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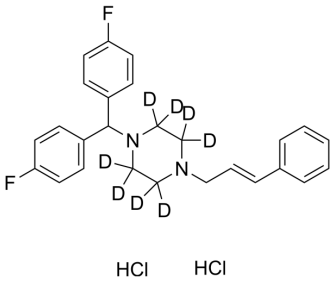
Flunarizine-d_8 dihydrochloride

Cat. No.:	HY-B0358AS
Molecular Formula:	$C_{26}H_{20}D_8Cl_2F_2N_2$
Molecular Weight:	485.47
Target:	Sodium Channel; Dopamine Receptor; Calcium Channel; Isotope-Labeled Compounds
Pathway:	Membrane Transporter/Ion Channel; GPCR/G Protein; Neuronal Signaling; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Flunarizine-d_8 dihydrochloride is deuterated labeled Flunarizine dihydrochloride (HY-B0358A). 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	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. 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[3]. ?Flunarizine (10 and 30 μM; 24 h) shows cytotoxic effects to chromaffin cells[5]. ?Flunarizine (1-30 μM) causes clear cytoprotection of chromaffin cell at concentrations of 3-10 μM[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Flunarizine (intraperitoneal injection; 30?mg/kg; once) protects mice from lipopolysaccharide- (LPS-) induced acute lung injury (ALI)[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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]. 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.

[3]. 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.

[4]. 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.

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

[6]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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