Ipragliflozin (L-Proline)

Cat. No.: HY-14894A

CAS No.: 951382-34-6

Molecular Formula: $C_{26}H_{30}FNO_7S$

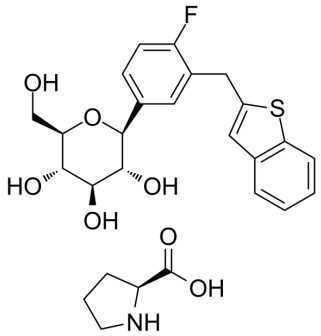
Molecular Weight: 519.58

Target: SGLT

Pathway: Membrane Transporter/Ion Channel

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20 mg/mL (38.49 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9246 mL	9.6232 mL	19.2463 mL
	5 mM	0.3849 mL	1.9246 mL	3.8493 mL
	10 mM	0.1925 mL	0.9623 mL	1.9246 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 mg/mL (3.85 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2 mg/mL (3.85 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ipragliflozin (L-Proline) is a highly potent and selective SGLT2 inhibitor with an IC_{50} of 2.8 nM; little and NO potency for SGLT1/3/4/5/6.

IC_{50} & Target

IC50 value: 2.8 nM (SGLT2)[1][2].

In Vitro

Ipragliflozin (L-Proline) potently and selectively inhibits human, rat, and mouse SGLT2 at nanomolar ranges and exhibits stability against intestinal glucosidases[3].

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

In Vivo

Ipragliflozin (L-Proline) shows good pharmacokinetic properties following oral dosing, and dose-dependently increases

urinary glucose excretion, which lasts for over 12 h in normal mice [3]. Oral administration of ipragliflozin increases urinary glucose excretion in a dose-dependent manner, an effect which is significant at doses of 0.3 mg/kg or higher and lasts over 12 h[4]. Single administration of ipragliflozin dose-dependently increases urinary glucose excretion, reduces blood glucose and plasma insulin levels, and improves glucose intolerance [5].

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

CUSTOMER VALIDATION

- Biochem Pharmacol. 2018 Jun;152:45-59.
- Biochem Pharmacol. 2016 Feb 1;101:27-39.
- J Chromatogr B Analyt Technol Biomed Life Sci. 2015 Sep 1;1000:22-8.
- Hypertens Res. 2017 Jul;40(7):646-651.
- Int J Med Sci. 2018 Jun 13;15(9):937-943.

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REFERENCES

[1]. Imamura M, et al. Discovery of Ipragliflozin (ASP1941): a novel C-glucoside with benzothiophene structure as a potent and selective sodium glucose co-transporter 2 (SGLT2) inhibitor for the treatment of type 2 diabetes mellitus. Bioorg Med Chem. 2012 May

[2]. Suzuki M, et al. Tofogliflozin, a potent and highly specific sodium/glucose cotransporter 2 inhibitor, improves glycemic control in diabetic rats and mice. J Pharmacol Exp Ther. 2012 Jun;341(3):692-701.

[3]. Tahara A, et al. Pharmacological profile of ipragliflozin (ASP1941), a novel selective SGLT2 inhibitor, in vitro and in vivo. Naunyn Schmiedebergs Arch Pharmacol. 2012 Apr;385(4):423-36.

[4]. Tahara A, et al. Antidiabetic effects of SGLT2-selective inhibitor ipragliflozin in streptozotocin-nicotinamide-induced mildly diabetic mice. J Pharmacol Sci. 2012;120(1):36-44.

[5]. Tahara A, et al. Effects of SGLT2 selective inhibitor ipragliflozin on hyperglycemia, hyperlipidemia, hepatic steatosis, oxidative stress, inflammation, and obesity in type 2 diabetic mice. Eur J Pharmacol. 2013 Sep 5;715(1-3):246-55.

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