Anti-PKM2 Antibody

ER1802-70

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	WB, IF-Cell, IHC-P
Molecular Wt:	Predicted band size: 58 kDa

Description: In mammals, four different isoenzymes exist for pyruvate kinase. Pyruvate kinases are responsible for catalyzing the final step in glycolysis: the conversion of phosphoenolpyruvate to pyruvate with the coinciding generation of ATP. The PKM (pyruvate kinase, muscle) gene encodes the M1- and M2-type isoenzymes through alternative splicing events. Both M1- and M2-type isoforms exists 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. Translocates to the nucleus in response to different apoptotic stimuli. Nuclear translocation is sufficient to induce cell death that is caspase independent, isoform-specific and independent of its enzymatic activity.

Immunogen: Synthetic peptide within human PKM2 aa 370-450.

Positive control: Wild-type MDA-MB-231 whole cell lysate, SiHa cell lysate, A549 cell lysate, PC-3 cell lysate, A549, F9, PC-3M, human tonsil tissue, human thyroid carcinoma tissue, human colon cancer tissue, human breast cancer tissue.

Subcellular location: Cytoplasm. Nucleus.

Database links: SwissProt: P14618 Human

Recommended Dilutions:

WB	1:500-1:1,000
IF-Cell	1:100-1:500
IHC-P	1:50-1:400

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Immunogen affinity purified.

Images

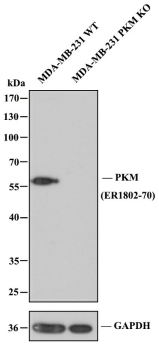

Fig1: All lanes: Western blot analysis of PKM with anti-PKM antibody (ER1802-70) at 1:500 dilution.

Lane 1: Wild-type MDA-MB-231 whole cell lysate.
Lane 2: PKM knockout MDA-MB-231 whole cell lysate.

ER1802-70 was shown to specifically react with PKM in wild-type MDA-MB-231 cells. No band was observed when PKM knockout samples were tested. Wild-type and PKM knockout samples were subjected to SDS-PAGE. Proteins were transferred to a PVDF membrane and blocked with 5% NFDM in TBST for 1 hour at room temperature. The primary Anti-PKM antibody (ER1802-70, 1/500) and Anti-GAPDH antibody (ET1601-4, 1/10000) were used in 5% BSA at room temperature for 2 hours. Goat Anti-Rabbit IgG H&L (HRP) Secondary Antibody (HA1001) at 1:200,000 dilution was used for 1 hour at room temperature.

Cell lysate was provided by Ubigene Biosciences (Ubigene Biosciences Co., Ltd., Guangzhou, China).

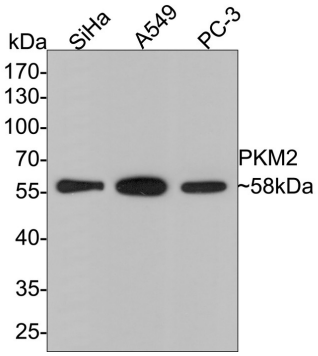

Fig2: Western blot analysis of PKM2 on different lysates with Rabbit anti-PKM2 antibody (ER1802-70) at 1/500 dilution.

Lane 1: SiHa cell lysate
Lane 2: A549 cell lysate
Lane 3: PC-3 cell lysate

Lysates/proteins at 10 µg/Lane.

Predicted band size: 58 kDa
Observed band size: 58 kDa

Exposure time: 2 minutes;

10% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ER1802-70) at 1/500 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:300,000 dilution was used for 1 hour at room temperature.

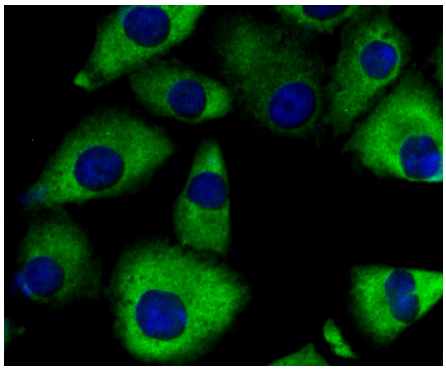

Fig3: ICC staining PKM2 in A549 cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

