



Rabbit Anti-phospho-PYK2 (Tyr881) antibody

SL3401R

Product Name:	phospho-PYK2 (Tyr881)
Chinese Name:	磷酸化富含脯氨酸的酪氨酸激酶2抗体
Alias:	PYK2 (phospho Tyr881); PYK2 (phospho Y881); p-PYK2 (Tyr881); p-PYK2 (Y881); CADTK; CAK beta; CAKB antibody; CAKbeta; Calcium dependent tyrosine kinase; Calcium-dependent tyrosine kinase; Cell adhesion kinase beta; E430023O05Rik; EC 2.7.10.2; FADK 2; FADK2; FAK 2; FAK1; FAK2; Focal Adhesion Kinase 2; MGC124628; PKB; pp125FAK; Proline Rich Tyrosine Kinase 2; Proline-rich tyrosine kinase 2; Protein kinase B; Protein Tyrosine Kinase 2 Beta; PTK 2B; PTK antibody PTK2B; PTK2B protein tyrosine kinase 2 beta; PYK 2; PYK2; RAFTK; Related adhesion focal tyrosine kinase; FAK2_HUMAN; PTK2B protein tyrosine kinase 2 beta.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human, Mouse, Rat,
Applications:	WB=1:500-2000ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800IF=1:100-500 (Paraffin sections need antigen repair) not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	116kDa
Cellular localization:	The nucleuscytoplasmicThe cell membrane
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthesised phosphopeptide derived from human Pyk2 around the phosphorylation site of Tyr881:LV(p-Y)LN
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% 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 0.01M PBS or diluent of

	antibody the antibody is stable for at least two weeks at 2-4 °C.
PubMed:	PubMed
Product Detail:	<p>This gene encodes a cytoplasmic protein tyrosine kinase which is involved in calcium-induced regulation of ion channels and activation of the map kinase signaling pathway. The encoded protein may represent an important signaling intermediate between neuropeptide-activated receptors or neurotransmitters that increase calcium flux and the downstream signals that regulate neuronal activity. The encoded protein undergoes rapid tyrosine phosphorylation and activation in response to increases in the intracellular calcium concentration, nicotinic acetylcholine receptor activation, membrane depolarization, or protein kinase C activation. This protein has been shown to bind CRK-associated substrate, nephrocystin, GTPase regulator associated with FAK, and the SH2 domain of GRB2. The encoded protein is a member of the FAK subfamily of protein tyrosine kinases but lacks significant sequence similarity to kinases from other subfamilies. Four transcript variants encoding two different isoforms have been found for this gene. [provided by RefSeq, Jul 2008]</p> <p>Function: Non-receptor protein-tyrosine kinase that regulates reorganization of the actin cytoskeleton, cell polarization, cell migration, adhesion, spreading and bone remodeling. Plays a role in the regulation of the humoral immune response, and is required for normal levels of marginal B-cells in the spleen and normal migration of splenic B-cells. Required for normal macrophage polarization and migration towards sites of inflammation. Regulates cytoskeleton rearrangement and cell spreading in T-cells, and contributes to the regulation of T-cell responses. Promotes osteoclastic bone resorption; this requires both PTK2B/PYK2 and SRC. May inhibit differentiation and activity of osteoprogenitor cells. Functions in signaling downstream of integrin and collagen receptors, immune receptors, G-protein coupled receptors (GPCR), cytokine, chemokine and growth factor receptors, and mediates responses to cellular stress. Forms multisubunit signaling complexes with SRC and SRC family members upon activation; this leads to the phosphorylation of additional tyrosine residues, creating binding sites for scaffold proteins, effectors and substrates. Regulates numerous signaling pathways. Promotes activation of phosphatidylinositol 3-kinase and of the AKT1 signaling cascade. Promotes activation of NOS3. Regulates production of the cellular messenger cGMP. Promotes activation of the MAP kinase signaling cascade, including activation of MAPK1/ERK2, MAPK3/ERK1 and MAPK8/JNK1. Promotes activation of Rho family GTPases, such as RHOA and RAC1. Recruits the ubiquitin ligase MDM2 to P53/TP53 in the nucleus, and thereby regulates P53/TP53 activity, P53/TP53 ubiquitination and proteasomal degradation. Acts as a scaffold, binding to both PDPK1 and SRC, thereby allowing SRC to phosphorylate PDPK1 at 'Tyr-9', 'Tyr-373', and 'Tyr-376'. Promotes phosphorylation of NMDA receptors by SRC family members, and thereby contributes to the regulation of NMDA receptor ion channel activity and intracellular Ca(2+) levels. May also regulate potassium ion transport by phosphorylation of potassium channel subunits. Phosphorylates SRC; this increases SRC kinase activity. Phosphorylates ASAP1, NPHP1, KCNA2 and SHC1. Promotes phosphorylation of ASAP2, RHOU and PXN; this requires both SRC and PTK2/PYK2.</p>

