

Product Specification Sheet

Hexokinase I (HXK-I/HK1) Antibodies

Cat. # HXK13-P	Mouse HXK-I control peptide # 2	SIZE: 100 ug
Cat. # HXK13-A	Rabbit Anti-Mouse HXK-I IgG # 1 (Aff pure)	SIZE: 100 ug

Hexokinase catalyzes the first step of several metabolic pathways by converting D-hexose to D-hexose-6-P. Hexokinase is an allosteric enzyme inhibited by its products glucose-6-phosphate. At least 4 related hexokinase isoforms (**HXKI-III**; **HXK-IV** also known as Glucokinase) have been cloned and characterized. Hexokinases (~100kDa for HXK1-III; HXKIV lacks the N-terminal domains and is ~50 kDa) are outer mitochondrial membrane proteins. The N-terminus, containing the mitochondrial target sequence, and the C-terminal has high sequence homology among various isoforms. The catalytic activity is associated with the C-terminus and other regulatory functions are controlled by the N-terminus. HXK1 is located on chromosome 10. It exists either as a cytosolic protein or as a protein associated with the outer mitochondrial membrane via an interaction with porin, a voltage-dependent anion channel. HXK1/HK1 is alternatively spliced into 3 isoforms: HK1-SA (975 aa) and HK1-SB and HK1-SC are alternatively spliced at Met-1 and Met-53. Isoform HK1-SA (1-974aa), isoform HK1-SB and isoform HK1-SC (53-974aa) are found only in spermatogenic cells. Isoform HK1-SC is 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. Defects in HK1 gene causes hemolytic anemia.

Storage

Short-term: unopened, undiluted liquid vials at -20°C and powder at 4°C or -20°C..

Long-term: at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using Chemiluminescence technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested. We recommend the use of affinity purified antibody at 1-20 ug/ml in paraformaldehyde fixed sections of tissues.

Specificity & Cross-reactivity

Mouse HXK13-P control peptide is 100% conserved in rat and 88% in human/monkey, bovine and chicken, and 94% in canine HXK1 sequences. Since the epitope for HXK13-P is located at 94-110 aa, the antibody should detect all 3-isoforms (HK1-SA, HK1-SB, and HK1-SC). No significant homology of HXK13-P is seen with HXK2-4. Antibody crossreactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: the wb site).

General References: Nishi S et al (1988) BBRC 157, 937; Mgani M (1991) JBC 266, 502; Schwab DA (1989) PNAS 86, 2563; Arora KK (1990) JBC 265, 6481 Bianchi, M. et al (1995) *Blood Cells Molecules Dis.* 21: 2-8

*This product is for In vitro research use only.

Related material available from ADI

Antibodies HXKI-III;

HXK13-A-P 71226S

Source of Antigen, and Antibodies

Antigen	17-aa peptide of Mouse HXK1 (1); Designated (HXK13-P or control peptide). Epitope location ~ N-terminus (94-110 aa)
Ab Host/type	Rabbit, Polyclonal IgG, purified over antigen-agarose (Cat # HXK13-A) supplied in PBS+0.1% BSA+0.05% azide
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Supplied in **Buffer:** PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

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