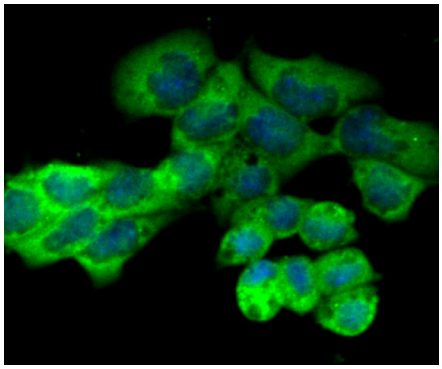

Fig4: ICC staining PKM2 in F9 cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

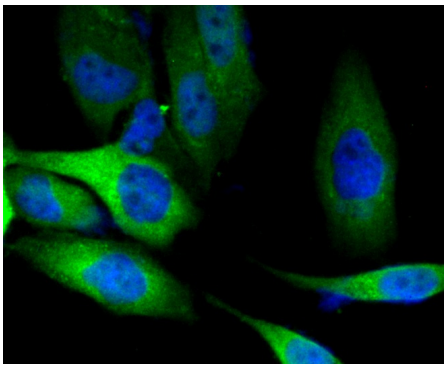

Fig5: ICC staining PKM2 in PC-3M cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

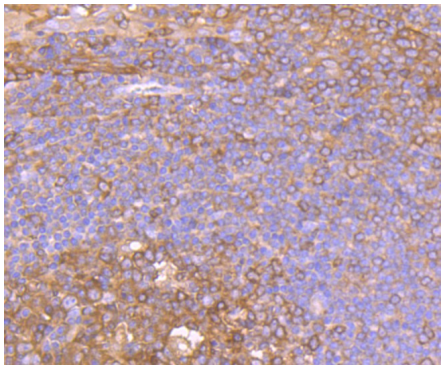

Fig6: Immunohistochemical analysis of paraffin-embedded human tonsil tissue using anti-PKM2 antibody. Counter stained with hematoxylin.

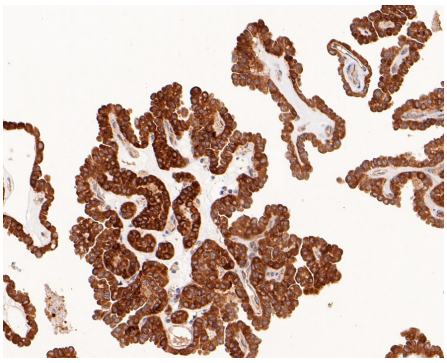

Fig7: Immunohistochemical analysis of paraffin-embedded human thyroid carcinoma tissue with Rabbit anti-PKM2 antibody (ER1802-70) at 1/400 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ER1802-70) at 1/400 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

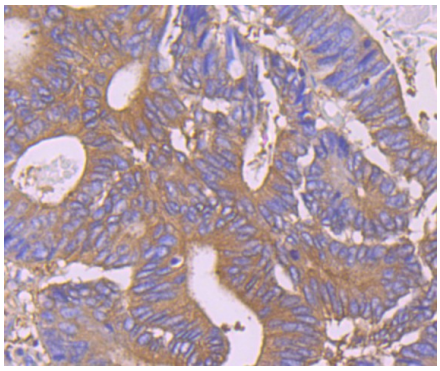

Fig8: Immunohistochemical analysis of paraffin-embedded human colon cancer tissue using anti-PKM2 antibody. Counter stained with hematoxylin.

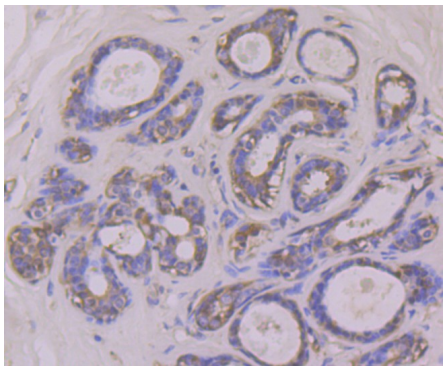

Fig9: Immunohistochemical analysis of paraffin-embedded human breast cancer tissue using anti-PKM2 antibody. Counter stained with hematoxylin.

Background References

1. Damasceno LEA et al. PKM2 promotes Th17 cell differentiation and autoimmune inflammation by fine-tuning STAT3 activation. J Exp Med. 2020 Oct
2. Zhu S et al. Pyruvate kinase M2 (PKM2) in cancer and cancer therapeutics. Cancer Lett. 2021 Apr