

Product Data Sheet

Product Name: D-Mannitol

Cat. No.: GC12256

Chemical Properties

Cas. No. 69-65-8

Chemical Name (2R,3R,4R,5R)-hexane-1,2,3,4,5,6-hexol

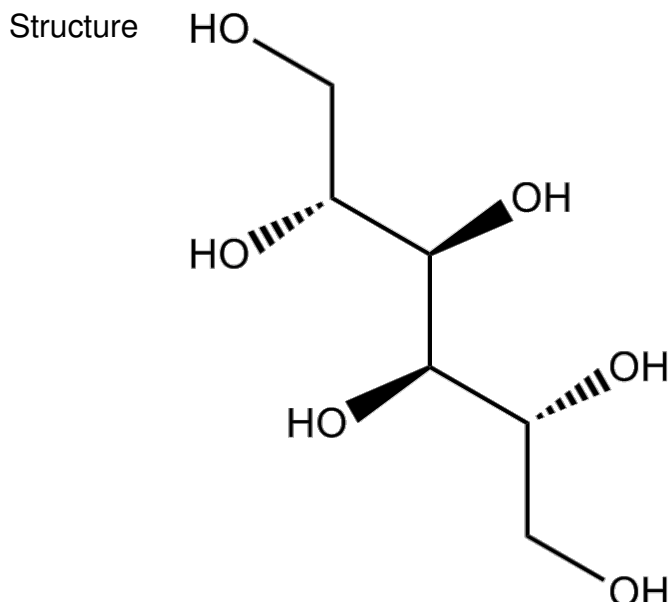
SMILES C(C(C(C(C(CO)O)O)O)O)O

Formula $C_6H_{14}O_6$ M.Wt 182.17

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

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.



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

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Background

D-Mannitol is an osmotic diuretic agent and a weak renal vasodilator. Target: Others D(-)Mannitol is a sugar alcohol that can be used as an inert osmotic control substance. The uptake and phosphorylation of d-mannitol is catalyzed by the mannitol-specific phosphoenolpyruvate-dependent phosphotransferase systems (PTS). Mannitol can interact with neutrophils and monocytes. Experiments have shown that it is able to decrease neutrophil apoptosis in vitro. The compound has been used in studies as a stimulator of cecal microbial growth and cellulolytic activity in rabbits. It has been observed that mannitol can lower the fat digestibility and body fat accumulation in both normal and cecectomized rats, as well as upregulate monocyte HLA-DR, monocyte and neutrophil CD11b. Studies show that the mannitol operon is repressed by the transcription factor, mannitol operon repressor (MtlR) in Escherichia coli [1-3].

References:

- [1]. Tan, K., et al., The mannitol operon repressor MtlR belongs to a new class of transcription regulators in bacteria. J Biol Chem, 2009. 284(52): p. 36670-9.
- [2]. Nishiyama, A., et al., Mannitol lowers fat digestibility and body fat accumulation in both normal and cecectomized rats. J Nutr Sci Vitaminol (Tokyo), 2009. 55(3): p. 242-51.
- [3]. Hanieh, H. and E. Sakaguchi, Effect of D-mannitol on feed digestion and cecotrophic system in rabbits. Anim Sci J, 2009. 80(2): p. 157-62.

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