

Product Data Sheet

Product Name: Voglibose

Cat. No.: GC18007

Chemical Properties

Cas. No. 83480-29-9

Chemical Name (1S,2S,3R,4S,5S)-5-(1,3-dihydroxypropan-2-ylamino)-1-(hydroxymethyl)cyclohexane-1,2,3,4-tetrol

SMILES C1C(C(C(C(C1(CO)O)O)O)O)NC(CO)CO

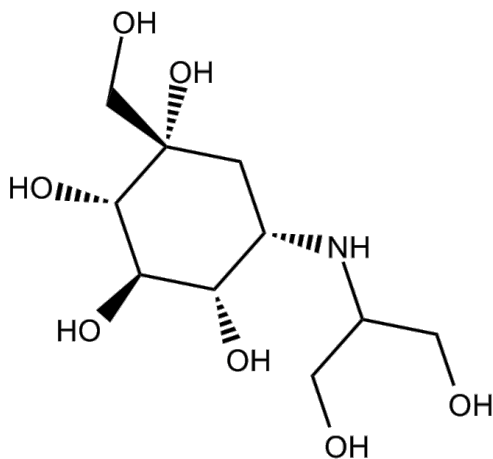
Formula $C_{10}H_{21}NO_7$ M.Wt 267.28

Solubility $\geq 12.95\text{mg/mL}$ in DMSO with gentle warming Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

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 -glucosidases. Voglibose can inhibit the intestinal α -glucosidases, which are responsible for the digestion of disaccharides such as maltose and sucrose, including maltase and

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sucrase. The K_i values of Voglibose for sucrase and maltase are about 106 and 105 times smaller than the K_m 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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