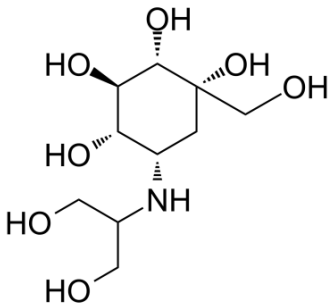
Voglibose

Cat. No.:	HY-B0025
CAS No.:	83480-29-9
Molecular Formula:	$C_{10}H_{21}NO_7$
Molecular Weight:	267.28
Target:	Glucosidase
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (374.14 mM; Need ultrasonic)
DMSO : 100 mg/mL (374.14 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.7414 mL	18.7070 mL	37.4139 mL
5 mM	0.7483 mL	3.7414 mL	7.4828 mL
10 mM	0.3741 mL	1.8707 mL	3.7414 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Voglibose is an N-substituted derivative of valiolamine, excellent inhibitory activity against α-glucosidases and its action against hyperglycemia and various disorders caused by hyperglycemia.Target: α-glucosidasesglibose can inhibit the intestinal α-glucosidases, which are responsible for the digestion of disaccharides such as maltose and sucrose, including maltase and sucrase. The Ki values of Voglibose for sucrase and maltase are about 106and 105 times smaller than the Km values for sucrose and maltose [1]. Voglibose (0.2 mg/kg) completely inhibits the insulin response to sucrose in rats. Voglibose (0.2 mg/kg) reduces the carbohydrate-induced increase in blood glucose in rats. Voglibose (0.2 mg/kg) reduces the carbohydrate-induced increase in blood glucose without causing sustained hypoglycemia in both normal and neonatal streptozotocin-induced diabetic rats [2]. Voglibose (0.001%) treatment increases GLP-1 secretion (Voglibose alone, 1.6-fold; Alogliptin plus Voglibose, 1.5-fold), while it decreases plasma glucose-dependent insulinotropic polypeptide (GIP)

(Voglibose alone, 30%; Alogliptin plus voglibose, 29%) in prediabetic db/db mice after 3 weeks. Voglibose (0.001%) treatment decreases plasma DPP-4 activity by 15% in prediabetic db/db mice. Voglibose (0.001%) treatment increases plasma insulin by 1.8-fold and decreases plasma glucagon by 8% in prediabetic db/db mice [3].

REFERENCES

[1]. Chen, X., Y. Zheng, and Y. Shen, Voglibose (Basen, AO-128), one of the most important alpha-glucosidase inhibitors. Curr Med Chem, 2006. 13(1): p. 109-16.

[2]. Ikenoue, T., et al., Effect of a new hypoglycemic agent, A-4166 [(-)-N-(trans-4-isopropylcyclohexanecarbonyl)-D-phenylalanine], on postprandial blood glucose excursion: comparison with voglibose and glibenclamide. Biol Pharm Bull, 1997. 20(4): p. 354-9.

[3]. Moritoh, Y., K. Takeuchi, and M. Hazama, Combination treatment with alogliptin and voglibose increases active GLP-1 circulation, prevents the development of diabetes and preserves pancreatic beta-cells in prediabetic db/db mice. Diabetes Obes Metab, 2010. 12(3): p. 224-33.

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