

## PAK $\alpha$ / $\beta$ / $\gamma$ (Phospho Thr423/402/421) Rabbit pAb

CatalogNo: YP0961

### Key Features

#### Host Species

- Rabbit

#### Reactivity

- Human, Mouse, Rat

#### Applications

- WB, IHC, IF, ELISA

#### MW

- 60kD (Observed)

#### Isotype

- IgG

### Storage

**Storage\*** -15°C to -25°C/1 year (Do not lower than -25°C)

**Formulation** Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

### Recommended Dilution Ratios

**WB 1:500-1:2000**

**IHC 1:100-1:300**

**ELISA 1:5000**

**IF 1:50-200**

### Basic Information

**Clonality** Polyclonal

### Immunogen Information

**Immunogen** The antiserum was produced against synthesized peptide derived from human PAK1/2/3 around the phosphorylation site of Thr423/402/421. AA range:391-440

## Specificity

This antibody detects endogenous levels of PAK1/2/3 only when phosphorylated at Human:T423/402/421, Mouse:T423/402/421, Rat:T422/402/421..The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):RStMV

## Target Information

**Gene name** PAK1/PAK2/PAK3

**Protein Name** Serine/threonine-protein kinase PAK 1/Serine/threonine-protein kinase PAK 2/Serine/threonine-protein kinase PAK 3

Organism	Gene ID	UniProt ID
Human	<a href="#">5058</a> ; <a href="#">5062</a> ; <a href="#">5063</a> ;	<a href="#">Q13153</a> ; <a href="#">Q13177</a> ; <a href="#">O75914</a> ;
Mouse	<a href="#">224105</a> ; <a href="#">18481</a> ;	
Rat	<a href="#">29431</a> ; <a href="#">100910732</a> ; <a href="#">29433</a> ;	<a href="#">P35465</a> ; <a href="#">Q64303</a> ; <a href="#">Q62829</a> ;

## Cellular Localization

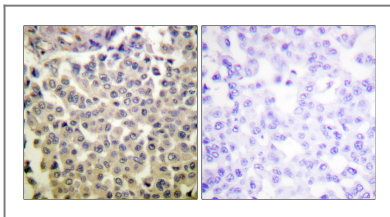
Cytoplasm . Cell junction , focal adhesion . Cell projection , lamellipodium . Cell membrane . Cell projection , ruffle membrane . Cell projection , invadopodium . Nucleus , nucleoplasm . Chromosome . Cytoplasm , cytoskeleton , microtubule organizing center , centrosome . Colocalizes with RUFY3 , F-actin and other core migration components in invadopodia at the cell periphery (PubMed:25766321) . Recruited to the cell membrane by interaction with CDC42 and RAC1. Recruited to focal adhesions upon activation. Colocalized with CIB1 within membrane ruffles during cell spreading upon readhesion to fibronectin. Upon DNA damage , translocates to the nucleoplasm when phosphorylated at Thr-212 where is co-recruited with MORC2 on damaged chromatin (PubMed:23260667) . Localization to the centrosome does not depend upon the presence of gamma-tubulin (PubMed:27012601) . Localization of the active , but not inactive , protein to the adhesions and edge of lamellipodia is mediated by interaction with GIT1 (PubMed:11896197) . .

**Tissue specificity** Overexpressed in gastric cancer cells and tissues (at protein level) (PubMed:25766321) .

## Function

Catalytic activity:ATP + a protein = ADP + a phosphoprotein. ,cofactor:Magnesium. ,enzyme regulation:Activated by binding small G proteins. Binding of GTP-bound CDC42 or RAC1 to the autoregulatory region releases monomers from the autoinhibited dimer , enables phosphorylation of Thr-423 and allows the kinase domain to adopt an active structure. Also activated by binding to GTP-bound CDC42 , independent of the phosphorylation state of Thr-423. Phosphorylation of Thr-84 by OXSR1 inhibits this activation. ,Function:The activated kinase acts on a variety of targets. Likely to be the GTPase effector that links the Rho-related GTPases to the JNK MAP kinase pathway. Activated by CDC42 and RAC1. Involved in dissolution of stress fibers and reorganization of focal complexes. Involved in regulation of microtubule biogenesis through phosphorylation of TBCB. Activity is inhibited in cells undergoing apoptosis , potentially due to binding of CDC2L1 and CDC2L2. ,PTM:Autophosphorylated when activated by CDC42/p21 and RAC1. ,similarity:Belongs to the protein kinase superfamily. STE Ser/Thr protein kinase family. STE20 subfamily. ,similarity:Contains 1 CRIB domain. ,similarity:Contains 1 protein kinase domain. ,subcellular location:Recruited to focal adhesions upon activation. ,subunit:Homodimer in its autoinhibited state. Active as monomer. Interacts tightly with GTP-bound but not GDP-bound CDC42/P21 and RAC1. Binds to the caspase-cleaved p110 isoform of CDC2L1 and CDC2L2 , p110C , but not the full-length proteins. Component of cytoplasmic complexes , which also contain PXN , ARHGEF6 and GIT1. Interacts with ARHGEF7. Also interacts with CRIPAK. Interacts with NISCH. ,

## Validation Data



Immunohistochemistry analysis of paraffin-embedded human breast carcinoma, using PAK1/2/3 (Phospho-Thr423/402/421) Antibody. The picture on the right is blocked with the phospho peptide.

## Contact information

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Please scan the QR code to access additional product information:  
**PAK $\alpha$ / $\beta$ / $\gamma$  (Phospho Thr423/402/421) Rabbit pAb**

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