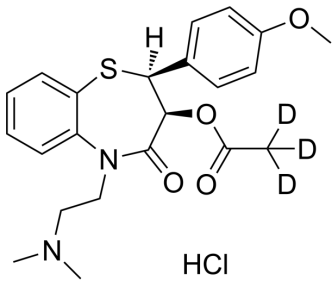
Diltiazem-(acetoxy-d_3) (hydrochloride)

Cat. No.:	HY-14656S1
CAS No.:	1217860-13-3
Molecular Formula:	$C_{22}H_{24}D_3ClN_2O_4S$
Molecular Weight:	454
Target:	Calcium Channel; Isotope-Labeled Compounds
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Diltiazem-(acetoxy-d_3) (hydrochloride) is the deuterium labeled Diltiazem hydrochloride. Diltiazem hydrochloride is a Ca2+ influx inhibitor (slow channel blocker or calcium antagonist)[1][2].
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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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

[2]. Kraus RL, et al. Molecular mechanism of diltiazem interaction with L-type Ca2+ channels. J Biol Chem. 1998 Oct 16;273(42):27205-12.

[3]. van Breemen C, et al. The mechanism of inhibitory action of diltiazem on vascular smooth muscle contractility. J Pharmacol Exp Ther. 1981 Aug;218(2):459-63.

[4]. Chiesi M, et al. Stereospecific action of diltiazem on the mitochondrial Na-Ca exchange system and on sarcolemmal Ca-channels. Biochem Pharmacol. 1987 Sep 1;36(17):2735-40.

[5]. Freitas F, et al. Cardiac microvascular rarefaction in hyperthyroid rats is reversed by losartan, diltiazem, and propranolol. Fundam Clin Pharmacol. 2015 Feb;29(1):31-40.

[6]. Sato M, et al. Hypotensive effects of diltiazem hydrochloride in the normotensive, spontaneously hypertensive and renal hypertensive rats (author's transl). Nihon Yakurigaku Zasshi. 1979 Mar;75(2):99-106.

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