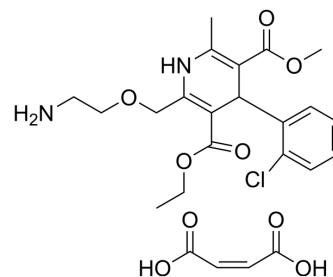


## Amlodipine maleate

<b>Cat. No.:</b>	HY-B0317A
<b>CAS No.:</b>	88150-47-4
<b>Molecular Formula:</b>	C <sub>24</sub> H <sub>29</sub> ClN <sub>2</sub> O <sub>9</sub>
<b>Molecular Weight:</b>	524.95
<b>Target:</b>	Calcium Channel
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Neuronal Signaling
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 120 mg/mL (228.59 mM; Need ultrasonic)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	1.9049 mL	9.5247 mL	19.0494 mL	
		5 mM	0.3810 mL	1.9049 mL	3.8099 mL	
		10 mM	0.1905 mL	0.9525 mL	1.9049 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 1.71 mg/mL (3.26 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 1.71 mg/mL (3.26 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 1.71 mg/mL (3.26 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	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 <sup>[1][2][3]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	L-type calcium channel
<b>In Vitro</b>	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 <sup>[3]</sup> . Amlodipine maleate (30 μM; pretreated for 1 h) significantly attenuates the uridine 5'-triphosphate (UTP)-induced increases

of  $[Ca^{2+}]_i$  in A431 cells<sup>[3]</sup>.

Amlodipine maleate (30  $\mu$ M) inhibits the store-operated  $Ca^{2+}$  influx evoked by Thapsigargin in Fluo-3-loaded cells<sup>[3]</sup>.

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<sup>[4]</sup>.

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<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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.

## 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

[1]. Yoshida J, et, al. Antitumor effects of amlodipine, a  $Ca^{2+}$  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.

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

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