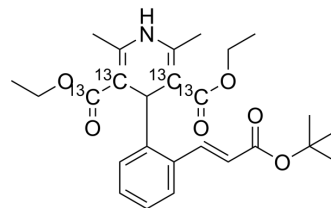


Lacidipine-¹³C₄

Cat. No.:	HY-B0347S3
Molecular Formula:	C ₂₂ ¹³ C ₄ H ₃₃ NO ₆
Molecular Weight:	459.51
Target:	Calcium Channel; Caspase; Reactive Oxygen Species; Apoptosis; Isotope-Labeled Compounds
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Apoptosis; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Lacidipine- ¹³ C ₄ is ¹³ C labeled Lacidipine (HY-B0347). Lacidipine is an orally active and highly selective L-type calcium channel blocker that acts on smooth muscle calcium channels, primarily dilates peripheral arteries, reduces peripheral resistance, and has long-lasting anti-hypertensive activity. Lacidipine protects HKCs from apoptosis induced by ATP depletion and recovery by modulating the caspase-3 pathway. Lacidipine can be used in studies of hypertension, atherosclerosis and acute kidney injury (AKI) ^{[1][2]} .
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] . Lacidipine (0.01-100 μM; 24 h) inhibits HKCs proliferation in vitro in a concentration-dependent manner ^[2] . Lacidipine (0.01-100 μM; 24 h) protects HKCs against apoptosis induced by ATP depletion and recovery by regulating the caspase-3 pathway ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Lacidipine (0.3, 1.0, 3.0 mg/kg; p.o.; single daily for 10 weeks) shows anti-atherogenic effects in the apoE-deficient mouse, and reduces plasma endothelin concentrations ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Zhang A, et al. Lacidipine attenuates apoptosis via a caspase-3 dependent pathway in human kidney cells. *Cell Physiol Biochem*. 2013;32(4):1040-9.
- [2]. Cristofori P, et al. The calcium-channel blocker lacidipine reduces the development of atherosclerotic lesions in the apoE-deficient mouse. *J Hypertens*. 2000 Oct;18(10):1429-36.
- [3]. 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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