987).

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