Perindopril-d_3 erbumine

Cat. No.: HY-B0130AS

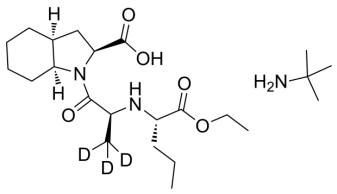
Molecular Formula: $C_{23}H_{40}D_3N_3O_5$

Molecular Weight: 444.62

Target: NF-κB; STAT; Sirtuin; Angiotensin-converting Enzyme (ACE); Isotope-Labeled Compounds

Pathway: NF-κB; JAK/STAT Signaling; Stem Cell/Wnt; Cell Cycle/DNA Damage; Epigenetics; Metabolic Enzyme/Protease; Others

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Perindopril-d_3 (erbumine) is deuterated labeled Perindopril (erbumine) (HY-B0130A). Perindopril erbumine is an angiotensin-converting enzyme inhibitor. Perindopril erbumine modulates NF-κB and STAT3 signaling and inhibits glial activation and neuroinflammation. Perindopril erbumine can be used for the research of Chronic Kidney Disease and high blood pressure[1][2][3][4].
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]. Perindopril erbumine (1 μM, 24 h) ameliorats gliosis and blunts decrease induced by LPS (HY-D1056) in AT2R expression in Rat astrocytoma cell line (C6) and murine microglial cell line (BV2)[2]. Perindopril erbumine (1 μM, 24 h) prevents IκBα degradation, NF-κB nuclear translocation and STAT3 activation induced by LPS (HY-D1056) in C6 and BV2[2]. Perindopril erbumine (1 μM, 24 h) ameliorats the imbalance in the release of inflammatory cytokine and blunts the aberrant ROS production and the nitrite release induced by LPS (HY-D1056) in C6 and BV2[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Perindopril erbumine (0.1 mg/kg, Oral gavage, once a day for five consecutive days) prevents LPS-induced neuroinflammation in rats[2]. Perindopril erbumine (0.42 mg/kg, Oral, once a day for 4 weeks) with Huangqi-Danshen decoction (HDD) (4.7 g/kg, Oral, once a day for 4 weeks) attenuates adenine(HY-B0152)-induced Chronic kidney disease (CKD) in rats[3]. Perindopril erbumine (0.4-1.5 mg/kg, Oral, once a day for 4-24 weeks) has a persistent effect on blood pressure in spontaneously hypertensive rats (SHR)[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Bhat S A, et al. Angiotensin receptor blockade modulates NFκB and STAT3 signaling and inhibits glial activation and neuroinflammation better than angiotensin-converting enzyme inhibition [J]. Molecular neurobiology, 2016, 53: 6950-6967.

[2]. Wei X, et al. Combination of perindopril erbumine and huangqi-danshen decoction protects against chronic kidney disease via sirtuin3/mitochondrial dynamics pathway [J]. Evidence-Based Complementary and Alternative Medicine, 2022, 2022.

[3]. Afonso T, et al. Pharmacodynamic evaluation of 4 angiotensin-converting enzyme inhibitors in healthy adult horses [J]. Journal of veterinary internal medicine, 2013, 27(5): 1185-1192.

[4]. Thybo N K, et al. Dose-dependent effects of perindopril on blood pressure and small-artery structure [J]. Hypertension, 1994, 23(5): 659-666.

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

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