

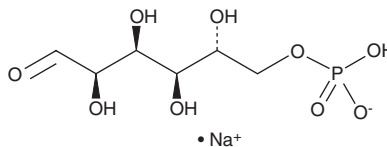
PRODUCT INFORMATION



D-Glucose-6-phosphate (sodium salt)

Item No. 20376

CAS Registry No.: 54010-71-8
Formal Name: D-glucose-6-(dihydrogen phosphate), monosodium salt
Synonyms: G6P, Sodium Glucose-6-Phosphate
MF: C₆H₁₂O₉P • Na
FW: 282.1
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

D-Glucose-6-phosphate (sodium salt) is supplied as a crystalline solid. Aqueous solutions of D-glucose-6-phosphate (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-glucose-6-phosphate (sodium salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

D-Glucose-6-phosphate is formed in cells when glucose is phosphorylated by hexokinase (or glucokinase) or by the conversion of glucose-1-phosphate by phosphoglucosmutase, which is the first step of glycogen synthesis.¹ It is stored as glycogen when blood glucose levels are high. Disruption of D-glucose-6-phosphate activity leads to glycogen storage disease type I or von Gierke's disease, a group of inherited metabolic diseases characterized by severe hypoglycemia, growth retardation, and hepatomegaly, due to accumulation of glycogen and fat in the liver.^{2,3} D-Glucose-6-phosphate is also the starting molecule of both glycolysis and the pentose phosphate pathways.⁴ Because cancer cells adopt glycolysis as a major source of metabolic energy production, and the pentose phosphate pathway plays a role in helping glycolytic cancer cells to meet their anabolic demands, this compound can be used to study the progression of this process.⁵

References

1. Berg, J. M., Tymoczko, J. L., and Stryer, L. Section 25.5 NAD⁺, FAD, and coenzyme A are formed from ATP. *Biochemistry*. 5th edition, W. H. Freeman (2002).
2. Cappellini, M. D. and Fiorelli, G. Glucose-6-phosphate dehydrogenase deficiency. *Lancet* **371(9606)**, 64-74 (2008).
3. Beutler, E. Glucose-6-phosphate dehydrogenase deficiency: A historical perspective. *Blood* **111(1)**, 16-24 (2008).
4. Guma, K. A. and McLean, P. The pentose phosphate pathway of glucose metabolism: Enzyme profiles and transient and steady-state content of intermediates of alternative pathways of glucose metabolism in Krebs ascites cells. *Biochem. J.* **115(5)**, 1009-1029 (1969).
5. Patra, K. C. and Hay, N. The pentose phosphate pathway and cancer. *Trends Biochem. Sci.* **39(8)**, 347-354 (2014).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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