

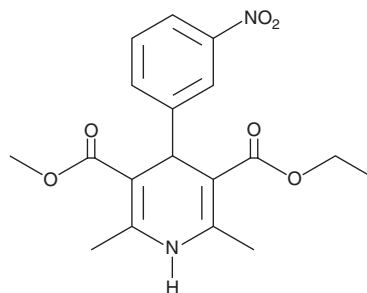
PRODUCT INFORMATION



Nitrendipine

Item No. 17549

CAS Registry No.: 39562-70-4
Formal Name: 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-3,5-pyridinedicarboxylic acid, 3-ethyl 5-methyl ester
MF: $C_{18}H_{20}N_2O_6$
FW: 360.4
Purity: $\geq 95\%$
UV/Vis.: λ_{max} : 236, 353 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

Nitrendipine is supplied as a crystalline solid. A stock solution may be made by dissolving the nitrendipine in the solvent of choice, which should be purged with an inert gas. Nitrendipine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nitrendipine in these solvents is approximately 2, 25, and 30 mg/ml, respectively.

Nitrendipine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nitrendipine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Nitrendipine has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nitrendipine is a dihydropyridine used as an antihypertensive agent due to its ability to block L-type and T-type calcium channels, which play key roles in excitation-contraction coupling in cardiac and vascular smooth muscle cells, producing vasodilatory actions.¹⁻⁴ It also binds to adenosine A_1 , A_{2A} , and A_3 receptors with K_i values of 8.96, 23.0, and 8.3 μM , respectively.⁵

References

1. Furukawa, T., Yamakawa, T., Midera, T., *et al.* Selectivities of dihydropyridine derivatives in blocking Ca^{2+} channel subtypes expressed in *Xenopus* oocytes. *J. Pharmacol. Exp. Ther.* **291**(2), 464-473 (1999).
2. Triggle, D.J. and Rampe, D. 1,4-Dihydropyridine activators and antagonists: Structural and functional distinctions. *Trends Pharmacol. Sci.* **10**(12), 507-511 (1989).
3. Perez-Reyes, E., Van Deusen, A.L., and Vitko, I. Molecular pharmacology of human $\text{Ca}_v3.2$ T-type Ca^{2+} channels: Block by antihypertensives, antiarrhythmics, and their analogs. *J. Pharmacol. Exp. Ther.* **328**(2), 621-627 (2009).
4. Sonoda, S. and Ochi, R. Independent modulation of L-type Ca^{2+} channel in guinea pig ventricular cells by nitrendipine and isoproterenol. *Jpn. Heart J.* **42**(6), 771-780 (2001).
5. van Rhee, A.M., Jiang, J.L., Melman, N., *et al.* Interaction of 1,4-dihydropyridine and pyridine derivatives with adenosine receptors: Selectivity for A_3 receptors. *J. Med. Chem.* **39**(15), 2980-2989 (1996).

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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/06/2022

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