

Product Data Sheet

Product Name: D-Mannoheptulose

Cat. No.: GC43500

Chemical Properties

Cas. No. 3615-44-9

SMILES OC[C@@H](O)[C@@H](O)[C@H](O)[C@H](O)C(CO)=O

Formula C₇H₁₄O₇

M.Wt 210.2

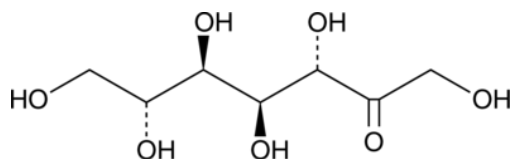
Solubility DMF: 20 mg/ml, DMSO: 20 mg/ml, Ethanol: 1 mg/ml, PBS (pH 7.2): 10 mg/ml

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 is phosphorylated by glucokinase and three tissue-specific hexokinases to produce glucose-6-phosphate in humans. D-Mannoheptulose is a heptose that inhibits glucokinases and hexokinases from diverse organisms through competition with D-glucose ($K_i = 0.25$ mM). It blocks glucose oxidation and glucose-mediated insulin release from pancreatic islet cells. D-Mannoheptulose prevents the conversion of glucose to glucose-6-phosphate that can mediate the activation of the carbohydrate response element binding protein. By blocking glucose phosphorylation, D-mannoheptulose causes transient hyperglycemia in dogs when given at 1 g/kg but not at 8 mg/kg, although postprandial energy expenditure is increased at the lower dose.

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

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