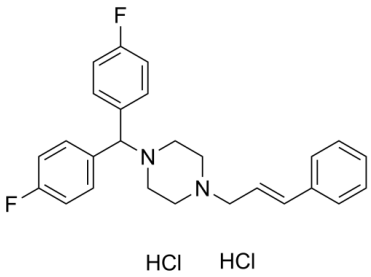
Data Sheet

Product Name:	Flunarizine (dihydrochloride)
Cat. No.:	CS-2412
CAS No.:	30484-77-6
Molecular Formula:	$C_{26}H_{28}Cl_2F_2N_2$
Molecular Weight:	477.42
Target:	Calcium Channel; Dopamine Receptor; Sodium Channel
Pathway:	GPCR/G Protein; Membrane Transporter/Ion Channel; Neuronal Signaling
Solubility:	H2O : 1 mg/mL (2.09 mM; Need ultrasonic); DMSO : 50 mg/mL (104.73 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Flunarizine dihydrochloride is a potent dual **Na^+/Ca^{2+} channel (T-type)** blocker. Flunarizine dihydrochloride is a **D_2 dopamine** receptor antagonist. Flunarizine dihydrochloride shows anticonvulsive and antimigraine activity, and peripheral vasodilator effects[1][2][3][4][5]. **In Vitro:**Flunarizine blocks sodium currents (I_{Na}) and calcium currents (I_{Ca}) with IC_{50} values of 0.94 μM and 1.77 μM in cultured rat cortical neurons, respectively[2].

Flunarizine (10 and 30 μM; 24 h) shows cytotoxic effects to chromaffin cells[4].

Flunarizine (1-30 μM) causes clear cytoprotection of chromaffin cell at concentrations of 3-10 μM[4]. **In Vivo:**Flunarizine (intraperitoneal injection; 30 mg/kg; once) protects mice from lipopolysaccharide- (LPS-) induced acute lung injury (ALI)[5].

References:

[1]. 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.

[2]. 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.

[3]. Celia M Santi, et al. Differential inhibition of T-type calcium channels by neuroleptics. J Neurosci. 2002 Jan 15;22(2):396-403.

[4]. 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.

[5]. 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.

CAIndexNames:

Piperazine, 1-[bis(4-fluorophenyl)methyl]-4-[(2E)-3-phenyl-2-propen-1-yl]-, hydrochloride (1:2)

SMILES:

FC1=CC=C(C(N2CCN(C/C=C/C3=CC=CC=C3)CC2)C4=CC=C(F)C=C4)C=C1.Cl.Cl

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

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