

HXK III (A-9): sc-74488

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.

REFERENCES

- 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.
- Arora, K.K., et al. 1990. Glucose phosphorylation in tumor cells. Cloning, sequencing and overexpression in active form of a full length cDNA encoding a mitochondrial bindable form of hexokinase. *J. Biol. Chem.* 265: 6481-6488.
- 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.
- 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: HK3 (human) mapping to 5q35.2.

SOURCE

HXK III (A-9) is a mouse monoclonal antibody raised against amino acids 1-130 mapping at the N-terminus of HXK III of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HXK III (A-9) is available conjugated to agarose (sc-74488 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74488 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74488 PE), fluorescein (sc-74488 FITC), Alexa Fluor[®] 488 (sc-74488 AF488), Alexa Fluor[®] 546 (sc-74488 AF546), Alexa Fluor[®] 594 (sc-74488 AF594) or Alexa Fluor[®] 647 (sc-74488 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-74488 AF680) or Alexa Fluor[®] 790 (sc-74488 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HXK III (A-9) is recommended for detection of HXK III of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 III siRNA (h): sc-39046, HXK III shRNA Plasmid (h): sc-39046-SH and HXK III shRNA (h) Lentiviral Particles: sc-39046-V.

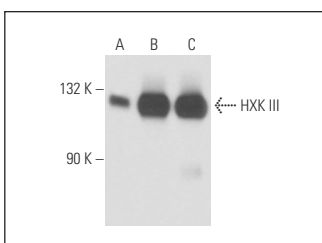
Molecular Weight of HXK III: 100 kDa.

Positive Controls: HXK III (h2): 293T Lysate: sc-159695, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

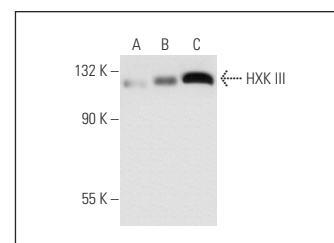
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



HXK III (A-9): sc-74488. Western blot analysis of HXK III expression in HeLa (A), Hep G2 (B) and MIA PaCa-2 (C) whole cell lysates.



HXK III (A-9): sc-74488. Western blot analysis of HXK III expression in non-transfected 293T: sc-117752 (A), human HXK III transfected 293T: sc-159695 (B) and HeLa (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Kim, J.S., et al. 2021. Multi-functional MPT protein as a therapeutic agent against *Mycobacterium tuberculosis*. *Biomedicines* 9: 545.

STORAGE

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

RESEARCH USE

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

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