SANTA CRUZ BIOTECHNOLOGY, INC.

PKLR (D-10): sc-166228

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 PKLR (pyruvate kinase, liver and red blood cells) 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 (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 257-289 within an internal region of PKLR of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-166228 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PKLR (D-10) 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-type monomer: 63 kDa.

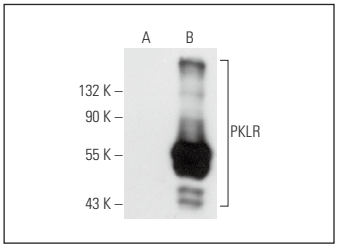
Molecular Weight of PKLR L-type monomer: 59 kDa.

Positive Controls: PKLR (h): 293T Lysate: sc-114132 or K-562 whole cell lysate: sc-2203.

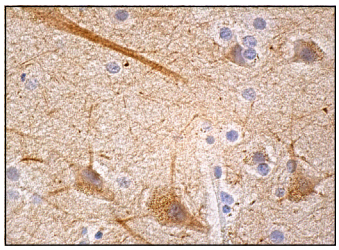
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PKLR (D-10): sc-166228. Western blot analysis of PKLR expression in non-transfected: sc-117752 (**A**) and human PKLR transfected: sc-114132 (**B**) 293T whole cell lysates.



PKLR (D-10): sc-166228. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal cells.

SELECT PRODUCT CITATIONS

1. Gassaway, B.M., et al. 2019. Distinct hepatic PKA and CDK signaling pathways control activity-independent pyruvate kinase phosphorylation and hepatic glucose production. Cell Rep. 29: 3394-3404.e9.
2. Cheraghi, O., et al. 2022. The effect of Nrf2 deletion on the proteomic signature in a human colorectal cancer cell line. BMC Cancer 22: 979.

STORAGE

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

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.