
Product Data Sheet

Product Name: Diltiazem-d3 hydrochloride

Cat. No.: GC64299

Chemical Properties

Cas. No. 1217623-80-7

Formula C₂₂H₂₄D₃CIN₂O₄S

M.Wt 454

Solubility H₂O : 33.33 mg/mL (73.41 mM; Need ultrasonic) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

Diltiazem-d3 hydrochloride is the deuterium labeled Diltiazem hydrochloride. Diltiazem hydrochloride is a Ca²⁺ influx inhibitor (slow channel blocker or calcium antagonist)[1][2].

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].

[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.

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

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[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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