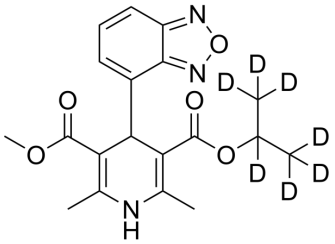
Isradipine-d_7

Cat. No.:	HY-B0233S2
Molecular Formula:	$C_{19}H_{14}D_7N_3O_5$
Molecular Weight:	378.43
Target:	Calcium Channel; Autophagy; Isotope-Labeled Compounds
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Autophagy; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Isradipine-d_7 is deuterated labeled Isradipine (HY-B0233). Isradipine (PN 200-110) is an orally active L-type calcium channel blocker. Isradipine, as a powerful peripheral vasodilator, is a dihydropyridine calcium antagonist with selective actions on the heart as well as the peripheral circulation. Isradipine is a potentially viable neuroprotective agent for Parkinson's disease[1][2][3].
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]. Isradipine has much higher (⊠40 fold) affinity for Cav1.3 channels as well as good brain bioavailability. Isradipine has nearly equal potency at Cav1.2 and Cav1.3 channels[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Isradipine (0.1~3 mg/kg; p.o.) makes sodium excretion increase in a dose-dependent manner[4]. Isradipine pre-treatment reduces 6-hydroxydopamine induced neurotoxicity at the striatal level. Protective effect of isradipine at the striatal level is dose-dependent as shown from 6 mice. Isradipine pre-treatment increases the number of surviving SNc DA cells after 6-hydroxydopamine induced degeneration. Isradipine is capable of protecting striatal dopaminergic terminals and SNc dopaminergic cell bodies against a slow, progressive insult created by intrastriatal injection of 6-hydroxydopamine[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Ilijic E, et al. The L-type channel antagonist isradipine is neuroprotective in a mouse model of Parkinson's disease. Neurobiol Dis. 2011;43(2):364-371.

[2]. Campbell CA, et al. Effects of isradipine, an L-type calcium channel blocker on permanent and transient focal cerebral ischemia in spontaneously hypertensive rats. Exp Neurol. 1997;148(1):45-50.

[3]. Hof RP, et al. Selective effects of PN 200-110 (isradipine) on the peripheral circulation and the heart. Am J Cardiol. 1987;59(3):30B-36B.

[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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