

AR09040PU-L**Human Hexokinase-1 (1-917, His-tag) - Purified****Alternate names:**

Brain form hexokinase, HK1, Hexokinase type I

Quantity:

0.5 mg

Concentration:

1.0 mg/ml (determined by Bradford assay)

Background:

Hexokinase is the first enzyme in the glycolytic pathway, catalyzing the transfer of a phosphoryl group from ATP to glucose to form glucose-6-phosphate and ADP. In mammals, four distinct enzymes-types 1 to 4 hexokinases-have been identified. The enzyme is found in most cells, but there is tissue specificity for the particular type of hexokinase. Hexokinase1 is found in the adipose tissue and liver and encodes a ubiquitous form of hexokinase which localizes to the outer membrane of mitochondria. Mutations in this hexokinase1 have been associated with hemolytic anemia due to hexokinase deficiency.

Uniprot ID:[P19367](#)**NCBI:**[NP_000179.2](#)**GeneID:**[3098](#)**Species:**

Human

Source:

E. coli

Format:**State:** Liquid purified protein**Purity:** >90% by SDS PAGE**Buffer System:** 20 mM Tris-HCl pH 8.0, 10% glycerol**Description:**

Recombinant human Hexokinase1, fused to His-tag at N-terminus, was expressed in E.coli and purified by using conventional chromatography techniques.

AA Sequence:

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MGSSHHHHHH SSGLVPRGSH MIAAQLLAY FTELKDDQVK KIDKYLYAMR LSDETLIDIM
TRFRKEMKNG LSRDFNPTAT VKMLPTFVRS IPDGSEKGF IALDLGGSSF RILRVQVNHE
KNQNVHMESE VYDTPENIVH GSGSQLFDHV AECLGDFMEK RKIKDKKLPV GFTFSFPCQQ
SKIDEAILIT WTKRFKASGV EGADVVKLLN KAIKKRGDYD ANIVAVVNDT VGTMMTCGYD
DQHCEVGLII GTGTNACYME ELRHIDLVEG DEGRMCINTE WGAFGDDGSL EDIRTEFDRE
IDRGS LNPGK QLF EK MVSGM YLGELVRLIL VKMAKEGLLF EGRITPELLT RGKFN TSDVS
AIEKNKEGLH NAKEILTRLG VEPSDDDCVS VQHVCTIVSF RSANLVAATL GAILNRLRDN
KGT PRLRTV GVDGSLYKTH PQYSRRFHKT LRRLVPDSV RFLLESSESGS KGAAMVTAVA
YRLAEQHRQI EETLAHFHLT KDMLLEVKKR MRAEMELGLR KQTHNNAVVK MLPSFVRRTF
DGTENGDFLA LDLGGTNFRV LLVKIRSGKK RTVEMHNKIY AIPIEIMQGT GEELFDHIVS
CISDFLDYMG IKGPRMPLGF TFSFPCQOTS LDAGILITWT KGFKATDCVG HDVVTLRLDA
IKRREEFDLD VVAVVNDTVG TMTCAYEEP TCEVGLIVGT GSNACYMEEM KNVEMVEGDQ
GQMCINMEWG AFGDNGCLDD IRTHYDRLVD EYSLNAGKQR YEKMISGMYL GEIVRNILID
FTKKGFLFRG QISETLKTRG IFETKFLSQI ESDRLALLQV RAILQQQLGN STCDD SILVK
TVCGVVSRRR AQLCGAGMAA VVDKIRENRG LDRLNVTGV DGTLYKLHPH FSRIMHQTVK
ELSPKCNVSF LLEDGSGKG AALITAVGVR LRTEASS
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Specific Activity: > 2 units/ml obtained by measuring the increase of NADPH in absorbance at 340 nm resulting from the reduction of NADP. In the coupled mode, one unit will produce 1.0 umole of NADPH per minute as glucose is phosphorylated by ATP at pH 7.4 at 30°C.

Molecular weight: 104.6 kDa (937 a.a)

Storage:

Store undiluted at 2-8°C for up to two weeks or (in aliquots) at -20°C or -70°C for longer.

Avoid repeated freezing and thawing.

Shelf life: one year from despatch.

General Readings:

Jon E. et al.,(2003) J.Exp Biology. 206 : 2049-2057.

Protocols:

Activity Assay

1. Prepare a 2.57ml reaction mixture into a suitable container: The final concentrations are 39 mM triethanolamine, 216 mM D-glucose, 0.74mM ATP, 7.8 mM MgCl₂, 1.1 mM beta-NADP, 2.5 units G6PD.

2. Equilibrate to 25°C and monitor the A_{340nm} until the value is constant using a spectrophotometer.

3. Add 5ug of recombinant hexokinase1 into reaction mixture and mix immediately.

4. Record the increase in A_{340nm} for 5 minutes

Pictures:

Hexokinase-1: 12% SDS PAGE

