SANTA CRUZ BIOTECHNOLOGY, INC.

PKM (C-11): sc-365684

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 exists 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.

CHROMOSOMAL LOCATION

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

SOURCE

PKM (C-11) is a mouse monoclonal antibody raised against amino acids 454-513 mapping near the C-terminus of PKM 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.

PKM (C-11) is available conjugated to agarose (sc-365684 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365684 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365684 PE), fluorescein (sc-365684 FITC), Alexa Fluor® 488 (sc-365684 AF488), Alexa Fluor® 546 (sc-365684 AF546), Alexa Fluor® 594 (sc-365684 AF594) or Alexa Fluor® 647 (sc-365684 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365684 AF680) or Alexa Fluor® 790 (sc-365684 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PKM (C-11) is recommended for detection of PKM 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 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.

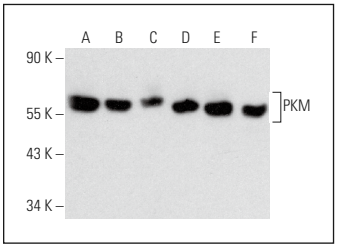
Molecular Weight of PKM M1/M2-type monomer: 58 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, NIH/3T3 whole cell lysate: sc-2210 or 3T3-L1 cell lysate: sc-2243.

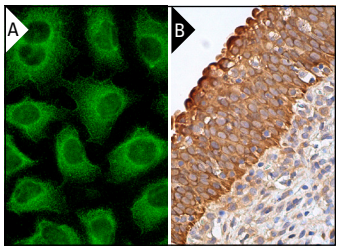
STORAGE

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

DATA



PKM (C-11): sc-365684. Western blot analysis of PKM expression in RAW 264.7 (**A**), NIH/3T3 (**B**), 3T3-L1 (**C**), L8 (**D**), NRK (**E**) and RPE-J (**F**) whole cell lysates.



PKM (C-11): sc-365684. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Resetar, A. and Spector, T. 1989. Glucuronidation of 3'-azido-3'-deoxythymidine: human and rat enzyme specificity. Biochem. Pharmacol. 38: 1389-1393.
2. Wong, N., et al. 2014. Changes in PKM2 associate with prostate cancer progression. Cancer Invest. 32: 330-338.
3. Guantes, R., et al. 2015. Global variability in gene expression and alternative splicing is modulated by mitochondrial content. Genome Res. 25: 633-644.
4. Park, S.H., et al. 2016. SIRT2-mediated deacetylation and tetramerization of pyruvate kinase directs glycolysis and tumor growth. Cancer Res. 76: 3802-3812.
5. Wei, Y., et al. 2017. Pyruvate kinase type M2 promotes tumour cell exosome release via phosphorylating synaptosome-associated protein 23. Nat. Commun. 8: 14041.
6. Schönrogge, M., et al. 2018. α-cyano-4-hydroxycinnamate impairs pancreatic cancer cells by stimulating the p38 signaling pathway. Cell. Signal. 47: 101-108.
7. Zhou, H.L., et al. 2019. Metabolic reprogramming by the S-nitroso-CoA reductase system protects against kidney injury. Nature 565: 96-100.
8. Sun, K., et al. 2019. Oxidized ATM-mediated glycolysis enhancement in breast cancer-associated fibroblasts contributes to tumor invasion through lactate as metabolic coupling. EBioMedicine 41: 370-383.

RESEARCH USE

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