

PKM2 (D-15): sc-65177

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 PKM2 (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

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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.
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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.
7. Butterfield, D.A., et al. 2006. Redox proteomics identification of oxidatively modified hippocampal proteins in mild cognitive impairment: insights into the development of Alzheimer's disease. *Neurobiol. Dis.* 22: 223-232.
8. Lee, J., et al. 2007. Pyruvate kinase isozyme type M2 (PKM2) interacts and cooperates with Oct-4 in regulating transcription. *Int. J. Biochem. Cell Biol.* 40: 1043-1054.
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CHROMOSOMAL LOCATION

Genetic locus: PKM (human) mapping to 15q23.

SOURCE

PKM2 (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PKM2 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.

Blocking peptide available for competition studies, sc-65177 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PKM2 (D-15) is recommended for detection of PKM2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PKM2 (D-15) is also recommended for detection of PKM2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PKM2 siRNA (h): sc-62820, PKM2 shRNA Plasmid (h): sc-62820-SH and PKM2 shRNA (h) Lentiviral Particles: sc-62820-V.

Molecular Weight of PKM2 M1-type monomer: 58 kDa.

Molecular Weight of PKM2 M2-type monomer: 58 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.



Try **PKM2 (C-11): sc-365684** or **PKM2 (YY-3): sc-100538**, our highly recommended monoclonal alternatives to PKM2 (D-15). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PKM2 (C-11): sc-365684**.