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Mouse Anti-PKM2/PE Conjugated antibody

SL0102M-PE

Product Name	Anti-PKM2/PE
Chinese Name	PE 标记的小鼠抗丙酮酸激酶-M2 抗体
Alias	PK 1; PK 2; PK 3; PK Muscle type; PK1; PK2; Pk3; PKL; PKLR; PKM 2; PKM; PKM2; PYKM; Pyruvate kinase 1; Pyruvate kinase 2/3; Pyruvate kinase 3; Pyruvate kinase isozyme R/L; Pyruvate kinase isozymes M1/M2; Pyruvate kinase liver and blood cell; Pyruvate kinase liver and RBC; Pyruvate kinase liver and RBC type; Pyruvate kinase M2; Pyruvate kinase muscle; Pyruvate kinase muscle isozyme; Pyruvate kinase type L; R type/L type pyruvate kinase; Red cell/liver pyruvate kinase; RPK; TCB; THBP 1; THBP1; Thyroid hormone binding protein cytosolic; CTHBP; Cytosolic thyroid hormone binding protein; MGC3932; OIP 3; Oip3; Tumor M2-PK; p58; OIP-3; KPYM_HUMAN.
Research Area	Tumour immunology Signal transduction Cyclin Kinases and Phosphatases TumourCell biologyMaker The new supersedes the old
Immunogen Species	Mouse
Clonality	Polyclonal
React Species	Human,Mouse,Rat(predicted:Pig,Cow,Horse,Rabbit)
Applications	IF=1:100-500,ICC/IF=1:100-500 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight	58kDa
Form	Lyophilized or Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthetic peptide derived from human PKM2
Lsotype	IgG
Purification	affinity purified by Protein A
Storage Buffer	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks

at 2-4 °C.

background:
The protein encoded by this gene is a pyruvate kinase that catalyzes the production of phosphoenolpyruvate from pyruvate and ATP. This protein has been shown to interact with thyroid hormone, and thus may mediate cellular metabolic effects induced by thyroid hormones. This protein has been found to bind Opa protein, a bacterial outer membrane protein involved in gonococcal adherence to and invasion of human cells, suggesting a role of this protein in bacterial pathogenesis. Three alternatively spliced transcript variants encoding two distinct isoforms have been reported.

Function:
Glycolytic enzyme that catalyzes the transfer of a phosphoryl group from phosphoenolpyruvate (PEP) to ADP, generating ATP. Stimulates POU5F1-mediated transcriptional activation. Plays a general role in caspase independent cell death of tumor cells. The ratio betwween the highly active tetrameric form and nearly inactive dimeric form determines whether glucose carbons are channeled to biosynthetic processes or used for glycolytic ATP production. The transition between the 2 forms contributes to the control of glycolysis and is important for tumor cell proliferation and survival.

Product Detail

Subunit:
Monomer and homotetramer. Exists as a monomer in the absence of FBP, and reversibly associates to form a homotetramer in the presence of FBP. The monomeric form binds T3. Tetramer formation induces pyruvate kinase activity. The tetrameric form has high affinity for the substrate and is associated within the glycolytic enzyme complex. Exists in a nearly inactive dimeric form in tumor cells and the dimeric form has less affinity for the substrate. Binding to certain oncoproteins such as HPV-16 E7 oncoprotein can trigger dimerization. FBP stimulates the formation of tetramers from dimers. Interacts with HERC1, POU5F1 and PML. Interacts (isoform M2) with EGLN3; the interaction hydroxylates PKM under hypoxia and enhances binding to HIF1A. Interacts (isoform M2) with HIF1A; the interaction is enhanced by binding of EGLN3, promoting enhanced transcription activity under hypoxia.

Subcellular Location:
Cytoplasm. Nucleus. Note=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.

Tissue Specificity:
Specifically expressed in proliferating cells, such as embryonic stem cells,

embryonic carcinoma cells, as well as cancer cells.

Post-translational modifications:
ISGylated.
Under hypoxia, hydroxylated by EGLN3.
Acetylation at Lys-305 is stimulated by high glucose concentration, it decreases enzyme activity and promotes its lysosomal-dependent degradation via chaperone-mediated autophagy.

Similarity:
Belongs to the pyruvate kinase family.

Database links:

Entrez Gene: 5315 Human

Entrez Gene: 18746 Mouse

Entrez Gene: 25630 Rat

Omim: 179050 Human

SwissProt: P14618 Human

SwissProt: P52480 Mouse

SwissProt: P11980 Rat

Unigene: 534770 Human

Unigene: 326167 Mouse

Unigene: 405069 Mouse

Unigene: 1556 Rat

Important Note:
This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

丙酮酸激酶（PK）有 L、R、M1、M2 四种同功酶，均为四聚体。 L 型主要分布于肝脏，R 型存在于红细胞，在结构、immunology 和动力学上十分相似，由同一基因调控；M1 存在于肌肉中，M2 分布于除上述以外

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的其他组织（尤以肾脏最多）以及胎儿各组织。PK 也是一种癌胚蛋白，在恶性 Tumour 中，增高的都是 M2 型。