Human PGDH / PHGDH Protein (His Tag)

Catalog Number: **13167-H08E**

General Information

Gene Name Synonym:

3-PGDH; 3PGDH; HEL-S-113; NLS; NLS1; PDG; PGAD; PGD; PGDH; PHGDHD; SERA

Protein Construction:

A DNA sequence encoding the mature form of human PHGDH (O43175) (Met 1-Phe 533) was fused with a polyhistidine tag at the C-terminus and an initial Met at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 90 % 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 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human PHGDH comprises 543 amino acids and has a calculated molecular mass of 58KDa. It migrates as an approximately 55 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, 100mM Arg, 0.1% Tween20, 20% glycerol, pH 8.0

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:

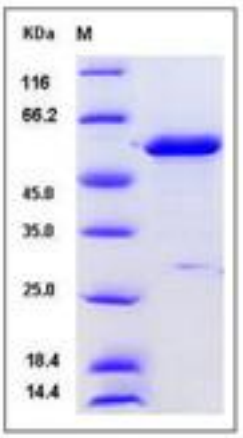
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

PHGDH is a member of the D-isomer specific 2-hydroxyacid dehydrogenase family. This new family consists of D-isomer-stereospecific enzymes. The conserved residues in this family appear to be the residues involved in the substrate binding and the catalytic reaction, and thus to be targets for site-directed mutagenesis. A number of NAD-dependent 2-hydroxyacid dehydrogenases which seem to be specific for the D-isomer of their substrate have been shown to be functionally and structurally related. PHGDH catalyzes the transition of 3-phosphoglycerate into 3-phosphohydroxypyruvate, which is the first and rate-limiting step in the phosphorylated pathway of serine biosynthesis, using NAD+/NADH as a cofactor. Overexpression of PHGDH may cause certain breast cancers. Defects in PHGDH are the cause of phosphoglycerate dehydrogenase deficiency which is characterized by congenital microcephaly, psychomotor retardation, and seizures.

References

1.Pind S, *et al*. (2002) V490M, a common mutation in 3-phosphoglycerate dehydrogenase deficiency, causes enzyme deficiency by decreasing the yield of mature enzyme. J Biol Chem. 277 (9): 7136-43. 2.Du H, *et al*. (2010) 3-Phosphoglycerate dehydrogenase expression is regulated by HOXA10 in murine endometrium and human endometrial cells. Reproduction. 139 (1): 237-45. 3.Possemato R, *et al*. (2011) Functional genomics reveal that the serine synthesis pathway is essential in breast cancer. Nature. 476 (7360): 346-50.