SANTA CRUZ BIOTECHNOLOGY, INC.

HXK I (H-95): sc-28885

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The hexokinases utilize Mg-ATP as a phosphoryl donor to catalyze the first step of intracellular glucose metabolism, the conversion of glucose to glucose-6-phosphate. Four hexokinase isoenzymes have been identified, including hexokinase I (HXK I), hexokinase II (HXK II), hexokinase III (HXK III) and hexokinase IV (HXK IV, also designated glucokinase or GCK). Hexokinases I-III each contain an N-terminal cluster of hydrophobic amino acids. Glucokinase lacks the N-terminal hydrophobic cluster. The hydrophobic cluster is thought to be necessary for membrane binding. This is substantiated by the finding that glucokinase has lower affinity for glucose than do the other hexokinases. HXK I has been shown to be expressed in brain, kidney and heart tissues as well as in hepatoma cell lines. HXK II is involved in the up-take and utilization of glucose by adipose and skeletal tissues. Of the hexo-kinases, HXK III has the highest affinity for glucose. Glucokinase is expressed in pancreatic beta cells where it functions as a glucose sensor, determining the "set point" for Insulin secretion.

REFERENCES

1. Katzen, H.M. and Schimke, R.T. 1965. Multiple forms of hexokinase in the rat: tissue distribution, age dependency, and properties. Proc. Natl. Acad. Sci. USA 54: 1218-1225.
2. Arora, K.K., et al. 1990. Glucose phosphorylation in tumor cells. Cloning, sequencing, and overexpression in active form of a fulllength cDNA encoding a mitochondrial bindable form of hexokinase. J. Biol. Chem. 265: 6481-6488.
3. Stoeffel, M., et al. 1992. Human glucokinase gene: isolation, characterization, and identification of two missense mutations linked to early-onset non-insulin-dependent (type 2) diabetes mellitus. Proc. Natl. Acad. Sci. USA 89: 7698-7702.
4. Deeb, S.S., et al. 1993. Human hexokinase II: sequence and homology to other hexokinases. Biochem. Biophys. Res. Commun. 197: 68-74.
5. Palma, F., et al. 1996. Purification and characterization of the carboxyl-domain of human hexokinase type III expressed as fusion protein. Mol. Cell. Biochem. 155: 23-29.

CHROMOSOMAL LOCATION

Genetic locus: HK1 (human) mapping to 10q22.1; Hk1 (mouse) mapping to 10 B4.

SOURCE

HXK I (H-95) is a rabbit polyclonal antibody raised against amino acids 316-410 mapping within an internal region of HXK I of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

HXK I (H-95) is recommended for detection of HXK I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

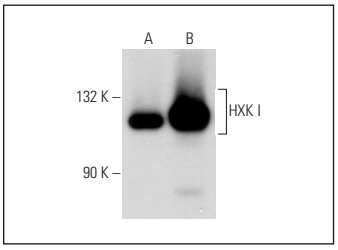
HXK I (H-95) is also recommended for detection of HXK I in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HXK I siRNA (h): sc-39044, HXk I siRNA (m): sc-39045, HXK I shRNA Plasmid (h): sc-39044-SH, HXk I shRNA Plasmid (m): sc-39045-SH, HXK I shRNA (h) Lentiviral Particles: sc-39044-V and HXk I shRNA (m) Lentiviral Particles: sc-39045-V.

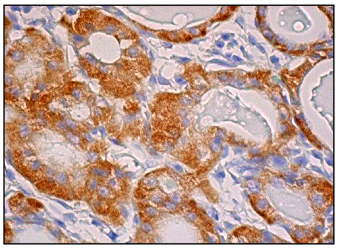
Molecular Weight of HXK I: 120 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or HXK I (h2): 293T Lysate: sc-170521.

DATA



HXK I (H-95): sc-28885. Western blot analysis of HXK I expression in non-transfected: sc-117752 (**A**) and human HXK I transfected: sc-170521 (**B**) 293T whole cell lysates.



HXK I (H-95): sc-28885. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Nakamura, N., et al. 2008. Cleavage of disulfide bonds in mouse spermatogenic cell-specific type 1 hexokinase isozyme is associated with increased hexokinase activity and initiation of sperm motility. Biol. Reprod. 79: 537-545.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.