

Ketohexokinase (B-6): sc-377411

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. Ketohexokinase (hepatic fructokinase) belongs to the carbohydrate kinase pfkB family and requires potassium. It functions in the metabolism of dietary fructose in mammals, catalyzing the conversion of fructose to fructose-1-phosphate. Ketohexokinase is expressed most abundantly in kidney, liver, pancreas and spleen, while lower levels are seen in muscle, eye and brain. Mutations in KHK, the gene encoding for Ketohexokinase, cause fructosemia, a benign defect of intermediary metabolism characterized by the excretion of fructose in the urine.

CHROMOSOMAL LOCATION

Genetic locus: KHK (human) mapping to 2p23.3; Khk (mouse) mapping to 5 B1.

SOURCE

Ketohexokinase (B-6) is a mouse monoclonal antibody raised against amino acids 257-298 mapping at the C-terminus of Ketohexokinase of human origin.

PRODUCT

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

Ketohexokinase (B-6) is available conjugated to agarose (sc-377411 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377411 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377411 PE), fluorescein (sc-377411 FITC), Alexa Fluor[®] 488 (sc-377411 AF488), Alexa Fluor[®] 546 (sc-377411 AF546), Alexa Fluor[®] 594 (sc-377411 AF594) or Alexa Fluor[®] 647 (sc-377411 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377411 AF680) or Alexa Fluor[®] 790 (sc-377411 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ketohexokinase (B-6) is recommended for detection of Ketohexokinase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for Ketohexokinase siRNA (h): sc-60878, Ketohexokinase siRNA (m): sc-60879, Ketohexokinase shRNA Plasmid (h): sc-60878-SH, Ketohexokinase shRNA Plasmid (m): sc-60879-SH, Ketohexokinase shRNA (h) Lentiviral Particles: sc-60878-V and Ketohexokinase shRNA (m) Lentiviral Particles: sc-60879-V.

Molecular Weight of Ketohexokinase: 33 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RAW 264.7 whole cell lysate: sc-2211 or KNRK whole cell lysate: sc-2214.

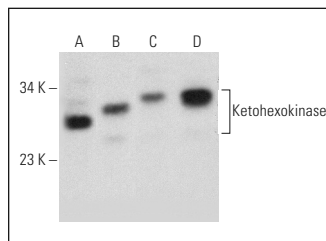
RESEARCH USE

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

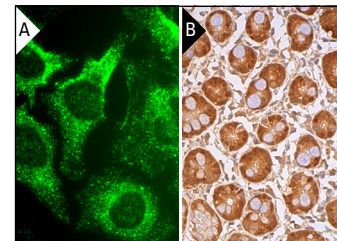
STORAGE

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

DATA



Ketohexokinase (B-6): sc-377411. Western blot analysis of Ketohexokinase expression in HeLa (A), RAW 264.7 (B), KNRK (C) and PC-12 (D) whole cell lysates.



Ketohexokinase (B-6): sc-377411. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Li, X., et al. 2016. A splicing switch from Ketohexokinase-C to Ketohexokinase-A drives hepatocellular carcinoma formation. *Nat. Cell Biol.* 18: 561-571.
- Xu, D., et al. 2019. The protein kinase activity of fructokinase A specifies the antioxidant responses of tumor cells by phosphorylating p62. *Sci. Adv.* 5: eaav4570.
- Nikolaou, K.C., et al. 2019. The RNA-binding protein A1CF regulates hepatic fructose and glycerol metabolism via alternative RNA splicing. *Cell Rep.* 29: 283-300.e8.
- Kim, J., et al. 2020. Ketohexokinase-A acts as a nuclear protein kinase that mediates fructose-induced metastasis in breast cancer. *Nat. Commun.* 11: 5436.
- Amorim, R., et al. 2021. Exploratory data analysis of cell and mitochondrial high-fat, high-sugar toxicity on human Hep G2 cells. *Nutrients* 13: 1723.
- Lee, H., et al. 2022. Crosstalk between TM4SF5 and GLUT8 regulates fructose metabolism in hepatic steatosis. *Mol. Metab.* 58: 101451.
- Alshuniaber, M.A., et al. 2022. Camel milk protein hydrosylate alleviates hepatic steatosis and hypertension in high fructose-fed rats. *Pharm. Biol.* 60: 1137-1147.
- Xu, H.L., et al. 2023. Rare sugar L-sorbose exerts antitumor activity by impairing glucose metabolism. *Commun. Biol.* 6: 259.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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