

PKM (H-60): sc-135048

BACKGROUND

In mammals, four different isoenzymes exist for pyruvate kinase. Based on their tissue distribution, the isoenzymes are designated L-type (for predominant expression in the liver), R-type (for predominant expression in red blood cells), M1-type (for predominant expression in muscle, brain and heart) and M2-type (for predominant expression in fetal tissues). Pyruvate kinases are responsible for catalyzing the final step in glycolysis: the conversion of phosphoenolpyruvate to pyruvate with the coinciding generation of ATP. The PKM (pyruvate kinase, muscle) gene encodes the M1- and M2-type isoenzymes through alternative splicing events. Both M1- and M2-type isoforms exist as tetramers and are stimulated by fructose 1,6-bisphosphate. In addition, both isoforms exhibit thyroid hormone binding activity and may be referred to as CTHBP (cytosolic thyroid hormone-binding protein) or THBP1. The M2-type isoform also interacts with Oct-4 via its C-terminal domain, functioning to enhance Oct-4 transcriptional activity.

REFERENCES

1. Parkison, C., et al. 1991. The monomer of pyruvate kinase, subtype M1, is both a kinase and a cytosolic thyroid hormone binding protein. *Biochem. Biophys. Res. Commun.* 179: 668-674.
2. Ashizawa, K., et al. 1991. *In vivo* regulation of monomer-tetramer conversion of pyruvate kinase subtype M2 by glucose is mediated via fructose 1,6-bisphosphate. *J. Biol. Chem.* 266: 16842-16846.
3. Li, Y., et al. 2005. High glucose upregulates pantothenate kinase 4 (PANK4) and thus affects M2-type pyruvate kinase (PKM2). *Mol. Cell. Biochem.* 277: 117-125.
4. Sugiura, K., et al. 2005. Oocyte control of metabolic cooperativity between oocytes and companion granulosa cells: energy metabolism. *Dev. Biol.* 279: 20-30.
5. Dombrackas, J.D., et al. 2005. Structural basis for tumor pyruvate kinase M2 allosteric regulation and catalysis. *Biochemistry* 44: 9417-9429.
6. Kansy, J.W., et al. 2006. Identification of pyruvate kinase as an antigen associated with Tourette syndrome. *J. Neuroimmunol.* 181: 165-176.

CHROMOSOMAL LOCATION

Genetic locus: PKM (human) mapping to 15q23; Pkm2 (mouse) mapping to 9 B.

SOURCE

PKM (H-60) is a rabbit polyclonal antibody raised against amino acids 454-513 mapping near the C-terminus of PKM 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.

STORAGE

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

APPLICATIONS

PKM (H-60) is recommended for detection of PKM 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).

PKM (H-60) is also recommended for detection of PKM in additional species, including equine, canine, bovine and porcine.

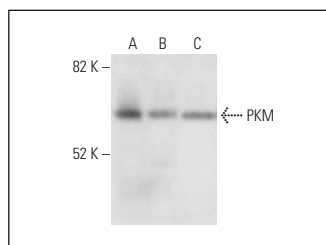
Suitable for use as control antibody for PKM siRNA (h): sc-62820, PKM siRNA (m): sc-62821, PKM shRNA Plasmid (h): sc-62820-SH, PKM shRNA Plasmid (m): sc-62821-SH, PKM shRNA (h) Lentiviral Particles: sc-62820-V and PKM shRNA (m) Lentiviral Particles: sc-62821-V.

Molecular Weight of PKM M1-type monomer: 58 kDa.

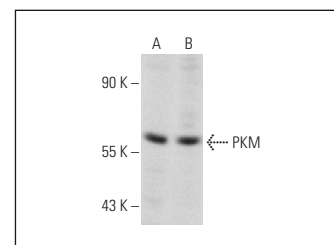
Molecular Weight of PKM M2-type monomer: 58 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, DU 145 cell lysate: sc-2268 or T98G cell lysate: sc-2294.

DATA



PKM (H-60): sc-135048. Western blot analysis of PKM expression in Caki-1 (A), DU 145 (B) and T98G (C) whole cell lysates.



PKM (H-60): sc-135048. Western blot analysis of PKM expression in U-251-MG (A) and Raji (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ralhan, R., et al. 2015. Immunohistochemical subcellular localization of protein biomarkers distinguishes benign from malignant thyroid nodules: potential for fine-needle aspiration biopsy clinical application. *Thyroid* 25: 1224-1234.

RESEARCH USE

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

PROTOCOLS

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



Try **PKM (C-11): sc-365684** or **PKM (YY-3): sc-100538**, our highly recommended monoclonal alternatives to PKM (H-60). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **PKM (C-11): sc-365684**.