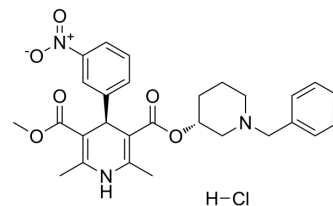


Benidipine hydrochloride

Cat. No.:	HY-B1448
CAS No.:	91599-74-5
Molecular Formula:	C ₂₈ H ₃₂ ClN ₃ O ₆
Molecular Weight:	542.02
Target:	Calcium Channel; Apoptosis
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Apoptosis
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 33.33 mg/mL (61.49 mM; Need ultrasonic)			
	H ₂ O : < 0.1 mg/mL (insoluble)			
		Solvent	Mass	
		Concentration		
	Preparing Stock Solutions		1 mg	5 mg
	1 mM	1.8450 mL	9.2248 mL	18.4495 mL
	5 mM	0.3690 mL	1.8450 mL	3.6899 mL
	10 mM	0.1845 mL	0.9225 mL	1.8450 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (3.84 mM); Clear solution			
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 2.08 mg/mL (3.84 mM); Suspended solution; Need ultrasonic			

BIOLOGICAL ACTIVITY

Description	Benidipine hydrochloride is an orally active calcium channel antagonist. Benidipine hydrochloride can inhibit cell proliferation and apoptosis. Benidipine hydrochloride has antioxidant activity and can increase nitric oxide synthase activity and improve coronary circulation in hypertensive rats ^{[1][2][3][4][5][6]} .
In Vitro	Benidipine hydrochloride (0.01-1 μM, 7 days) promotes mouse endothelial cell differentiation by enhancing phosphorylated Akt ^[5] . Benidipine hydrochloride (0.1-10 μM) inhibits the proliferation of mesangial cells, at both the G0/G1 and G1/S phases ^[6] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Western Blot Analysis ^[5]

Cell Line:	Murine PBMCs
Concentration:	1 μ M
Incubation Time:	7 days
Result:	Increased the expression of phosphorylated Akt on serine-473.
Cell Proliferation Assay ^[6]	
Cell Line:	Mesangial cells
Concentration:	0.1-10 μ M
Incubation Time:	48 h
Result:	Inhibited the progression of the cell cycle in a dose-dependent manner.

In Vivo

Benidipine hydrochloride (3-10 μ g/kg, i.v.) shows a significant anti-apoptotic effect in rabbits, independent of hemodynamics^[2].

Benidipine hydrochloride (5 mg/kg, i.v., every day for 6 weeks) increases the activity of endothelial cell-type nitric oxide synthase (eNOS) and improves coronary circulation in hypertensive rats^[3].

Benidipine hydrochloride (1-10 mg/kg, p.o., once daily for 1 week) has significant cardioprotective effects against ischemia-reperfusion injury^[4].

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

Animal Model:	MI/R rabbits model ^[2]
Dosage:	3-10 μ g/kg
Administration:	i.v.
Result:	Caused a significant decrease in HR (heart rate), MABP (mean arterial blood pressure), and PRI (pressure-rate index) at 10 μ g/kg. Decreased apoptotic positive cells to 7.4% at 3 μ g/kg.
Animal Model:	Renovascular hypertensive rats (RHR) model ^[3]
Dosage:	5 mg/kg
Administration:	i.v.
Result:	Decreased the blood pressure and coronary vascular resistance index. Increased nitrite production and eNOS mRNA expression and the coronary flow at rest, the capillary density.
Animal Model:	Rat heart model ^[4]
Dosage:	1-10 mg/kg
Administration:	p.o.
Result:	Increased the post-ischemic recovery of LVDP and LV dP/dt max (LVDP: 87.5 \pm 10.1 vs 64.6 \pm 11.9%; LV dP/dt max: 97.8 \pm 10.4 vs 70.2 \pm 15.7%) at 3 mg/kg.

REFERENCES

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

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