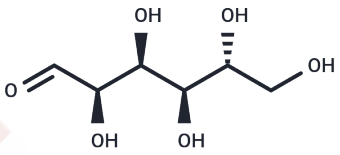
Data Sheet (Cat.No.T0887)

TargetMol

D-Glucose

Chemical Properties



CAS No. : 50-99-7

Formula: C6H12O6

Molecular Weight: 180.16

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	D-Glucose (Glucopyranose) is a monosaccharide, a natural glucose, a sweetener. D-Glucose is the main functional substance of living organisms, and is used as a nutrient in medicine, with diuretic, detoxification and cardiotonic effects.
Targets(IC50)	Endogenous Metabolite
In vitro	**METHODS**: Differentiated Caco-2 cells were stimulated with D-Glucose (125-500 mM) for 5 min and serotonin levels were measured. **RESULTS**: Caco-2 cells released 5-hydroxytryptamine in response to D-Glucose similar to enterochromaffin cells. In response to the highest tested concentration of 500 mM D-Glucose, 5-hydroxytryptamine levels in the supernatant of Caco-2 cells increased by 81.9±25.0%. [1] **METHODS**: Retinal endothelial cells were treated with D-Glucose (30 mM) for 7 days and cell viability was measured by MTT assay. **RESULTS**: The viability of endothelial cells exposed to high glucose was significantly reduced to 76.0±2.6% of the control. [2]
In vivo	**METHODS**: For oral glucose tolerance test (OGTT), rats were starved for 6 h and orally administered MET (200 mg/kg) 1 h before glucose loading. Only distilled water was used as the vehicle in the control group. Wistar rats were fed 50% D-Glucose solution (4 g/kg) and GK diabetic rats were fed at 50% D-Glucose solution (1 g/kg). All blood samples were collected by tail flow 0-120 min after glucose administration and blood glucose was determined. **RESULTS**: Rats receiving MET had a lower apical density of SGLT1 in the jejunum, lower levels of phosphorylated PKA substrate in enterocytes, and lower PGR compared to rats treated with excipients. [3]

Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 240 mg/mL (1332.15 mM),Sonication is recommended. H2O: 33 mg/mL (183.17 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.5506 mL	27.7531 mL	55.5062 mL
5 mM	1.1101 mL	5.5506 mL	11.1012 mL
10 mM	0.5551 mL	2.7753 mL	5.5506 mL
50 mM	0.111 mL	0.5551 mL	1.1101 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Lieder B, et al. The flavanone homoeriodictyol increases SGLT-1-mediated glucose uptake but decreases serotonin release in differentiated Caco-2 cells. PLoS One. 2017 Feb 13;12(2):e0171580.
Castilho Á, et al. Heme oxygenase-1 protects retinal endothelial cells against high glucose- and oxidative/nitrosative stress-induced toxicity. PLoS One. 2012;7(8):e42428.
Zubiaga L, et al. Oral metformin transiently lowers post-prandial glucose response by reducing the apical expression of sodium-glucose co-transporter 1 in enterocytes. iScience. 2023 Jan 25;26(4):106057.
Su G, Liu J, Duan C, et al.Enteric coronavirus PDCoV evokes a non-Warburg effect by hijacking pyruvic acid as a metabolic hub.Redox Biology.2024: 103112.