

HK1 Protein, Human, Recombinant (His)

General Information

Synonyms: HK1;Hexokinase-1;Hexokinase-A;Brain form hexokinase;Hexokinase type I (HK I)

Protein Construction: 1-917 aa

Species: Human

Expression Host: E. coli

Accession: P19367

Molecular Weight: 106.5 kDa (predicted)

AA Sequence:

MIAAQLLAYFTELKDDQVKKIDKYLYAMRLSDETLIDIMTRFRKEMKNGLSRDFNPTATVKMLPTFVRSIPDG
SEKGFDFIALDLGGSSFRILRVQVNHEKNQNVHMESEVYDTPENIVHSGSGSQLFDHVAECLGDFMEKRKIKDKK
LPVGFTFSFPCQQSKIDEAILITWTKRFKASGVEGADVVKLLNKAIKKRGDYDANIVAVVNDTVGTMTCGYD
DQHCEVGLIIGTGNACYMEELRHIDLVEGDEGRMCINTEWGAFGDDGSLEDIRTEFDREIDRGLNPGKQLFE
KMVSGMYLGELVRLILVKMAKEGLLFEGRITPELLTRGKFNTSDVSAIEKNKEGLHNAKEILRLGVEPSSDDDCV
SVQHVCTIVSFRSANLVAATLGAILNRLRDNKGTPRLRRTTVGVDGSLYKTHPQYSRRFHKTLRRLVPDSVDFRFL
LSESGSGKGAAMVTAVAYRLAEQHRQIEETLAHFHLTKDMLLEVKKRMRAMELGLRKQTHNNAVVKMLPS
FVRRTPDGTENGDFLALDLGGTNFRVLLVKIRSGKKRTVEMHNKIYAIPIEIMQGTGEELFDHIVSCISDFLDYM
GIKGRMPLGFTFSFPCQQTSLDAGILITWTKGFKATDCVGHVVTLLRDAIKRREEFDLDVVAVVNDTVGTM
MTCAYEPTCEVGLIVGTGSNACYMEEMKNVEMVEGDQGMCMINMEWGAFGDNGLDDIRTHYDRLVDEY
SLNAGKQRYEKMISGMYLGEIVRNILIDFTKKGFLFRGQISETLKTRGIFETKFLSQIESDRLALLQVRAILQQLGL
NSTCDDSVLVKTVCGVVSRRAAQLCGAGMAAVVDKIRENRLDRLNVTGVDGTLYKLHPHFSRIMHQTVKE
LSPKCNVSFLLSEDSGSGKGAALITAVGVRLRTEASS

QC Testing

Biological Activity: Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 90% as determined by SDS-PAGE.

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Tris-based buffer, 50% glycerol

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Catalyzes the phosphorylation of various hexoses, such as D-glucose, D-glucosamine, D-fructose, D-mannose and 2-deoxy-D-glucose, to hexose 6-phosphate (D-glucose 6-phosphate, D-glucosamine 6-phosphate, D-fructose 6-phosphate, D-mannose 6-phosphate and 2-deoxy-D-glucose 6-phosphate, respectively). Does not phosphorylate N-acetyl-D-glucosamine. Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate. Involved in innate immunity and inflammation by acting as a pattern recognition receptor for bacterial peptidoglycan. When released in the cytosol, N-acetyl-D-glucosamine component of bacterial peptidoglycan inhibits the hexokinase activity of HK1 and causes its dissociation from mitochondrial outer membrane, thereby activating the NLRP3 inflammasome.

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