Subunit:

ASAP2, ARHGAP26, SKAP2 and TGFB1I1. The Tyr-402 phosphorylated form interacts with SRC (via SH2 domain) and SRC family members. Forms a signaling complex with EPHA1, LCK and phosphatidylinositol 3-kinase; upon activation by EFNA1. Interacts with GRB2 (via SH2 domain). Interacts with P53/TP53 and MDM2. Interacts with MYLK. Interacts with BCAR1. Interacts with PDPK1. Interacts (hypophosphorylated) with PXN. Interacts with RB1CC1. Interacts with RHOU. Interacts with VAV1. Interacts with LPXN and PTPN12.

Subcellular Location:

Cytoplasm. Cytoplasm, perinuclear region. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Cell junction, focal adhesion. Cell projection, lamellipodium. Cytoplasm, cell cortex. Nucleus. Note=Interaction with NPHP1 induces the membrane-association of the kinase. Colocalizes with integrins at the cell periphery.

Tissue Specificity:

Most abundant in the brain, with highest levels in amygdala and hippocampus. Low levels in kidney (at protein level). Also expressed in spleen and lymphocytes.

Post-translational modifications:

Phosphorylated on tyrosine residues in response to various stimuli that elevate the intracellular calcium concentration; this activation is indirect and may be mediated by production of reactive oxygen species (ROS). Tyr-402 is the major autophosphorylation site, but other kinases can also phosphorylate Tyr-402. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit. Phosphorylation at Tyr-402 promotes interaction with SRC and SRC family members, leading to phosphorylation at Tyr-579; Tyr-580 and Tyr-881. Phosphorylation at Tyr-881 is important for interaction with GRB2. Phosphorylated on tyrosine residues upon activation of FGR and PKC. Recruitment by NPHP1 to cell matrix adhesions initiates Tyr-402 phosphorylation. In monocytes, adherence to substrata is required for tyrosine phosphorylation and kinase activation. Angiotensin II, thapsigargin and L-alpha-lysophosphatidic acid (LPA) also induce autophosphorylation and increase kinase activity. Phosphorylation by MYLK promotes ITGB2 activation and is thus essential to trigger neutrophil transmigration during lung injury. Dephosphorylated by PTPN12.

DISEASE:

Note=Aberrant PTK2B/PYK2 expression may play a role in cancer cell proliferation, migration and invasion, in tumor formation and metastasis. Elevated PTK2B/PYK2 expression is seen in gliomas, hepatocellular carcinoma, lung cancer and breast cancer.

Similarity:

Belongs to the protein kinase superfamily. Tyr protein kinase family. FAK subfamily. Contains 1 FERM domain. Contains 1 protein kinase domain.

SWISS:
Q14289

Gene ID:
2185

Database links:

