# Hexokinase-1 (HK1) E.coli Recombinant Protein

## PRODUCT OVERVIEW

| | |
|---|---|
| **Product Name** | Hexokinase-1 (HK1), Recombinant Protein |
| **Full Product Name** | Recombinant E.coli Hexokinase-1 |
| **Product Gene Name** | HK1 recombinant protein |
| **Sequence** | VHLGPKKPQA RKGSMADVPK ELMDEIHQLE DMFTVDSETL RKVVKHFIDE LNKGLTKKGG NIPMIPGWVM EFPTGKESGN YLAIDLGGTN LRVVLVKLSG NHTFDTTQSK YKLPHDMRTT KHQEELWSFI ADSLKDFMVE QELLNTKDTL PLGFTFSYPA SQNKINEGIL QRWTKGFDIP NVEGHDVVPL LQNEISKREL PIEIVALIND TVGTLIASYY TDPETKMGVI FGTGVNGAFY DVVSDIEKLE GKLADDIPSN SPMAINCEYG SFDNEHLVLP RTKYDVAVDE QSPRPGQQAF EKMTSGYYLG ELLRLVLLEL NEKGLMLKDQ DLSKLKQPYI MDTSYPARIE DDPFENLEDT DDIFQKDFGV KTTLPERKLI RRLCELIGTR AARLAVCGIA AICQKRGYKT GHIAADGSVY NKYPGFKEAA AKGLRDIYGW TGDASKDPIT IVPAEDGSGA GAAVIAALSE KRIAEGKSLG IIGA |
| **Host** | E Coli |
| **Form/Format** | Liquid containing glycerol |
| **Purity/Purification** | Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific) |
| **Preparation and Storage** | Store at -20 degree C. For extended storage, conserve at -20 or -80 degree C. |
| **Molecular Weight** | 102,486 Da |
| **Tag Information** | This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information. |
| **Sterility** | Sterile filter available upon request. |
| **Endotoxin** | Low endotoxin available upon request. |
| **Chromosome Location** | Chromosome: 10; NC_000010.10 (71029756..71161638). Location: 10q22 |
| **OMIM** | 142600 |
| **3D Structure** | ModBase 3D Structure for P19367 |
| **ISO Certification** | Manufactured in an ISO 9001:2015 Certified Laboratory. |
| **Related Product Information for HK1 recombinant protein** | MBS1265449 is a recombinant protein targeting HK1. Also known as Recombinant E.coli Hexokinase-1. Host: E Coli. |
| **Other Notes** | Small volumes of HK1 recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply. |

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for HK1. It may not necessarily be applicable to this product.

| | |
|---|---|
| **NCBI GI #** | 188497754 |
| **NCBI GeneID** | 3098 |
| **NCBI Accession #** | NP_000179.2 |
| **UniProt Primary Accession #** | P19367 |
| **UniProt Secondary Accession #** | O43443; O43444; O75574; Q5VTC3; Q96HC8; Q9NNZ4; Q9NNZ5; E9PCK0 |

