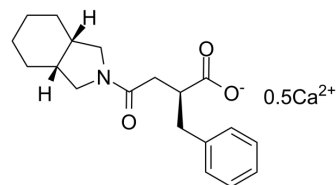


Mitiglinide calcium

Cat. No.:	HY-17398
CAS No.:	145525-41-3
Molecular Formula:	C ₁₉ H ₂₄ NO ₃ · 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	1 mg	5 mg	10 mg
		Concentration				
		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]} .
IC₅₀ & 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 (AUC_{glucose}) 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.

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

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