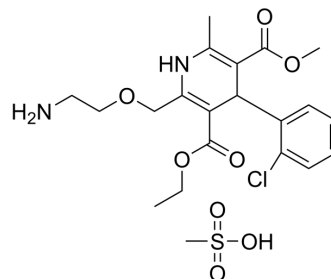


## Amlodipine mesylate

Cat. No.:	HY-B0317C
CAS No.:	246852-12-0
Molecular Formula:	C <sub>21</sub> H <sub>29</sub> ClN <sub>2</sub> O <sub>8</sub> S
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

<b>Description</b>	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 <sup>[1][2][3]</sup> .								
<b>IC<sub>50</sub> &amp; Target</b>	L-type calcium channel								
<b>In Vitro</b>	<p>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<sup>[3]</sup>.</p> <p>Amlodipine mesylate (30 μM; pretreated for 1 h) significantly attenuates the uridine 5'-triphosphate (UTP)-induced increases of [Ca<sup>2+</sup>]<sub>i</sub> in A431 cells<sup>[3]</sup>.</p> <p>Amlodipine mesylate (30 μM) inhibits the store-operated Ca<sup>2+</sup>influx evoked by Thapsigargin in Fluo-3-loaded cells<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
<b>In Vivo</b>	<p>Amlodipine mesylate (5 mg/kg/day; s.c. for 2 weeks) significantly decreases systolic blood pressure (SBP) in VSMC ATP2B1 KO mice<sup>[4]</sup>.</p> <p>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<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: none;">Animal Model:</td> <td style="border: none;">ATP2B1<sup>loxP/loxP</sup> mice<sup>[4]</sup></td> </tr> <tr> <td style="border: none;">Dosage:</td> <td style="border: none;">5 mg/kg/day</td> </tr> <tr> <td style="border: none;">Administration:</td> <td style="border: none;">Subcutaneously implanted osmotic pump for 2 weeks</td> </tr> <tr> <td style="border: none;">Result:</td> <td style="border: none;">Significantly decreased the blood pressure.</td> </tr> </table>	Animal Model:	ATP2B1 <sup>loxP/loxP</sup> mice <sup>[4]</sup>	Dosage:	5 mg/kg/day	Administration:	Subcutaneously implanted osmotic pump for 2 weeks	Result:	Significantly decreased the blood pressure.
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### CUSTOMER VALIDATION

- Exp Mol Med. 2021 Apr 2.

- Cells. 2022 Oct 8;11(19):3156.
- J Biochem Mol Toxicol. 2022 Oct 7;e23238.
- Biochem Biophys Res Commun. 2020 Feb 19;522(4):862-868.
- J Chem Thermodyn. 2021, 106495.

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## REFERENCES

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[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 Ca<sup>2+</sup> 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.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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