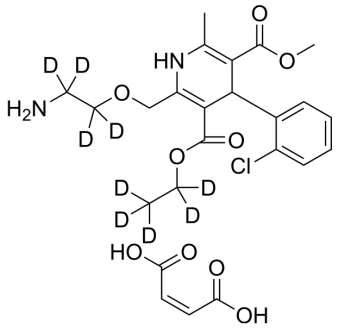
Amlodipine-d_9 maleate

Cat. No.:	HY-B0317AS1
Molecular Formula:	$C_{24}H_{20}D_9ClN_2O_9$
Molecular Weight:	534
Target:	Calcium Channel; Isotope-Labeled Compounds
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Amlodipine-d_9 maleate is deuterated labeled Amlodipine maleate (HY-B0317A). Amlodipine maleate is a dihydropyridine calcium channel blocker, acts as an orally active antianginal agent. Amlodipine maleate blocks the voltage-dependent L-type calcium channels, thereby inhibiting the initial influx of calcium. Amlodipine maleate can be used for the research of high blood pressure and cancer[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]. Amlodipine maleate (20-40 μM; 48 h) reduces BrdU incorporation to 68.6% and 26.3% at concentrations of 20 and 30 μM in A431 cells, respectively[4]. Amlodipine maleate (30 μM; pretreated for 1 h) significantly attenuates the uridine 5′-triphosphate (UTP)-induced increases of $[Ca^{2+}]_i$ in A431 cells[4]. Amlodipine maleate (30 μM) inhibits the store-operated Ca^{2+}influx evoked by Thapsigargin in Fluo-3-loaded cells[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Amlodipine maleate (5 mg/kg/day; s.c. for 2 weeks) significantly decreases systolic blood pressure (SBP) in VSMC ATP2B1 KO mice[5]. Amlodipine maleate (10 mg/kg; i.p. once daily for 20 days) causes a significant retardation of tumor growth and prolongs the survival of A431 tumor-bearing mice[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Yoshida J, et, al. Antitumor effects of amlodipine, a Ca2+ channel blocker, on human epidermoid carcinoma A431 cells in vitro and in vivo. Eur J Pharmacol. 2004 May 25;492(2-3):103-12.

[2]. Okuyama Y, et, al. The effects of anti-hypertensive drugs and the mechanism of hypertension in vascular smooth muscle cell-specific ATP2B1 knockout mice. Hypertens Res. 2018 Feb;41(2):80-87.

[3]. Kishen G. Bulsara, et al. Amlodipine.

[4]. Haria M, et al. Amlodipine. A reappraisal of its pharmacological properties and therapeutic use in cardiovascular disease [published correction appears in Drugs 1995 Nov;50(5):896]. Drugs. 1995;50(3):560-586.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA