

Product Data Sheet

Product Name: D-Glucosamine 6-phosphate

Cat. No.: GF14666

Chemical Properties

Cas. No. 3616-42-0

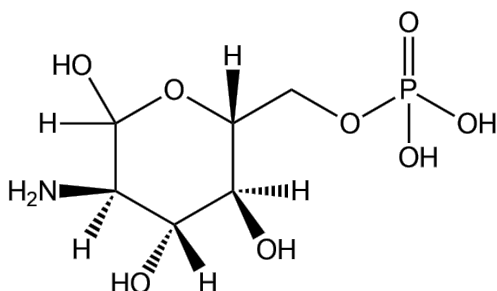
Formula $C_6H_{14}NO_8P$ M.Wt 259.15

Solubility H_2O : 250 mg/mL (964.69 mM; Need ultrasonic) Storage Store at $-20^{\circ}C$, protect from light

General tips For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ 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-Glucosamine 6-phosphate is an endogenous metabolite, a phosphorylated form of glucosamine, which can be synthesized by glutamine fructose-6-phosphate aminotransferase (GFAT)^[1, 2]. D-Glucosamine 6-phosphate is a key intermediate metabolite in the hexosamine biosynthesis pathway (HBP) in cells and is involved in the production of N-acetylglucosamine (GlcNAc) and UDP-GlcNAc^[3]. D-Glucosamine 6-phosphate can be used in the research of diabetes and osteoarthritis^[4, 5].

References:

[1] Weimer S, Prieb J, Kuhlow D, et al. D-Glucosamine supplementation extends life span of nematodes and of ageing mice[J]. Nature communications, 2014, 5(1): 3563.

[2] Kato N, Dasgupta R, Smartt C T, et al. Glucosamine: fructose-6-phosphate aminotransferase:

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

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gene characterization, chitin biosynthesis and peritrophic matrix formation in *Aedes aegypti*[J]. *Insect molecular biology*, 2002, 11(3): 207-216.

[3] Paneque A, Fortus H, Zheng J, et al. The hexosamine biosynthesis pathway: regulation and function[J]. *Genes*, 2023, 14(4): 933.

[4] Miszkiet A, Wojciechowski M. Long range molecular dynamics study of interactions of the eukaryotic glucosamine-6-phosphate synthase with fructose-6-phosphate and UDP-GlcNAc[J]. *Journal of Molecular Graphics and Modelling*, 2017, 78: 14-25.

[5] Salazar J, Bello L, Chávez M, et al. Glucosamine for osteoarthritis: biological effects, clinical efficacy, and safety on glucose metabolism[J]. *Arthritis*, 2014, 2014(1): 432463.

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