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Recombinant Human Glycogen Phosphorylase, Brain Form

Synonyms

Glycogen phosphorylase, brain form; glycogen phosphorylase B.

Description

Glycogen phosphorylase is an important enzyme in carbohydrate metabolism and catalyzes the degradation of glycogen by releasing glucose-1-phosphate from the terminal alpha-1,4-glycosidic bond. The glycogen phosphorylase is a large peptide with 842 amino acids. The two identical subunits form the active dimer including the catalytic sites, glycogen binding sites, and allosteric sites. In mammals, the major isozymes of glycogen phosphorylase are distributed in muscle, liver, and brain. The brain form is predominant in adult brain and embryonic tissues, whereas the liver and muscle types are predominant in adult liver and skeletal muscle, respectively. The brain isoform of glycogen phosphorylase has been suggested as a biomarker for gastric cancer.

Source

- Recombinant protein, purified from *Escherichia coli*.
- Protein Accession No. P11216.

Preparation

The gene encoding the *C*-terminal 193 amino acids of human glycogen phosphorylase, brain form protein (Val650 - Asp843) was cloned and expressed in *E. coli*. The recombinant glycogen phosphorylase protein was purified by proprietary chromatographic techniques.

Predicted Molecular Mass

~ 22 kDa.

Formulation

Recombinant glycogen phosphorylase, brain form is lyophilized from a 0.2 μm filtered 50 mM Tris-HCl (pH 7.4) solution with the protein concentration of 1.2 mg/mL.

Purity

>95%, determined by SDS-PAGE and stained with Commassie blue. (S*ee image below*).

Stability & Storage

- Lyophilized product is stable at room temperature for 3 weeks, it is recommended to be stored desiccated below -20°C in a manual defrost freezer.
- **Reconstitution**: briefly spin the vial prior to opening to bring the contents to the bottom. It is recommended to reconstitute the lyophilized product with sterile PBS.
- Upon reconstituted, the protein should be stored at 4°C for one week. For long term storage, it is recommended to add a carrier protein (0.1% HSA or BSA) and store at -20 or -80°C. **Please avoid repeated freeze-thaw cycles.**

References

1. Johnson, LN. (1992) Glycogen phosphorylase: control by phosphorylation and allosteric effectors. *FASEB Journal* **6** (6): 2274–82.
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3. Coats WS, Browner MF, Fletterick RJ, et al. (1991) An engineered liver glycogen phosphorylase with AMP allosteric activation. *Journal of Biological Chemistry* **266** (24): 16113–9.
4. Shimada S, Matsuzaki H, Marutsuka T, et al. (2001) Gastric and intestinal phenotypes of gastric carcinoma with reference to expression of brain (fetal)-type glycogen phosphorylase. *J. Gastroenterol.* **36** (7): 457–64.