SANTA CRUZ BIOTECHNOLOGY, INC.

HXK I (N-19): sc-6517

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 uptake and utilization of glucose by adipose and skeletal tissues. Of the hexokinases, HXK III has the highest affinity for glucose. Glucokinase is expressed in pancreatic β cells where it functions as a glucose sensor, determining the "set point" for Insulin secretion.

CHROMOSOMAL LOCATION

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

SOURCE

HXK I (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus 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.

Blocking peptide available for competition studies, sc-6517 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HXK I (N-19) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HXK I (N-19) is also recommended for detection of HXK I in additional species, including equine, canine, bovine, porcine and avian.

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.

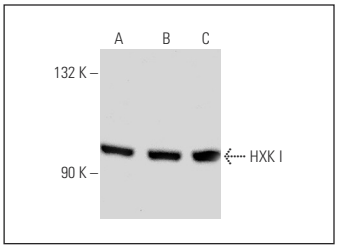
Molecular Weight of HXK I: 120 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or SK-N-MC cell lysate: sc-2237.

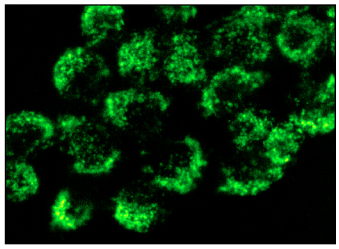
STORAGE

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

DATA



HXK I (N-19): sc-6517. Western blot analysis of HXK I expression in HeLa (**A**), Hep G2 (**B**) and SK-N-MC (**C**) whole cell lysates.



HXK I (N-19): sc-6517. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Kooptiwut, S., et al. 2002. Comparison of Insulin secretory function in two mouse models with different susceptibility to β-cell failure. Endocrinology 143: 2085-2092.
2. Kooptiwut, S., et al. 2005. High glucose-induced impairment in Insulin secretion is associated with reduction in islet glucokinase in a mouse model of susceptibility to islet dysfunction. J. Mol. Endocrinol. 35: 39-48.
3. Arzoine, L., et al. 2009. Voltage-dependent anion channel 1-based peptides interact with hexokinase to prevent its anti-apoptotic activity. J. Biol. Chem. 284: 3946-3955.
4. Hantke, J., et al. 2009. A mutation in an alternative untranslated exon of hexokinase 1 associated with hereditary motor and sensory neuropathy—Russe (HMSNR). Eur. J. Hum. Genet. 17: 1606-1614.
5. Lü, L., et al. 2009. The difference in gliosis induced by β-amyloid and Tau treatments in astrocyte cultures derived from senescence accelerated and normal mouse strains. Biogerontology 10: 695-710.
6. Heaton, M.B., et al. 2013. Ethanol influences on Bax associations with mitochondrial membrane proteins in neonatal rat cerebellum. Dev. Neurobiol. 73: 127-141.
7. Pomierny, B., et al. 2016. Ethylene glycol ethers induce apoptosis and disturb glucose metabolism in the rat brain. Pharmacol. Rep. 68: 162-171.

RESEARCH USE

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