Mizagliflozin

Cat. No.: HY-17638

CAS No.: 666843-10-3

Molecular Formula: $C_{28}H_{44}N_4O_8$

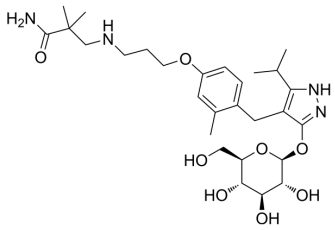
Molecular Weight: 564.67

Target: SGLT

Pathway: Membrane Transporter/Ion Channel

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 100 mg/mL (177.09 mM)

DMSO : 100 mg/mL (177.09 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	1.7709 mL	8.8547 mL	17.7095 mL
	5 mM	0.3542 mL	1.7709 mL	3.5419 mL
	10 mM	0.1771 mL	0.8855 mL	1.7709 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: ≥ 2.5 mg/mL (4.43 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.43 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.43 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mizagliflozin (DSP-3235 free base) is a potent, orally active and selective SGLT1 inhibitor, with a K_i of 27 nM for human SGLT1. Mizagliflozin displays 303-fold selectivity over SGLT2. Mizagliflozin is used as an antidiabetic agent that can modify postprandial blood glucose excursion. Mizagliflozin also exhibits potential in the amelioration of chronic constipation[1].

IC_{50} & Target

SGLT1

In Vivo

Mizagliflozin (DSP-3235 free base) (3-30 mg/kg; oral) exerts a laxative effect[1].

?Mizagliflozin administrated intravenously (0.3?mg/kg) and orally (3?mg/kg) declined with a short half-life (0.23 and 1.14?h, respectively)[2]

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

Animal Model:	Male Wistar rats (rat model of low-fiber-diet-induced constipation)[1]
Dosage:	3, 10, 30 mg/kg
Administration:	Oral
Result:	Increased fecal wet weight in a rat model of low-fiber-diet-induced constipation.

CUSTOMER VALIDATION

- Nat Biomed Eng. 2022 Jul;6(7):867-881.
- medRxiv. 2023 Mar 8.

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REFERENCES

[1]. Inoue T, et al. Mizagliflozin, a novel selective SGLT1 inhibitor, exhibits potential in the amelioration of chronic constipation. Eur J Pharmacol. 2017 Jul 5;806:25-31.

[2]. Ohno H, et al. Absorption, disposition, metabolism and excretion of [14C]mizagliflozin, a novel selective SGLT1 inhibitor, in rats. Xenobiotica. 2019 Apr;49(4):463-473.

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