SANTA CRUZ BIOTECHNOLOGY, INC.

HXK II (C-14): sc-6521

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: HK2 (human) mapping to 2p12; Hk2 (mouse) mapping to 6 C3.

SOURCE

HXK II (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of HXK II 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-6521 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HXK II (C-14) is recommended for detection of HXK II 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 II (C-14) is also recommended for detection of HXK II in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for HXK II siRNA (h): sc-35621, HXK II siRNA (m): sc-35622, HXK II shRNA Plasmid (h): sc-35621-SH, HXK II shRNA Plasmid (m): sc-35622-SH, HXK II shRNA (h) Lentiviral Particles: sc-35621-V and HXK II shRNA (m) Lentiviral Particles: sc-35622-V.

Molecular Weight of HXK II: 100 kDa.

Positive Controls: A-10 cell lysate: sc-3806, HeLa whole cell lysate: sc-2200 or Sol8 cell lysate: sc-2249.

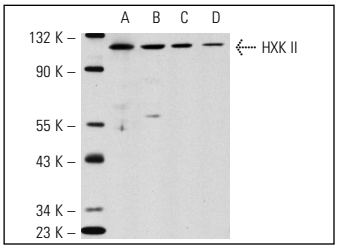
RESEARCH USE

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

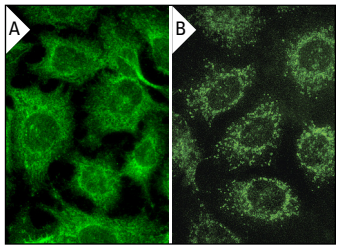
STORAGE

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

DATA



HXK II (C-14): sc-6521. Western blot analysis of HXK II expression in HeLa (**A**), Sol8 (**B**), A-10 (**C**) and 3T3-L1 (**D**) whole cell lysates.



HXK II (C-14): sc-6521. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (**A**). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Taylor, E.B., et al. 2005. Endurance training increases skeletal muscle LKB1 and PGC-1α protein abundance: effects of time and intensity. Am. J. Physiol. Endocrinol. Metab. 289: E960-E968.
2. Parra-Bonilla, G., et al. 2010. Critical role for lactate dehydrogenase A in aerobic glycolysis that sustains pulmonary microvascular endothelial cell proliferation. Am. J. Physiol. Lung Cell. Mol. Physiol. 299: L513-L522.
3. Corona J.C., et al. 2010. Hexokinase II gene transfer protects against neurodegeneration in the rotenone and MPTP mouse models of Parkinson's disease. J. Neurosci. Res. 88: 1943-1950.
4. Wang, X., et al. 2011. ER stress modulates cellular metabolism. Biochem. J. 435: 285-296.
5. Serganova, I., et al. 2011. Metabolic imaging: a link between lactate dehydrogenase A, lactate, and tumor phenotype. Clin. Cancer Res. 17: 6250-6261.
6. Echigoya, Y., et al. 2011. Molecular characterization of glycogen synthase 1 and its tissue expression profile with type II hexokinase and muscle-type phosphofructokinase in horses. Mol. Biol. Rep. 38: 461-469.
7. Dieni, C.A., et al. 2011. Regulation of hexokinase by reversible phosphorylation in skeletal muscle of a freeze-tolerant frog. Comp. Biochem. Physiol. B, Biochem. Mol. Biol. 159: 236-243.
8. Toyoda, T., et al. 2011. Myo1c regulates glucose uptake in mouse skeletal muscle. J. Biol. Chem. 286: 4133-4140.