SANTA CRUZ BIOTECHNOLOGY, INC.

# HXK II (B-8): sc-374091

## 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.

## SOURCE

HXK II (B-8) is a mouse monoclonal antibody raised against amino acids 316-410 mapping within an internal region of HXK II of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HXK II (B-8) is available conjugated to agarose (sc-374091 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374091 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374091 PE), fluorescein (sc-374091 FITC), Alexa Fluor® 488 (sc-374091 AF488), Alexa Fluor® 546 (sc-374091 AF546), Alexa Fluor® 594 (sc-374091 AF594) or Alexa Fluor® 647 (sc-374091 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374091 AF680) or Alexa Fluor® 790 (sc-374091 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

HXK II (B-8) is recommended for detection of HXK II of 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 HXK II siRNA (h): sc-35621, HXK II shRNA Plasmid (h): sc-35621-SH and HXK II shRNA (h) Lentiviral Particles: sc-35621-V.

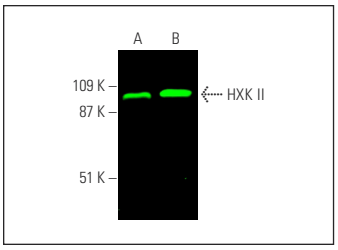
Molecular Weight of HXK II: 100 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HEK293T whole cell lysate: sc-45137 or A-431 whole cell lysate: sc-2201.

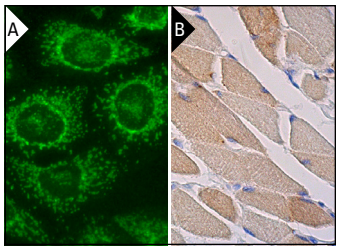
## STORAGE

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

## DATA




HXK II (B-8): sc-374091. Near-infrared western blot analysis of HXK II expression in HEK293T (**A**) and HeLa (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.




HXK II (B-8): sc-374091. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (**B**).

## SELECT PRODUCT CITATIONS


1. Amara, S., et al. 2016. Oleanolic acid inhibits high salt-induced exaggeration of Warburg-like metabolism in breast cancer cells. Cell Biochem. Biophys. 74: 427-434.
2. Lin, S., et al. 2017. Lactate-activated macrophages induced aerobic glycolysis and epithelial-mesenchymal transition in breast cancer by regulation of CCL5-CCR5 axis: a positive metabolic feedback loop. Oncotarget 8: 110426-110443.
3. Feng, Y., et al. 2018. The epigenetically downregulated factor CYGB suppresses breast cancer through inhibition of glucose metabolism. J. Exp. Clin. Cancer Res. 37: 313.
4. Liu, X., et al. 2019. Elevated hexokinase II expression confers acquired resistance to 4-hydroxytamoxifen in breast cancer cells. Mol. Cell. Proteomics 18: 2273-2284.
5. Vergara, D., et al. 2020. Carbonic anhydrase XII expression is modulated during epithelial mesenchymal transition and regulated through protein kinase C signaling. Int. J. Mol. Sci. 21: 715.
6. Noh, S., et al. 2020. p32/C1QBP regulates OMA1-dependent proteolytic processing of OPA1 to maintain mitochondrial connectivity related to mitochondrial dysfunction and apoptosis. Sci. Rep. 10: 10618.
7. Chung, C., et al. 2020. Integrated metabolic and epigenomic reprograming by H3K27M mutations in diffuse intrinsic pontine gliomas. Cancer Cell 38: 334-349.e9.
8. Le, X., et al. 2020. DNA methylation downregulated ZDHHC1 suppresses tumor growth by altering cellular metabolism and inducing oxidative/ER stress-mediated apoptosis and pyroptosis. Theranostics 10: 9495-9511.


## RESEARCH USE

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