

# HXK I (M-15): sc-6519

## 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 have an approximate molecular weight of 100 kDa and contain an N-terminal cluster of hydrophobic amino acids. Glucokinase is approximately 50 kDa and 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 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

HXK I (M-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of HXK I of mouse 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-6519 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

HXK I (M-15) is recommended for detection of HXK I of mouse and rat 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).

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

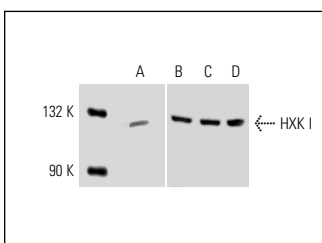
Molecular Weight of HXK I: 120 kDa.

Positive Controls: rat brain extract: sc-2392.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Western blot analysis of HXK I expression in rat brain tissue extract (A), HeLa (B), Hep G2 (C) and SK-N-MC (D) whole cell lysates. Antibodies tested include: HXK I (M-15): sc-6519 (A) and HXK I (N-19): sc-6517 (B-D).

## RESEARCH USE

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

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Try **HXK I (G-1): sc-46695** or **HXK I (A-7): sc-271865**, our highly recommended monoclonal alternatives to HXK I (M-15).