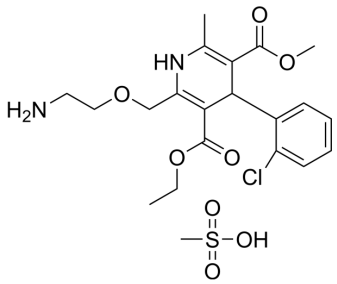
Amlodipine mesylate

Cat. No.:	HY-B0317C
CAS No.:	246852-12-0
Molecular Formula:	$C_{21}H_{29}ClN_2O_8S$
Molecular Weight:	504.98
Target:	Calcium Channel
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Amlodipine mesylate, an antianginal agent and an orally active dihydropyridine calcium channel blocker, works by blocking the voltage-dependent L-type calcium channels, thereby inhibiting the initial influx of calcium. Amlodipine mesylate can be used for the research of high blood pressure and cancer[1][2][3].
IC_{50} & Target	L-type calcium channel
In Vitro	Amlodipine mesylate (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[3]. Amlodipine mesylate (30 μM; pretreated for 1 h) significantly attenuates the uridine 5′-triphosphate (UTP)-induced increases of $[Ca^{2+}]_i$ in A431 cells[3]. Amlodipine mesylate (30 μM) inhibits the store-operated Ca^{2+}influx evoked by Thapsigargin in Fluo-3-loaded cells[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Amlodipine mesylate (5 mg/kg/day; s.c. for 2 weeks) significantly decreases systolic blood pressure (SBP) in VSMC ATP2B1 KO mice[4]. Amlodipine mesylate (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[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	$ATP2B1^{loxP/loxP}$ mice[4]
Dosage:	5 mg/kg/day
Administration:	Subcutaneously implanted osmotic pump for 2 weeks
Result:	Significantly decreased the blood pressure.

CUSTOMER VALIDATION

- Exp Mol Med. 2021 Apr 2.

- J Adv Res. 2023 Sep 13;S2090-1232(23)00257-6.
- Br J Pharmacol. 2021 Dec 3.
- Cells. 2022 Oct 8;11(19):3156.
- J Biochem Mol Toxicol. 2022 Oct 7;e23238.

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REFERENCES

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

[2]. 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.

[3]. 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.

[4]. 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.

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