

Product Information

Glucose-6-phosphate Isomerase, human

Recombinant, expressed in *E. coli***SAE0005**

CAS Registry Number: 9001-41-6

E.C. 5.3.1.9

Synonyms: Phosphoglucose isomerase, Neuroleukin, Phosphohexose isomerase, Autocrine motility factor, Sperm antigen 36, GPI, PHI, AMF, NLK, SA-36, GNPI

Storage Temperature: -20 °C.

Product Description

Glucose-6-phosphate isomerase (GPI) is a homodimeric enzyme ubiquitously present in most organisms. GPI catalyzes the interconversion between glucose-6-phosphate and fructose-6-phosphate, the second step of the glycolytic pathway.¹ In mammals, Glucose-6-phosphate isomerase also acts as an autocrine motility factor (AMF), a neuroleukin, and a maturation factor.² GPI deficiency is the second most common erythroenzymopathy of glycolytic enzymes after pyruvate kinase deficiency. Inherited deficiency of the enzymatic activity of GPI causes hereditary nonspherocytic hemolytic anemia (HNSHA) in humans, a severe deficiency that can be associated with hydrops fetalis (α -thalassaemia), immediate neonatal death, and neurological impairment.³

This recombinant GPI contains a C-terminal histidine tag. SAE0005 has been cited in the research literature.⁴

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Product

The enzyme is supplied in a solution of 50 mM Tris-HCl, pH 7.5, and 50% glycerol.

Predicted molecular mass: ~64 kDa

Purity: $\geq 95\%$ (SDS-PAGE)Specific activity: ≥ 200 units/mg protein

Unit Definition: One unit will convert 1.0 μ mole of D-fructose 6-phosphate to D-glucose 6-phosphate per minute at pH 7.4 at 25 °C.

Storage/Stability

Store the product at -20 °C.

When stored at -20 °C, the enzyme retains activity for at least two years. The enzyme can be stored at 4 °C to 25 °C for up to 2 weeks.

Preparation Instructions

It is recommended to dilute this enzyme in buffers supplemented with 1% BSA.

References

1. Bergmeyer, H. U. *et al.*, in *Methods of Enzymatic Analysis*, Volume 1 (Bergmeyer, H. U., ed.), 2nd edition. Academic Press, Inc. (New York, NY), pp. 501-503 (1974).
2. Watanabe, H. *et al.*, *Cancer Res.*, 56(13), 2960–2963 (1996).
3. Lin, H-Y. *et al.*, *Biochim. Biophys. Acta*, 1794(2), 315-323 (2009).
4. Fabarius, A. *et al.*, *Cancers (Basel)*, 14(12), 2883 (2022).

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