

Recombinant Rat HXK1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52243

Size: 10ug, 100ug

Protein Name: Hexokinase-1 (EC 2.7.1.1) (Brain form hexokinase) (Hexokinase type I) (HK I) (Hexokinase-A)

Synonym: Hk1

UniProt ID: P05708

UniProt Link: www.uniprot.org/uniprotkb/P05708/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 918 AA

Molecular Weight: 102 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MIAAQLLAYFYFTELKDDQVKKIDKYLYAMRLSDEILIDILTRFKKEMKNGLSRDYNPTASVKMLPTFVR
SIPDGSEKGFIALDLGGSSFRILRVQVNHEKNQNVSMESIYDTPENIVHGSGTQLFDHVADCLGDF
MEKKKIKDKKLPVGFTFSFPCRQSKIDEAVLITWTKRFKASGVEGADVVKLLNKAIKKRGDYDANIVA
VVNDTVGTMMTTCGYDDQQCEVGLIIGTGTNACYMEELRHIDLVEGDEGRMCINTEWGAFGDDGSLE
DIRTEFDRELDGRSLNPGKQLFEKMOVSGMYMGELVRLILVKMAKEGLLFEGRITPELLTRGKFNTSD
VSAIEKDKEGIQNAKEILTRLGVEPSDVDCVSVQHICTIVSFRSANLVAATLGAILNRLRDNKGTPRLR
TTVGVDGSLYKMHQPYSRRFHKTLRRLVPDSDVRFLLESSEGTGKGAAMVTAVAYRLAEQHRQIEET
LAHFRLSKQTLMEVKKRLRTEMEMGLRKETNSKATVKMLPSFVRSIPDGTEHGDFLALDLGGTNFRV
LLVKIRSGKKRTVEMHNKIYSIPLEIMQGTGDELFDHIVSCISDFLDYMGIKGPRMPLGFTFSFPCHQT
NLDCGILISWTKGFKATDCEGHDVASLLRDAVKRREEFDLDVVAVVNDTVGTMMTTCAYEEPTCEIGLI
VGTGTNACYMEEMKNVEMVEGNQGMCMINMEWGAFGDNGCLDDIRTDGDKVVDEYSLNSGKQRF
EKMISGMYLGEIVRNILIDFTKKGFLFRGQISEPLKTRGIFETKFLSQIESDRLALLQVRILQQLGLNST
CDDSILVKTVCVVSKRAAQLCGAGMAAVVEKIRENRGLDHLNVTVGVDGTLYKLHPHFSRIMHQT
KELSPKCTVSFLLSEDSGSGKGAALITAVGVRLRGDPSIA

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Hexokinase-1 (EC 2.7.1.1) (Brain form hexokinase) (Hexokinase type I) (HK I) (Hexokinase-A) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: 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) (PubMed:13211595, PubMed:3579310, PubMed:5871820). Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate (PubMed:13211595, PubMed:5871820). Involved in innate immunity and inflammation by acting as a pattern recognition receptor for bacterial peptidoglycan (By similarity). 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 (By similarity).

Subcellular Localization: Mitochondrion outer membrane ; Peripheral membrane protein . Cytoplasm, cytosol . Note=The mitochondrial-binding peptide (MBP) region promotes association with the mitochondrial outer membrane. Dissociates from the mitochondrial outer membrane following inhibition by N-acetyl-D-glucosamine, leading to relocation to the cytosol.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.