[Entrez Gene: 2185](#)Human

[Entrez Gene: 19229](#)Mouse

[Entrez Gene: 50646](#)Rat

[Omim: 601212](#)Human

[SwissProt: Q14289](#)Human

[SwissProt: Q9QVP9](#)Mouse

[SwissProt: P70600](#)Rat

[Unigene: 491322](#)Human

[Unigene: 21613](#)Mouse

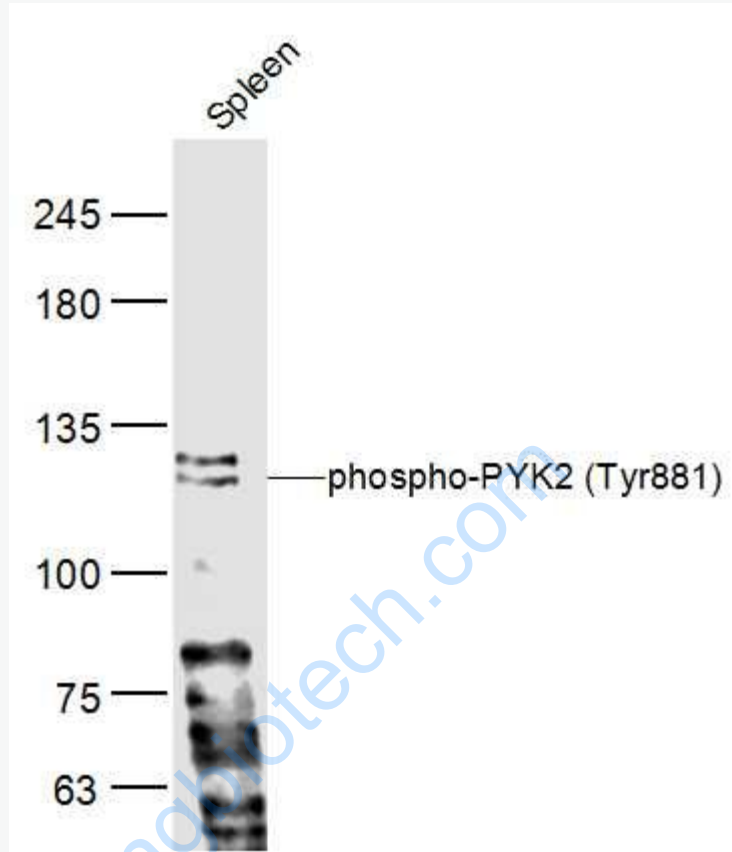
[Unigene: 11025](#)Rat

Important Note:

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

富含脯氨酸的酪氨酸激酶 2 (protein tyrosine kinase 2 ,PYK2)
,又称细胞粘附激酶 β (cellular adhesion kinase β
,CAK β)、相关粘附聚焦酪氨酸激酶(related adhesion focal tyrosine kinase ,RAFTK)
,是粘着斑激酶
(focal adhesion kinase,FAK)家族的成员之一。PYK2是FAK家族的成员之一
,是一种钙依赖性酪氨酸激酶,在氨基酸序列上与FAK有 45
%的同源性。它的活化涉及了多条信号传导通路
,与离子通道的调节、Cytoskeleton的联系及细胞增殖、凋亡密切相关。血管紧张素 II
、一氧化氮可调节PYK2的活性。在神经系统中高度表达的蛋白酪氨酸激酶
(Pyk2), 其酪氨酸残基因为各种G protein-coupled
receptor和胞外信号而被磷酸化,从而增加胞内钙离子的浓度。

Picture:



Sample:

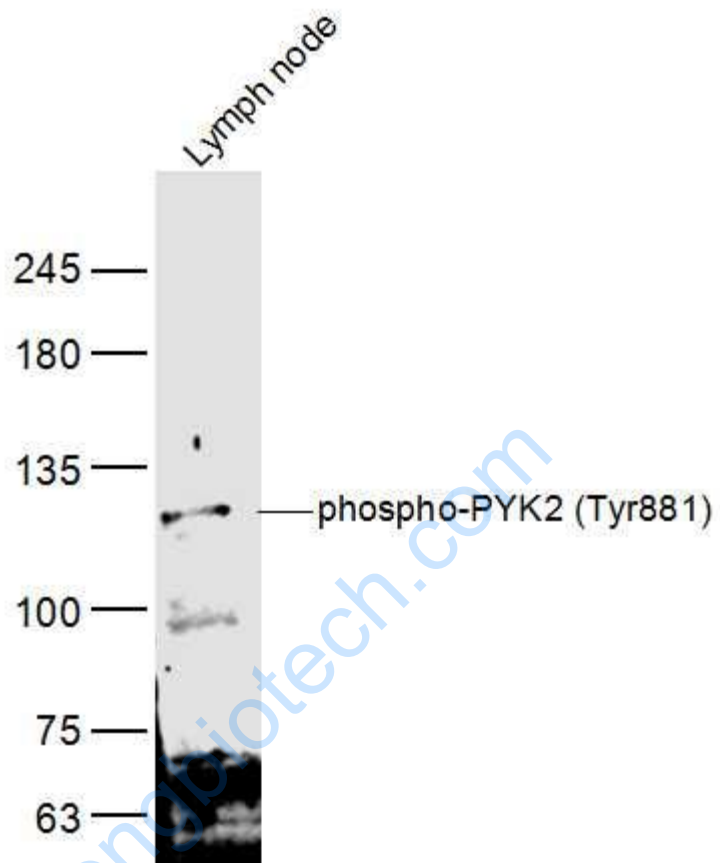
Spleen (Mouse) Lysate at 40 ug

Primary: Anti-phospho-PYK2 (Tyr881) (SL3401R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 116 kD

