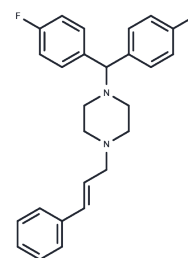


Flunarizine

Chemical Properties

CAS No. :	52468-60-7
Formula:	C ₂₆ H ₂₆ F ₂ N ₂
Molecular Weight:	404.50
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	Flunarizine is an orally administered peripheral vasodilator, acting as a dual blocker of voltage-gated Na ⁺ /Ca ²⁺ channels and a D2 dopamine receptor antagonist, exhibiting anti-migraine activity.
Targets(IC50)	Calcium Channel,Dopamine Receptor,Sodium Channel
In vitro	In cultured rat cortical neurons, Flunarizine blocks sodium current (I _{Na}) and calcium current (I _{Ca}), with half-maximal inhibitory concentrations (IC ₅₀) of 0.94 μM and 1.77 μM, respectively [2]. Flunarizine (concentrations 10 μM, 30 μM; exposure time 24 hours) exhibits cytotoxic effects on chromaffin cells [4]. Within the concentration range of 3-10 μM, Flunarizine demonstrates significant cytoprotective effects on chromaffin cells [4].
In vivo	In a lipopolysaccharide (LPS)-induced acute lung injury (ALI) mouse model, preventive administration of Flunarizine (30 mg/kg, intraperitoneal injection) significantly inhibited LPS-induced cell infiltration, protein leakage, and inflammatory cytokine release. Therapeutic administration of flunarizine (30 mg/kg, intraperitoneal injection) also suppressed pulmonary inflammation, but its efficacy was weaker than that of preventive administration [5].

Solubility Information

Solubility	DMSO: 80 mg/mL (197.78 mM),Sonication is recommended. H ₂ O: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (8.16 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. 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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4722 mL	12.3609 mL	24.7219 mL
5 mM	0.4944 mL	2.4722 mL	4.9444 mL
10 mM	0.2472 mL	1.2361 mL	2.4722 mL
50 mM	0.0494 mL	0.2472 mL	0.4944 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

- Hong-Seob So, et al. Protective effect of T-type calcium channel blocker flunarizine on cisplatin-induced death of auditory cells. *Hear Res.* 2005 Jun;204(1-2):127-39.
- Qing Ye, et al. Flunarizine blocks voltage-gated Na(+) and Ca(2+) currents in cultured rat cortical neurons: A possible locus of action in the prevention of migraine. *Neurosci Lett.* 2011 Jan 10;487(3):394-9.
- Celia M Santi, et al. Differential inhibition of T-type calcium channels by neuroleptics. *J Neurosci.* 2002 Jan 15;22(2):396-403.
- Novalbos J, et al. Effects of dotarizine and flunarizine on chromaffin cell viability and cytosolic Ca²⁺. *Eur J Pharmacol.* 1999 Feb 5;366(2-3):309-17.
- Wan L, et al. Mibefradil and Flunarizine, Two T-Type Calcium Channel Inhibitors, Protect Mice against Lipopolysaccharide-Induced Acute Lung Injury. *Mediators Inflamm.* 2020 Nov 10;2020:3691701.

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