



PKM Monoclonal Antibody

Product Code	CSB-MA572824
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Immunogen	Recombinant Human PKM2 protein
Raised In	Mouse
Species Reactivity	Human
Specificity	The antibody detects endogenous levels of total PKM2 protein
Tested Applications	ELISA,WB,IP;Recommended dilution:WB:1:500-1:5000,IP:1:200-1:2000

Relevance

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-proline isomerase 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, PKM2 binds 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 PKCepsilon monoubiquitylation-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.

Form	1.0 mg/mL in phosphate buffer without Mg ²⁺ /Ca ²⁺ , pH7.4, 150mM NaCl and 50% glycerol
Isotype	IgG



Clonality	Monoclonal
Alias	PKM; PK3; OIP3; PK2;
Product Type	Monoclonal Antibody