Observed band size: 116 kD



Sample:

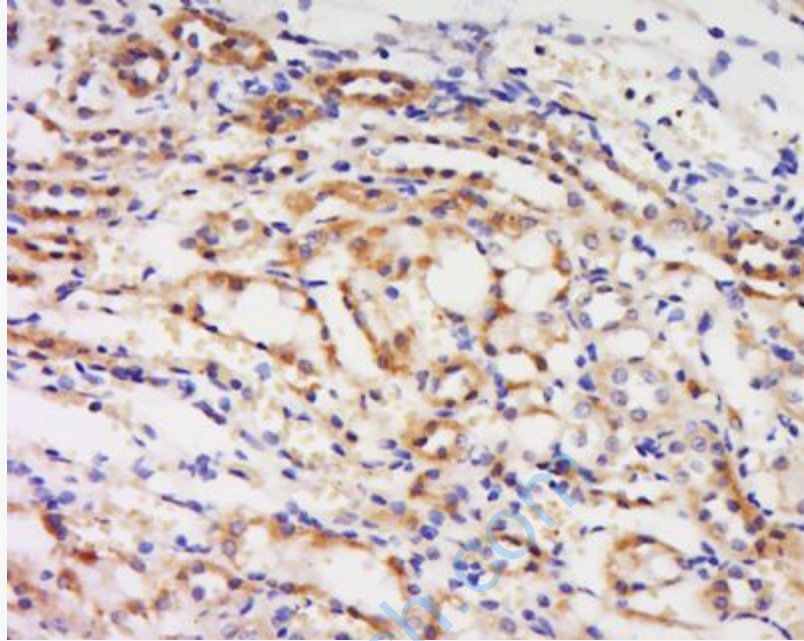
Lymph node (Mouse) Lysate at 40 ug

Primary: Anti-phospho-PYK2 (Tyr881) (SL3401R) at 1/300 dilution

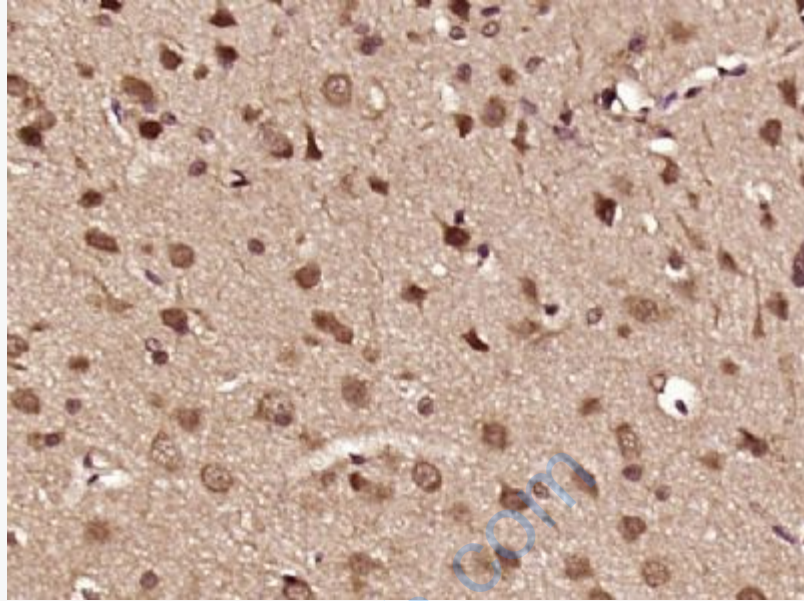
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 116 kD

Observed band size: 116 kD



Tissue/cell: Rat kidney tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;
Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;
Incubation: Anti-phospho-PYK2(Tyr881) Polyclonal Antibody, Unconjugated(SL3401R) 1:500, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Paraformaldehyde-fixed, paraffin embedded (rat brain tissue); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (PYK2 (Tyr881)) Polyclonal Antibody, Unconjugated (SL3401R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.