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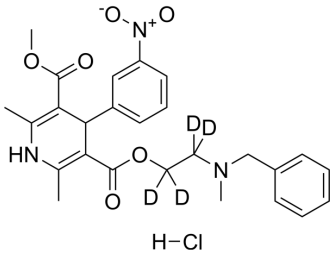
Nicardipine-d_4 hydrochloride

Cat. No.:	HY-12515AS2
Molecular Formula:	$C_{26}H_{26}D_4ClN_3O_6$
Molecular Weight:	520.01
Target:	Autophagy; Calcium Channel; Isotope-Labeled Compounds
Pathway:	Autophagy; Membrane Transporter/Ion Channel; Neuronal Signaling; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Nicardipine-d_4 hydrochloride is deuterated labeled Nicardipine hydrochloride (HY-12515A). Nicardipine hydrochloride (YC-93) is a calcium channel blocker with an IC_{50} of 1 μM for blocking cardiac calcium channels. Nicardipine hydrochloride acts as an agent for chronic stable angina and for controlling blood pressure[1].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. Nicardipine (0.1-10 μM; 24-48 h) reduces viability and proliferation of vascular smooth muscle cells (VSMCs) and inhibits their ability to migrate[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Nicardipine (0.3-10 mg/kg; p.o.) shows antihypertensive properties[4]. ?LD_{50}s of Nicardipine are 643 mg/kg (oral) and 557 mg/kg (oral); 18.1 mg/kg (intravenous) 25.0 mg/kg (intravenous); 735 mg/kg (subcutaneous) and 683 mg/kg (subcutaneous); 171 mg/kg (intraperitoneally) and 155 mg/kg (intraperitoneally) for male and female Sprague-Dawley rats, respectively[4]. ?LD_{50}s of Nicardipine are 187 mg/kg (oral) and 15.5 mg/kg (intravenous) for male Wistar rats, respectively[4]. ?LD_{50}s of Nicardipine are 634 mg/kg (oral) and 650 mg/kg (oral); 20.7 mg/kg (intravenous) 19.9 mg/kg (intravenous); 540 mg/kg (subcutaneous) and 710 mg/kg (subcutaneous); 144 mg/kg (intraperitoneally) and 161 mg/kg (intraperitoneally) for male and female mice, respectively[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Charnet P, et al. Electrophysiological analysis of the action of nifedipine and nicardipine on myocardial fibers. Fundam Clin Pharmacol. 1987;1(6):413-31.

[2]. R Stamatiou, et al. The dihydropyridine calcium antagonist nicardipine reduces aortic smooth muscle cell viability, proliferation and migration. Cardiovascular Research, 2018 Apr,114(1):S43.

[3]. Sherrin H. Baky. Nic ardipine Hydrochloride.

[4]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

Caution: Product has not been fully validated for medical applications. For research use only.

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