PKM2 Antibody

Catalog No: #JM001

Package Size: #JM001-1 50ul #JM001-2 100ul

Orders: order@signalwayantibody.com
Support: tech@signalwayantibody.com

Description

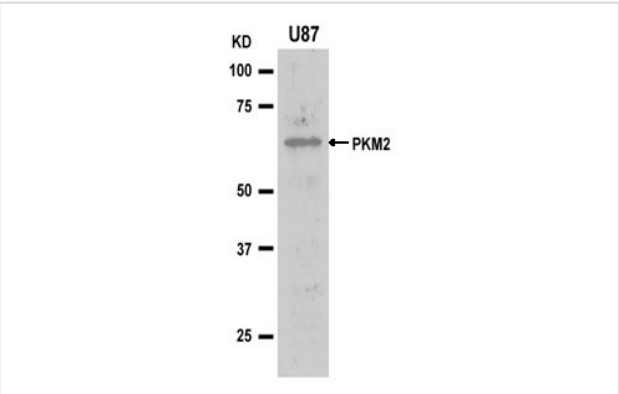
Product Name	PKM2 Antibody
Host Species	Mouse
Clonality	Monoclonal
Clone No.	XD2014M001S1
Isotype	IgG
Applications	WB IP
Species Reactivity	Hu
Specificity	The antibody detects endogenous levels of total PKM2 protein
Immunogen Type	Recombinant Protein
Immunogen Description	Recombinant human PKM2 protein
Target Name	PKM2
Other Names	PKM; PK3; OIP3; PK2;
Accession No.	Swiss-Prot: P14618-1 NCBI Protein: NP_872270.1
SDS-PAGE MW	60kd
Concentration	1.0mg/ml
Formulation	1.0 mg/mL in phosphate buffer without Mg2+/Ca2+, pH7.4, 150mM NaCl and 50% glycerol
Storage	Store at -20°C

Application Details

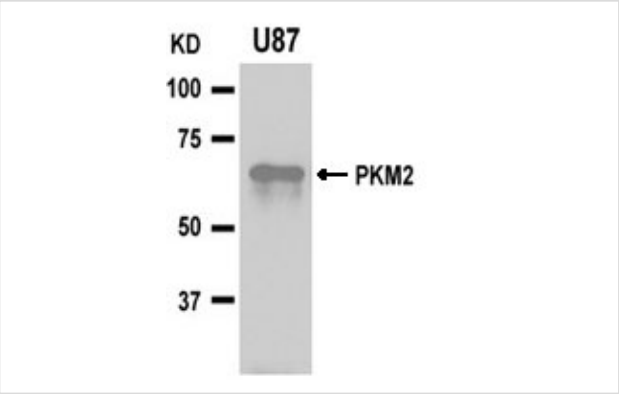
Western Blotting: 1:500

IP: 1 ul/500ug cell lysate

Images



Western blot analysis of extracts from U87 cells using PKM2 Antibody #JM001.



Immunoprecipitation analysis of U87 cell lysates using PKM2 antibody. IP:PKM2 Monoclonal Antibody #JM001. WB:PKM2 Polyclonal Antibody #21578.

Background

Pyruvate kinase (PK) regulates the final rate-limiting step of glycolysis in the production of pyruvate and adenosine triphosphate (ATP). Alternate splicing of PKM pre-mRNA leads to PKM2 generation by the inclusion of exon 10 and the exclusion of exon 9, which is specific for PKM1. Besides its cytosolic roles in glycolysis, PKM2, which is upregulated by growth factor receptor activation 1, is phosphorylated at S37 by extracellular signal-regulated kinase (ERK) 2. This phosphorylation leads to the cis-trans isomerization of PKM2 by the peptidyl-prolineisomerase protein interacting with never in mitosis A 1 (PIN1), exposure of the nuclear localization signal (NLS) of PKM2, and subsequent binding of importin α 5 for nuclear translocation 2. In the nucleus, PKM2binds to phosphorylated Y333 of β-catenin, which is essential for β-catenin transactivation 3, and interacts with and phosphorylates histone H3 at T11, leading to H3-K9 acetylation and transcription of genes such as MYC and CCND14. c-Myc expression results in the upregulation of GLUT1, lactate dehydrogenase A (LDHA), and, in a positive feedback loop, PTB-dependent PKM2, which subsequently enhances the Warburg effect 2. Cyclin D1 expression, in turn, promotes G1-S phase transition 3, 4.

1 Yang W, Xia Y, Cao Y et al. EGFR-induced and PKCepsilonmonoubiquitylation-dependent NF-kappaB activation upregulates PKM2 expression and promotes tumorigenesis. Molecular cell 2012; 48:771-784.

2 Yang W, Zheng Y, Xia Y et al. ERK1/2-dependent phosphorylation and nuclear translocation of PKM2 promotes the Warburg effect. Nature cell biology 2012; 14:1295-1304.

3 Yang W, Xia Y, Ji H et al. Nuclear PKM2 regulates beta-catenin transactivation upon EGFR activation. Nature 2011; 480:118-122.

4 Yang W, Xia Y, Hawke D et al. PKM2 phosphorylates histone H3 and promotes gene transcription and tumorigenesis. Cell 2012; 150:685-696.

Note: This product is for in vitro research use only and is not intended for use in humans or animals.