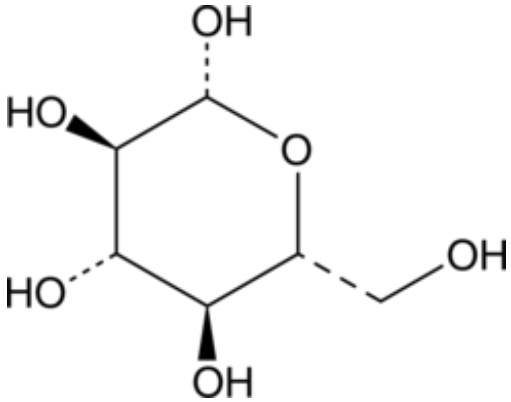
Product Data Sheet

Product Name: β-D-Glucose
Cat. No.: GC40777

Chemical Properties

Cas. No.	492-61-5		
SMILES	O[C@@H]1O[C@H](CO)[C@@H](O)[C@H](O)[C@H]1O		
Formula	C6H12O6	M.Wt	180.2
Solubility	20mg/mL in DMSO, 10mg/mL in DMF, PBS (pH 7.2): 10 mg/mL	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

D-Glucose, a naturally occurring monosaccharide found in plants, is the primary energy source for living organisms.[1] It is utilized as a metabolic intermediate by cells for either aerobic or anaerobic respiration. D-Glucose exists in two cyclic forms, α-D-glucose and β-D-glucose, based on the position of the substituent at the anomeric center.[2] α-D-Glucose is the monomer unit in starch, whereas β-D-glucose is the monomer unit in cellulose.2 When one of these anomers is added to solution, it undergoes reversible epimerization to the other via an open-chain form, during which the specific rotation of the solution changes gradually until it reaches equilibrium. The existence of multiple binding modes of this single monosaccharide has been studied as a model scaffold to design

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compounds with increased probability of ligand binding.[3]

Reference:

[1]. Slein, M.W. D-glucose, determination with hexokinase and glucose-6-phosphate dehydrrogenase. Methods of Enzymatic Analysis 1, 117-123 (1963).
[2]. Horton, H.R. Carbohydrates. Principles of biochemistry 9, 16-22 (1993).
[3]. Hirschmann, R.F., Nicolaou, K.C., Angeles, A.R., et al. The β-D-glucose scaffold as a β-turn mimetic. Accounts of Chemical Research 42(10), 1511-1520 (2009).

Caution: Product has not been fully validated for medical applications. For research use only.
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