Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Diltiazem (hydrochloride)

Catalog No: tcsc2339

Available Sizes

Size: 1g

Size: 5g

Specifications

CAS No:
33286-22-5

Formula:
$C_{22}H_{27}ClN_2O_4S$

Pathway:
Membrane Transporter/Ion Channel

Target:
Calcium Channel

Purity / Grade:
>98%

Solubility:
H2O : 33.33 mg/mL (73.91 mM; Need ultrasonic)

Alternative Names:
CRD-401

Observed Molecular Weight:
450.98

Product Description

Diltiazem hydrochloride is a **Ca^{2+}** influx inhibitor (slow channel blocker or calcium antagonist).

Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

In Vitro: Benzothiazepine Ca^{2+} antagonist diltiazem hydrochloride interacts with transmembrane segments IIIS6 and IVS6 in the α1 subunit of L-type Ca^{2+} channels[1]. Diltiazem causes a dose-dependent inhibiton of contractions as well as Ca^{2+} influx stimulated by alpha adrenoceptor activation and high-K^+ depolarization. Diltiazem is roughly equally potent in inhibiting contractions induced by high-K^+ and a low concentration of norepinephrine (NE)[2]. Diltiazem also inhibits the Na-dependent Ca-efflux from heart mitochondria. Both the (+)-optical isomers of the cis- and trans-forms of diltiazem inhibit Na-Ca exchange activity with comparable potency (IC_{50} of 10-20 μM)[3].

In Vivo: Diltiazem produces a noncompetitive inhibition of Ca^{2+}-induced contractions of depolarized rabbit aorta. Furthermore, there is a lack of parallelism between the smooth muscle effects of removal of [Ca^{2+}]ex and of addition of diltiazem[2]. Diltiazem improves the cardiac microcirculation and function in an experimental model of hyperthyroidism in rats. The treatment of hyperthyroid rats with losartan diltiazem (4.7±0.7%; P [4]. In conscious spontaneously hypertensive rats (SHR), diltiazem dose-dependently decreases the blood pressure and increases the heart rate after intravenous administration (0.03--1 mg/kg). Oral administration of diltiazem (100 mg/kg) also reduces the blood pressure of SHR[5].