

PKLR (E-2): sc-133222

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 PKLR (pyruvate kinase, liver and RBC) gene encodes the L- and R-type isoenzymes through alternative splicing events under the control of different promoters. The R-type isoform, also known as RPK (R-type pyruvate kinase) exists as a tetramer and when functioning improperly, can result in chronic/hereditary nonspherocytic hemolytic anemia (CNSHA/HNSHA) or pyruvate kinase hyperactivity (also called high red cell ATP syndrome). The L-type isoform, alternatively known as PKL (pyruvate kinase L-type), also exists as a tetramer and is upregulated by glucose with implications in maturity-onset diabetes of the young (MODY).

CHROMOSOMAL LOCATION

Genetic locus: PKLR (human) mapping to 1q22; Pklr (mouse) mapping to 3 F1.

SOURCE

PKLR (E-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-39 within an internal region of PKLR 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.

PKLR (E-2) is available conjugated to agarose (sc-133222 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133222 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133222 PE), fluorescein (sc-133222 FITC), Alexa Fluor® 488 (sc-133222 AF488), Alexa Fluor® 546 (sc-133222 AF546), Alexa Fluor® 594 (sc-133222 AF594) or Alexa Fluor® 647 (sc-133222 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133222 AF680) or Alexa Fluor® 790 (sc-133222 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-133222 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

PROTOCOLS

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

APPLICATIONS

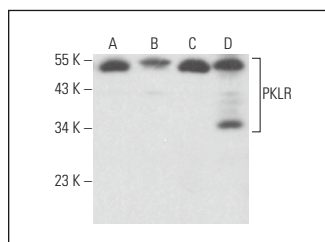
PKLR (E-2) is recommended for detection of PKLR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 PKLR siRNA (h): sc-62818, PKLR siRNA (m): sc-62819, PKLR shRNA Plasmid (h): sc-62818-SH, PKLR shRNA Plasmid (m): sc-62819-SH, PKLR shRNA (h) Lentiviral Particles: sc-62818-V and PKLR shRNA (m) Lentiviral Particles: sc-62819-V.

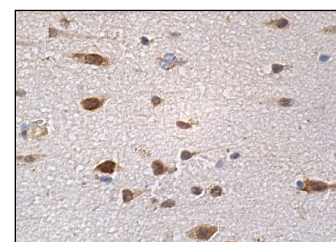
Molecular Weight of PKLR R/L-type monomer: 63/59 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, c4 whole cell lysate: sc-364186 or PC-12 cell lysate: sc-2250.

DATA



PKLR (E-2): sc-133222. Western blot analysis of PKLR expression in SK-N-SH (A), PC-12 (B), c4 (C) and NIH/3T3 (D) whole cell lysates.



PKLR (E-2): sc-133222. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of glial and neuronal cells.

SELECT PRODUCT CITATIONS

1. Nguyen, A., et al. 2016. PKLR promotes colorectal cancer liver colonization through induction of glutathione synthesis. *J. Clin. Invest.* 126: 681-694.
2. Hillis, A.L., et al. 2018. PKM2 is not required for pancreatic ductal adenocarcinoma. *Cancer Metab.* 6: 17.
3. Cangelosi, D., et al. 2019. A proteomic analysis of GSD-1a in mouse livers: evidence for metabolic reprogramming, inflammation, and macrophage polarization. *J. Proteome Res.* 18: 2965-2978.
4. Sun, Y., et al. 2020. Lmo4-resistin signaling contributes to adipose tissue-liver crosstalk upon weight cycling. *FASEB J.* 34: 4732-4748.
5. Yao, Y., et al. 2022. Improvements of autism-like behaviors but limited effects on immune cell metabolism after mitochondrial replacement in BTBR T+Itpr3^{fl}/J mice. *J. Neuroimmunol.* 368: 577893.
6. Soussi, S., et al. 2023. iPSC derived cardiac fibroblasts of DMD patients show compromised Actin microfilaments, metabolic shift and pro-fibrotic phenotype. *Biol. Direct* 18: 41.

RESEARCH USE

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