

#3198 Store at -20°C

PKM2 Antibody

100 µl
 (10 western blots)



Orders ■ 877-616-CELL (2355)
 orders@cellsignal.com
Support ■ 877-678-TECH (8324)
 info@cellsignal.com
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rev. 08/11/10

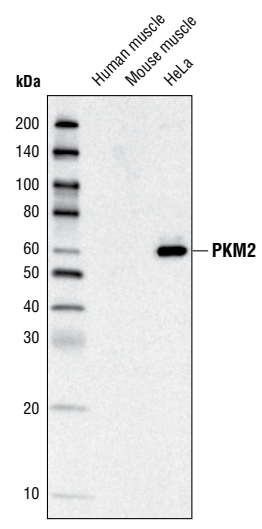
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IHC-P, IHC-F Endogenous	H, M, R, Mk	60 kDa	Rabbit**

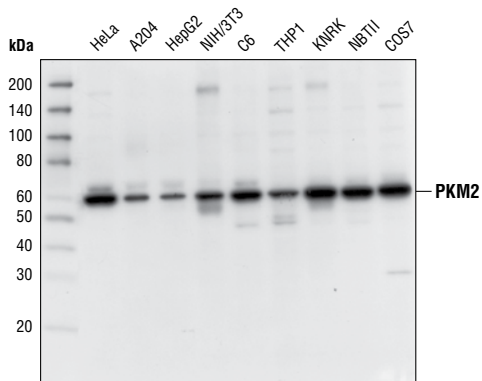
Background: Pyruvate kinase, a glycolytic enzyme, catalyzes the conversion of phosphoenolpyruvate to pyruvate. In mammals, the M1 isoform (PKM1) is expressed in most adult tissues (1). The M2 isoform (PKM2), an alternatively-spliced variant of M1, is expressed during embryonic development (1). Studies found that cancer cells exclusively express PKM2 (1-3). PKM2 is shown to be essential for aerobic glycolysis in tumors (Warburg effect) (1). When the M2 isoform is switched to the M1 isoform, aerobic glycolysis is reduced and oxidative phosphorylation is increased in cancer cells (1). These cells also show decreased tumorigenicity in mouse xenografts (1). Recent studies show that the oncogenic forms of FGFR1 directly phosphorylate Tyr105 of PKM2 and thereby inhibit the formation of active tetrameric PKM2 (4). A PKM2 mutant found in cancer cells, in which Tyr105 is replaced by phenylalanine, leads to reduced cell proliferation in hypoxia and tumor growth in xenografts in nude mice (4). These findings suggest that the phosphorylation at Tyr105 is a critical switch for the metabolism in cancer cells that promotes tumor growth (4).

Specificity/Sensitivity: PKM2 Antibody detects endogenous levels of total PKM2 protein.

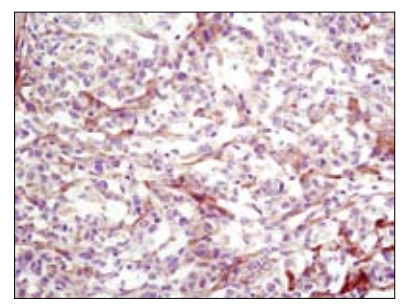
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the sequence of human PKM2. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various tissue and cell lysates using PKM2 Antibody.



Western blot analysis of extracts from various cell lines using PKM2 Antibody.



Immunohistochemical analysis of frozen U-87MG xenograft using PKM2 Antibody.

Entrez-Gene ID #5315
Swiss-Prot Acc. #P14618

Storage: Supplied in 10mM HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunohistochemistry (Paraffin)	1:100
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Immunohistochemistry (Frozen)	1:100
Fixative:	3% Formaldehyde

For application specific protocols please see the web page for this product at www.cellsignal.com.

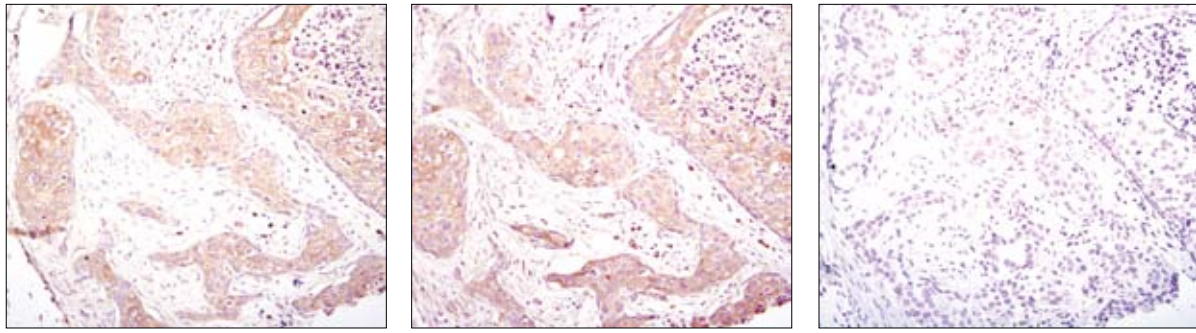
Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

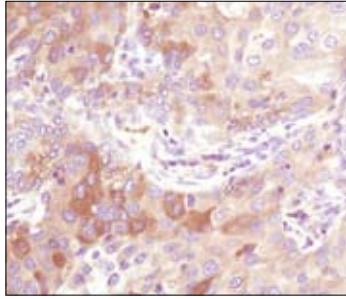
- (1) Christofk, H.R. et al. (2008) *Nature* 452, 230-3.
- (2) Mazurek, S. et al. (2005) *Semin Cancer Biol* 15, 300-8.
- (3) Dombrackas, J.D. et al. (2005) *Biochemistry* 44, 9417-29.
- (4) Hitosugi, T. et al. (2009) *Sci Signal* 2, ra73.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma using PKM2 Antibody in the presence of control peptide (left), PKM1-specific peptide (middle) or PKM2-specific peptide (right).



Immunohistochemical analysis of paraffin-embedded human lung carcinoma using PKM2 Antibody.