Active Recombinant E. coli Glycerol Kinase Protein, His-tagged

Cat. No. GK-332E **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant E. coli Glycerol Kinase Protein (Met1-Glu502) is produced by E. coli-derived expression system. This protein is fused with a C-terminal 6-His tag.
Species	E.coli
Source	E.coli
ProteinLength	Met1-Glu502
Description	Glycerol kinase from E. coli (glpK) catalyzes the ATP-dependent phosphorylation of glycerol to produce sn-glycerol-3-phosphate (G3P), the first and rate-limiting step in the utilization of glycerol. In the presence of glycerol, glpK is stimulated by interaction with the membrane-bound glycerol facilitator. In the presence of glucose, glpK activity is allosterically inhibited by fructose-1,6-bisphosphate (FBP) of the glycolytic pathway. Under physiological conditions, the enzyme is in an equilibrium between the active dimer and the inactive tetramer. FBP binds to and stabilizes the inactive form, therefore shifting the usage of glycerol metabolic pathway to glycolytic pathway. glpK is also inhibited by phosphocarrier protein IIAGlc by a regulatory mechanism distinct from that of FBP. GlpK is a member of a superfamily of ATPases that includes actin, hexokinase and the heat shock protein hsc70. Although these proteins are dissimilar in amino acid sequence and function, they share similar tertiary folds and likely the same catalytic mechanism. The enzyme activity was measured using a phosphatase-coupled kinase assay.

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Predicted N Terminal	Thr2
Form	Supplied as a 0.2 μm filtered solution in Tris, NaCl, Glycerol, Brij-35 and DTT.
Bio-activity	Measured by its ability to transfer phosphate from ATP to glycerol. The specific activity is >1,500 pmol/min/μg.
Molecular Mass	57 kDa
Endotoxin	<1.0 EU per 1 μg of the protein by the LAL method.
Purity	>75%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain at 5 μg per lane
Storage	Avoid repeated freeze-thaw cycles. 6 months from date of receipt, -70 centigrade as supplied. 3 months, -70 centigrade under sterile conditions after opening.

GENE INFORMATION

Gene Name	glpK glycerol kinase [Escherichia coli str. K-12 substr. MG1655]
Official Symbol	GK
Synonyms	ATP:glycerol 3-phosphotransferase; EC 2.7.1.30; GK; GK1; GKD; glpK; Glycerokinase; Glycerol Kinase; ECK3918;
Gene ID	948423
Protein Refseq	NP_418361

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UniProt ID	P0A6F3

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