

Human GFPT1 / GFAT Protein

Catalog Number: 11071-HNAE



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

CMSTA1; GFA; GFAT; GFAT1; GFAT1m; GFPT; GFPT1L; MSLG; 2810423A18Rik; AI324119; AI449986; GFA; GFAT; GFAT1; GFAT1m; Gfpt

Protein Construction:

The sequence corresponding to amino acids (Gln 332-Glu 699) of human GFAT (AAA58502.1) was expressed and purified with two amino acids (Gly & Pro) at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human GFAT exists as a homotetramer protein. The GFAT monomer consists of 370 amino acids and predicts a molecular mass of 41.5 kDa as estimated in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4, 10% glycerol

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

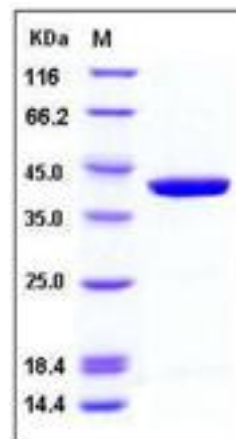
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Glutamine:fructose-6-phosphate amidotransferase 1 (GFAT), also known as GFPT1, is a member of the N-terminal nucleophile aminotransferases and the first rate-limiting enzyme for the entry of glucose into the hexosamine biosynthesis pathway (HBP) in mammals. GFAT transfers the amino group from the L-glutamine amide to the D-fructose 6-phosphate, producing glutamic acid and glucosamine 6-phosphate. GFAT exists as a homotetramer in cytoplasm, and is proposed to be most likely involved in regulating the availability of precursors for N- and O-linked glycosylation of proteins. The full length of human GFAT contains 1 glutamine amidotransferase type-2 domain which catalyzes amide nitrogen transfer from glutamine to the appropriate substrate, and 2 SIS (Sugar Isomerase) domains found in many phosphosugar isomerases and phosphosugar binding proteins. Two isoforms of gfat have been identified: GFAT1 is predominantly expressed in skeletal muscle, whereas GFAT2 is expressed mainly in the central nervous system.

References

1. McKnight G.L., *et al.* (1992), Molecular cloning, cDNA sequence, and bacterial expression of human glutamine:fructose-6-phosphate amidotransferase. *J. Biol. Chem.* 267:25208-25212.
2. Hillier L.W., *et al.*, (2005), Generation and annotation of the DNA sequences of human chromosomes 2 and 4. *Nature* 434:724-731.
3. Beausoleil S.A., *et al.*, (2006), A probability-based approach for high-throughput protein phosphorylation analysis and site localization. *Nat. Biotechnol.* 24:1285-1292.

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