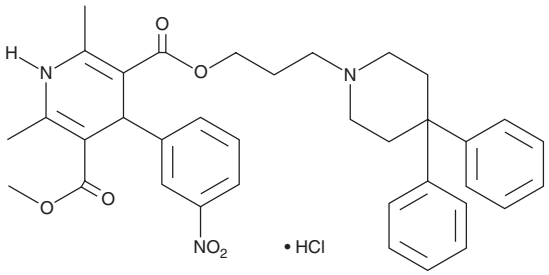
PRODUCT INFORMATION

Niguldipine (hydrochloride)

Item No. 19534

CAS Registry No.: 119934-51-9
Formal Name: 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-3,5-pyridinedicarboxylic acid, 3-[3-(4,4-diphenyl-1-piperidinyl) propyl] 5-methyl ester, monohydrochloride
Synonyms: B 844-39, NSC 617553
MF: $C_{36}H_{39}N_3O_6$ • HCl
FW: 646.2
Purity: ≥98%
UV/Vis.: λ_{max}: 354 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

Niguldipine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the niguldipine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Niguldipine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of niguldipine (hydrochloride) in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Niguldipine (hydrochloride) is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Niguldipine is a dihydropyridine that acts as a potent, selective α_{1A}-adrenoceptor antagonist (K_i = 0.16 nM).[1-3] It less potently blocks L- and T-type Ca^{2+} channels (IC_{50}s = 0.4 and 0.9 µM, respectively).[4,5]

References

1. Li, M.-Y., Tsai, K.-C., and Xia, L. Pharmacophore identification of α_{1A}-adrenoceptor antagonists. *Bioorg. Med. Chem. Lett.* **15(3)**, 657-664 (2005).
2. Bylund, D.B. Subtypes of α_1- and α_2-adrenergic receptors. *FASEB J.* **6(3)**, 832-839 (1992).
3. 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).
4. Klöckner, U. and Isenberg, G. The dihydropyridine niguldipine modulates calcium and potassium currents in vascular smooth muscle cells. *Br. J. Pharmacol.* **97(3)**, 957-967 (1989).
5. Perez-Reyes, E., Van Deusen, A.L., and Vitko, I. Molecular pharmacology of human $Ca_V3.2$ T-type Ca^{2+} channels: Block by antihypertensives, antiarrhythmics, and their analogs. *J. Pharmacol. Exp. Ther.* **328(2)**, 621-627 (2009).

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