

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

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

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UniProt ID

P0A6F3

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