

# 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<sub>36</sub>H<sub>39</sub>N<sub>3</sub>O<sub>6</sub> • HCl

**FW:** 646.2

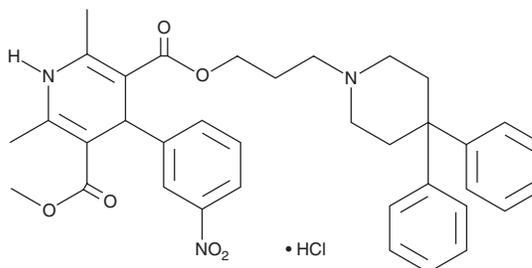
**Purity:** ≥98%

**UV/Vis.:** λ<sub>max</sub>: 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  $\alpha_{1A}$ -adrenoceptor antagonist ( $K_i = 0.16$  nM).<sup>1-3</sup> It less potently blocks L- and T-type Ca<sup>2+</sup> channels ( $IC_{50}$ s = 0.4 and 0.9  $\mu$ M, respectively).<sup>4,5</sup>

### References

1. Li, M.-Y., Tsai, K.-C., and Xia, L. Pharmacophore identification of  $\alpha_{1A}$ -adrenoceptor antagonists. *Bioorg. Med. Chem. Lett.* **15**(3), 657-664 (2005).
2. Bylund, D.B. Subtypes of  $\alpha_1$ - and  $\alpha_2$ -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<sub>3</sub> 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<sub>v</sub>3.2 T-type Ca<sup>2+</sup> channels: Block by antihypertensives, antiarrhythmics, and their analogs. *J. Pharmacol. Exp. Ther.* **328**(2), 621-627 (2009).

#### 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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#### 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