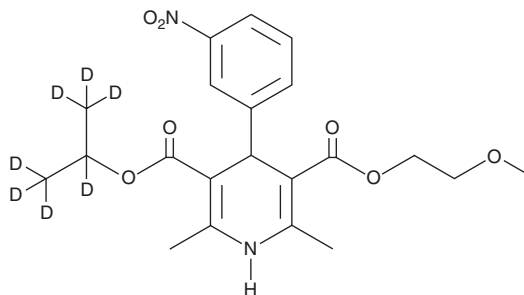


PRODUCT INFORMATION



Nimodipine-d₇ Item No. 30720

CAS Registry No.: 1246815-36-0
Formal Name: 3-(2-methoxyethyl) 5-(propan-2-yl-d₇)
2,6-dimethyl-4-(3-nitrophenyl)-1,4-
dihydropyridine-3,5-dicarboxylate
MF: C₂₁H₁₉D₇N₂O₇
FW: 425.5
Chemical Purity: ≥98% (Nimodipine)
**Deuterium
Incorporation:** ≥99% deuterated forms (d₁-d₇); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Nimodipine-d₇ is intended for use as an internal standard for the quantification of nimodipine (Item No. 14573) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Nimodipine-d₇ is supplied as a solid. A stock solution may be made by dissolving the nimodipine-d₇ in the solvent of choice, which should be purged with an inert gas. Nimodipine-d₇ is slightly soluble in chloroform and methanol.

Description

Nimodipine is an inhibitor of L-type voltage-gated calcium (Cav) channels.¹ It is selective for Ca_v1.2 over Ca_v1.3 channels (IC₅₀s = 0.139 and 2.7 μM, respectively), as well as R-, N-, and P/Q-type Ca_v channels at 10 μM.^{1,2} Nimodipine (0.72-24 nM) inhibits contractions induced by potassium, but not norepinephrine, in isolated rabbit aortic strips.³ It increases cerebral blood flow in anesthetized dogs when administered sublingually at doses ranging from 0.01 to 1 mg/kg. Nimodipine decreases necrosis of hippocampal CA1 pyramidal neurons and reduces increases in spontaneous movement and contralateral circling in a rat model of focal cerebral ischemia induced by middle cerebral artery occlusion (MCAO).⁴

References

1. Furukawa, T., Yamakawa, T., Midera, T., *et al.* Selectivities of dihydropyridine derivatives in blocking Ca²⁺ channel subtypes expressed in *Xenopus* oocytes. *J. Pharmacol. Exp. Ther.* **291**(2), 464-473 (1999).
2. Xu, W. and Lipscombe, D. Neuronal Ca_v1.3α₁ L-type channels activate at relatively hyperpolarized membrane potentials and are incompletely inhibited by dihydropyridines. *J. Neurosci.* **21**(16), 5944-5951 (2001).
3. Kazda, S. and Towart, R. Nimodipine: A new calcium antagonistic drug with a preferential cerebrovascular action. *Acta Neurochir. (Wien)* **63**(1-4), 259-265 (1982).
4. Babu, C.S. and Ramanathan, M. Post-ischemic administration of nimodipine following focal cerebral ischemic-reperfusion injury in rats alleviated excitotoxicity, neurobehavioural alterations and partially the bioenergetics. *Int. J. Dev. Neurosci.* **29**(1), 93-105 (2011).

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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