Mitiglinide calcium

Cat. No.: HY-17398

CAS No.: 145525-41-3

Molecular Formula: $C_{19}H_{24}NO_3 \cdot {}_1/_2\,Ca$

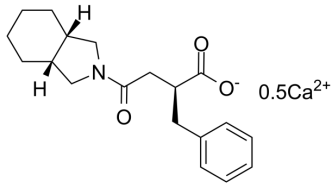
Molecular Weight: 334.44

Target: Potassium Channel

Pathway: Membrane Transporter/Ion Channel

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 5 mg/mL (14.95 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9901 mL	14.9504 mL	29.9007 mL
	5 mM	0.5980 mL	2.9901 mL	5.9801 mL
	10 mM	0.2990 mL	1.4950 mL	2.9901 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.5 mg/mL (1.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.5 mg/mL (1.50 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.5 mg/mL (1.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mitiglinide Calcium (KAD-1229 anhydrous), an insulinotropic agent, is an ATP-sensitive K^+ (K_{ATP}) channel antagonist. Mitiglinide Calcium is highly specific to the Kir6.2/SUR1 complex (the pancreatic beta-cell K_{ATP} channel). Mitiglinide Calcium can be used for the research of type 2 diabetes[1][2].

IC_{50} & Target

K_{ATP} channel[1]

In Vitro

Mitiglinide Calcium inhibits the Kir6.2/SUR1 channel currents in a dose-dependent manner (IC_{50} value, 100 nM) but does not significantly inhibit either Kir6.2/SUR2A or Kir6.2/SUR2B channel currents even at high doses (more than 10 μM) in COS-1 cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Mitiglinide Calcium (1-3 mg/kg; p.o.) suppresses the increase in plasma glucose levels seen after a meal load and the area under the curve for plasma glucose levels (AUCglucose) up to 5 h after the meal load[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Pregnant Wistar rats (12 weeks)[2]
Dosage:	0.3 mg/kg, 1 mg/kg, 3 mg/kg
Administration:	Oral administration
Result:	Dose-dependently suppressed $AUC_{glucose}$ levels.

REFERENCES

[1]. Y Sunaga, et al. The effects of mitiglinide (KAD-1229), a new anti-diabetic drug, on ATP-sensitive K+ channels and insulin secretion: comparison with the sulfonylureas and nateglinide. Eur J Pharmacol. 2001 Nov 9;431(1):119-25.

[2]. Kiyoshi Ichikawa, et al. Effect of KAD-1229, a novel hypoglycaemic agent, on plasma glucose levels after meal load in type 2 diabetic rats. Clin Exp Pharmacol Physiol. May-Jun 2002;29(5-6):423-7.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA