HK1 Peptide - Middle Region Blocking Peptide

PRODUCT OVERVIEW

Product Name	HK1, Blocking Peptide
Full Product Name	HK1 Peptide - middle region
Product Gene Name	HK1 blocking peptide
Product Synonym Gene Name	HK1-ta; HK1-tb; HK1-tc; HKI; HXK1
Sequence	ILVKMAKEGL LFEGRITPEL LTRGKFNTSD VSAIEKNKEG LHNAKEILTR
Species Reactivity	Human
Form/Format	Lyophilized powder
Preparation and Storage	Add 100ul of sterile PBS. Final peptide concentration is 1 mg/ml in PBS. For longer periods of storage, store at -20 degree C. Avoid repeat freeze-thaw cycles.
Antibody/Peptide Pairs	HK1 peptide (MBS3239978) is used for blocking the activity of HK1 antibody (MBS3215061)
Molecular Weight	103kDa
OMIM	142600
Product Categories/Family for HK1 blocking peptide	Peptide
Applications Tested/Suitable for HK1 blocking peptide	Western Blot (WB)
Related Product Information for HK1 blocking peptide	This is a synthetic peptide designed for use in combination with anti-HK1 Antibody, made Target Description: 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.
Other Notes	Small volumes of HK1 blocking peptide 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.
Searchable Terms for HK1 purchase	MBS3239978 is a blocking peptide targeting HK1. Also known as HK1 Peptide - middle region. Reactive in Human.

ADDITIONAL DETAILS

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

NCBI GI #	15991831
NCBI GeneID	3098
NCBI Accession #	NP_277033
UniProt Primary Accession #	P19367
UniProt Related Accession #	P19367

GenBank Nucleotide #	NM_033498
NCBI Official Full Name	hexokinase-1 isoform HKI-ta/tb
NCBI Official Synonym Full Names	hexokinase 1
NCBI Official Symbol	HK1
NCBI Official Synonym Symbols	HK; HKD; HKI; HXK1; RP79; HMSNR; HK1-ta; HK1-tb; HK1-tc; hexokinase
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
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 several transcript variants which encode different isoforms, some of which are tissue-specific. [provided by RefSeq, Apr 2016]
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. Protein type: Carbohydrate Metabolism - amino sugar and nucleotide sugar; Kinase, other; Carbohydrate Metabolism - starch and sucrose; Carbohydrate Metabolism - glycolysis and gluconeogenesis; Mitochondrial; Carbohydrate Metabolism - galactose; EC 2.7.1.1; Carbohydrate Metabolism - fructose and mannose Chromosomal Location of Human Ortholog: 10q22 Cellular Component: mitochondrial outer membrane; mitochondrion; cytosol; lipid raft Molecular Function: hexokinase activity; protein binding; mannokinase activity; fructokinase activity; glucokinase activity; ATP binding Biological Process: hexose metabolic process; glycolysis; hexose transport; carbohydrate metabolic process; glucose 6-phosphate metabolic process; carbohydrate phosphorylation; cell glucose homeostasis; pathogenesis; glucose transport; transmembrane transport Disease: Hemolytic Anemia, Nonspherocytic, Due To Hexokinase Deficiency; Neuropathy, Hereditary Motor And Sensory, Russe Type
Research Articles on HK1	**1.** The authors found that in addition to retinitis pigmentosa, HK1 E851K missense mutation can also cause dominant macular dystrophy and cone-rod dystrophy, which primarily affect cone photoreceptors instead of rods.

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