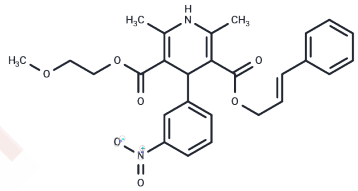
Data Sheet (Cat.No.T0388)

TargetMol

Cilnidipine

Chemical Properties



CAS No. : 132203-70-4

Formula: C27H28N2O7

Molecular Weight: 492.52

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Cilnidipine (FRC-8653)(FRC8653) is a dual L- and N-type calcium channel blocker and displays antihypertensive, sympatholytic and neuroprotective activity.
Targets(IC50)	Calcium Channel
In vitro	Cilnidipine inhibits the rise in blood urea nitrogen and the decline in creatinine clearance, as well as the progression of glomerulosclerosis. It prevents the increased content of renal angiotensin II, the expression of NADPH oxidase, and the augmented membrane translocation of dihydroethidium in SHR/ND rats. Administering 30 mg/kg of Cilnidipine daily to Dahl salt-sensitive rats effectively treated the elevation of systolic blood pressure. Compared to control-treated Dahl S rats, Cilnidipine reduced plasma norepinephrine levels and plasma renin activity. In spinal cord destruction rats, it suppressed the pressor responses induced by sympathetic nerve stimulation and angiotensin II. In anesthetized rats, Cilnidipine, or omega-conotoxin MVIIA, lowered mean arterial blood pressure with a slight increase in heart rate. At antihypertensive doses in rats, Cilnidipine affected sympathetic nerve N-type calcium channels (Ca(2+)), besides vascular L-type channels. Following NMDA receptor activation, Cilnidipine reduced Ca(2+) influx through N-type channels, and in rats in vivo, it protected neurons from ischemic reperfusion injury in the retina. Compared to amlodipine-treated spontaneously hypertensive rats/ND mcr-cp (SHR/ND), Cilnidipine significantly prevented the increase in fibrillary protein staining and restored the expression of podocin and nephrin in the glomeruli.
In vivo	Cilnidipine at 10 mM can inhibit the increase in the ratio induced by 40 mM potassium chloride, and is also effective in inhibition when treated with omega-conotoxin GVIA.

Solubility Information

Solubility	DMSO: 262.5 mg/mL (532.97 mM),Sonication is recommended. Ethanol: 4.9 mg/mL (9.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.06 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0304 mL	10.1519 mL	20.3037 mL
5 mM	0.4061 mL	2.0304 mL	4.0607 mL
10 mM	0.203 mL	1.0152 mL	2.0304 mL
50 mM	0.0406 mL	0.203 mL	0.4061 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Takahara A, et al. Hypertens Res,2003, 26(9), 743-747.
Wang B, Pei J, Zhang H, et al.Dihydropyridine-derived calcium channel blocker as a promising anti-hantavirus entry inhibitor.Interventions for emerging infectious diseases.2023, 16648714.
Sakamoto K, et al. Exp Eye Res,2009, 88(5), 974-982.
Fan YY, et al. J Hypertens,2010, 28(5), 1034-1043.
Konda T, et al. Biol Pharm Bull,2006, 29(5), 933-937.
Takahara A, et al. Eur J Pharmacol,2002, 434(1-2), 43-47.

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