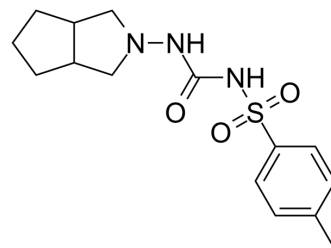


Gliclazide

Cat. No.:	HY-B0753	
CAS No.:	21187-98-4	
Molecular Formula:	C ₁₅ H ₂₁ N ₃ O ₃ S	
Molecular Weight:	323.41	
Target:	Potassium Channel	
Pathway:	Membrane Transporter/Ion Channel	
Storage:	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (309.21 mM)
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.0921 mL	15.4603 mL	30.9205 mL
	5 mM	0.6184 mL	3.0921 mL	6.1841 mL
	10 mM	0.3092 mL	1.5460 mL	3.0921 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (7.73 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (7.73 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (7.73 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Gliclazide (S1702) is a whole-cell beta-cell ATP-sensitive potassium currents blocker with an IC₅₀ of 184 nM. Gliclazide is used as an antidiabetic^[1].

IC₅₀ & Target

Potassium Channel^[1]

In Vitro

Gliclazide (S1702) further characterize its mechanism of hypoglycemic effect: the observed improvements in insulin sensitivity and in GLUT4 translocation indicate that gliclazide counters the hydrogen peroxide-induced insulin resistance in 3T3L1 adipocytes and also would further augment the hypoglycemic effect of this drug as insulinotropic sulfonylurea^[1]. Gliclazide blocked whole-cell beta-cell KATP currents with an IC₅₀ of 184 +/- 30 nmol/l (n=6-10) but was much less effective in cardiac and smooth muscle (IC₅₀s of 19.5 +/- 5.4 micromol/l (n=6-12) and 37.9 +/- 1.0 micromol/l (n=5-10), respectively). In all three tissues, the action of the drug on whole-cell KATP currents was rapidly reversible. In inside-out patches on beta-cells, gliclazide (1 micromol/l) produced a maximum of 66 +/- 13 % inhibition (n=5), compared with more than 98 % block in the whole-cell configuration. Gliclazide is a high-potency sulphonylurea which shows specificity for the pancreatic beta-cell KATP channel over heart and smooth muscle. In this respect, it differs from glibenclamide^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Pharmaceuticals. 2023, 16(2), 225.
- Dig Dis Sci. 2023 Dec 16.

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REFERENCES

[1]. Shimoyama, T., et al., Gliclazide protects 3T3L1 adipocytes against insulin resistance induced by hydrogen peroxide with restoration of GLUT4 translocation. *Metabolism*, 2006. 55(6): p. 722-30.

[2]. Lawrence, C.L., et al., Gliclazide produces high-affinity block of KATP channels in mouse isolated pancreatic beta cells but not rat heart or arterial smooth muscle cells. *Diabetologia*, 2001. 44(8): p. 1019-25.

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

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