| | |
|---|---|
| **UniProt Related Accession #** | P19367 |
| **GenBank Nucleotide #** | NM_000188.2 |
| **NCBI Official Full Name** | hexokinase-1 isoform HKI |
| **NCBI Official Synonym Full Names** | hexokinase 1 |
| **NCBI Official Symbol** | HK1 |
| **NCBI Official Synonym Symbols** | HKD; HKI; HXK1; HMSNR; HK1-ta; HK1-tb; HK1-tc |
| **UniProt Protein Name** | Hexokinase-1 |
| **UniProt Synonym Protein Names** | Brain form hexokinase; Hexokinase type I |
| **Protein Family** | Probable histidine kinase |
| **UniProt Gene Name** | HK1 |
| **UniProt Synonym Gene Names** | HK I |
| **UniProt Entry Name** | HXK1_HUMAN |
| **NCBI Protein Information** | hexokinase-1; HK I; glycolytic enzyme; hexokinase type I; brain form hexokinase |
| **NCBI Summary for HK1** | Hexokinases phosphorylate glucose to produce glucose-6-phosphate, the first step in most glucose metabolism pathways. This gene encodes a ubiquitous form of hexokinase which localizes to the outer membrane of mitochondria. Mutations in this gene have been associated with hemolytic anemia due to hexokinase deficiency. Alternative splicing of this gene results in five transcript variants which encode different isoforms, some of which are tissue-specific. Each isoform has a distinct N-terminus; the remainder of the protein is identical among all the isoforms. A sixth transcript variant has been described, but due to the presence of several stop codons, it is not thought to encode a protein. [provided by RefSeq, Apr 2009] |
| **UniProt Comments for HK1** | HK1: a glycolytic enzyme that catalyzes the reaction ATP + D-hexose = ADP + D-hexose 6-phosphate. The first and rate-limiting step in glycosis, a pathway that produces energy in the form of ATP from glucose. An allosteric enzyme inhibited by its product glucose-6-phosphate (Glc-6-P). HK-2 and its mitochondrial receptor (VDAC) play the most pivotal and direct roles in the ""Warburg effect"". Acts as a ""glucose sensor"" by trapping glucose inside the cell by catalyzing its phosphorylation to produce Glc-6-P. In vertebrates there are four major glucose-phosphorylating isoenzymes, designated hexokinase I, II, III and IV (glucokinase). Four human isoforms are produced by alternative splicing and alternative initiation. Isoform HK1 is markedly elevated in rapidly growing tumor cells exhibiting high glucose catabolic rates. HK1 is present in most tissues but is especially prominent in brain and kidney. Isoform HK1-SC is is an integral membrane protein detected in round spermatids, condensing spermatids and mature sperm where it is found in the head membranes, mitochondria of the midpiece and the fibrous sheath of the flagellum. Isoform HK1-SA is first expressed during meiosis and continues to be present in postmeiotic germ cells while isoform HK1-SB is present only in postmeiotic germ cells.<br><br>Protein type: Carbohydrate Metabolism - galactose; Carbohydrate Metabolism - fructose and mannose; EC 2.7.1.1; Carbohydrate Metabolism - starch and sucrose; Carbohydrate Metabolism - glycolysis and gluconeogenesis; Kinase, other; Carbohydrate Metabolism - amino sugar and nucleotide sugar; Mitochondrial<br><br>Chromosomal Location of Human Ortholog: 10q22<br><br>Cellular Component: mitochondrial outer membrane; mitochondrion; cytosol; lipid raft<br><br>Molecular Function: protein binding; hexokinase activity; mannokinase activity; fructokinase activity; glucokinase activity; ATP binding<br><br>Biological Process: hexose metabolic process; glycolysis; hexose transport; glucose 6-phosphate metabolic process; carbohydrate phosphorylation; carbohydrate metabolic process; cell glucose homeostasis; pathogenesis; glucose transport; transmembrane transport<br><br>Disease: Hemolytic Anemia, Nonspherocytic, Due To Hexokinase Deficiency; Neuropathy, Hereditary Motor And Sensory, Russe Type |
| **Research Articles on HK1** | **1.** The screening for novel Parkin substrate(s) identified mitochondrial hexokinase I (HKI) as a candidate. |

| | |
|---|---|
| **Precautions** | All of MyBioSource's Products are for scientific laboratory research purposes and are not for diagnostic, therapeutics, prophylactic or in vivo use. Through your purchase, you expressly represent and warrant to MyBioSource that you will properly test and use any Products purchased from MyBioSource in accordance with industry standards. MyBioSource and its authorized distributors reserve the right to refuse to process any order where we reasonably believe that the intended use will fall outside of our acceptable guidelines. |
| **Disclaimer** | While every efforts were made to ensure the accuracy of the information provided in this datasheet, MyBioSource will not be liable for any omissions or errors contained herein. MyBioSource reserves the right to make changes to this datasheet at any time without prior notice.<br><br>It is the responsibility of the customer to report product performance issues to MyBioSource within 30 days of receipt of the product. Please visit our Terms & Conditions page for more information. |
| **Product Note** | Select online data sheet information is drawn from bioinformatics databases, occasionally resulting in ambiguous or non-relevant product information. It is the responsibility of the customer to review, verify, and evaluate the information to make sure it matches their requirements before purchasing the kit. Our ELISA Kit assays are dynamic research tools and sometimes they may be updated and improved. If the format of this assay is important to you then please request the current manual or contact our technical support team with a presales inquiry before placing an order. We will confirm the current details of the assay. We cannot guarantee the sample manual posted online is the most current manual, it is intended to serve as an example only. Please refer to the instructions For Use provided with the assay kit for precise details. |

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures.

**MyBioSource** | Tel: +1.858.633.0165 | Fax: +1.858.633.0166 | mybiosource.com/contact-us
Online datasheet: https://www.mybiosource.com/recombinant-protein/hexokinase-1/1265449