

## JAK3 (PT0405R) PT<sup>®</sup> Rabbit mAb

Catalog#: AM8250 | Size: 30µL/50µL/100µL

### Main Information

Target	Host Species	Reactivity	Application	MW	Conjugated/Modification
JAK3	Rabbit	Human	WB, IF, IP, ELISA	125kD (Calculated) 125kD (Observed)	Unmodified

### Detailed Information

Recommended Dilution Ratio	WB 1:1000-1:5000; IF 1:200-1:1000; ELISA 1:5000-1:20000; IP 1:50-1:200
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA
Specificity	Endogenous
Purification	Protein A
Storage	-15°C to -25°C/1 year(Do not lower than -25°C)
Concentration	1 mg/ml
MW(Calculated)	125kD
MW(Observed)	125kD
Modification	Unmodified
Clonality	Monoclonal
Clone Number	PT0405R
Isotype	IgG,Kappa

### Antigen&Target Information

Specificity	Endogenous
Gene Name	JAK3
Protein Name	Tyrosine-protein kinase JAK3
Other Name	JAK3 ;Tyrosine-protein kinase JAK3 ;Janus kinase 3 ;JAK-3 ;Leukocyte janus kinase ; L-JAK



## Database Link

Organism	Gene ID	SwissProt
Human	3718	P52333
Mouse	16453	Q62137
Rat		Q63272

## Background

The protein encoded by this gene is a member of the Janus kinase (JAK) family of tyrosine kinases involved in cytokine receptor-mediated intracellular signal transduction. It is predominantly expressed in immune cells and transduces a signal in response to its activation via tyrosine phosphorylation by interleukin receptors. Mutations in this gene are associated with autosomal SCID (severe combined immunodeficiency disease). [provided by RefSeq, Jul 2008].

## Function

Catalytic activity:ATP + a [protein]-L-tyrosine = ADP + a [protein]-L-tyrosine phosphate.,Disease:Defects in JAK3 are a cause of severe combined immunodeficiency autosomal recessive T-cell-negative/B-cell-positive/NK-cell-negative (T(-)B(+)NK(-)SCID) [MIM:600802]. SCID refers to a genetically and clinically heterogeneous group of rare congenital disorders characterized by impairment of both humoral and cell-mediated immunity, leukopenia, and low or absent antibody levels. Patients with SCID present in infancy with recurrent, persistent infections by opportunistic organisms. The common characteristic of all types of SCID is absence of T-cell-mediated cellular immunity due to a defect in T-cell development.,Domain:Possesses two phosphotransferase domains. The second one probably contains the catalytic domain (By similarity), while the presence of slight differences suggest a different role for domain 1.,Function:Tyrosine kinase of the non-receptor type, involved in the interleukin-2 and interleukin-4 signaling pathway. Phosphorylates STAT6, IRS1, IRS2 and PI3K.,online information:JAK3 mutation db,PTM:Tyrosine phosphorylated in response to IL-2 and IL-4.,similarity:Belongs to the protein kinase superfamily. Tyr protein kinase family. JAK subfamily.,similarity:Contains 1 FERM domain.,similarity:Contains 1 protein kinase domain.,similarity:Contains 1 SH2 domain.,subcellular location:Wholly intracellular, possibly membrane associated.,subunit:Interacts with STAM2 and MYO18A (By similarity). Interacts with SHB.,tissue specificity:In NK cells and an NK-like cell line but not in resting T-cells or in other tissues. The S-form is more commonly seen in hematopoietic lines, whereas the B- and M-forms are detected in cells both of hematopoietic and epithelial origins.

## Cellular Localization

Cytoplasm

## Tissue Expression

In NK cells and an NK-like cell line but not in resting T-cells or in other tissues. The S-form is more commonly seen in hematopoietic lines, whereas the B-form is detected in cells both of hematopoietic and epithelial origins.



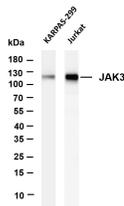
## Research Areas

- Chemokine signaling pathway
- PI3K-Akt signaling pathway
- Necroptosis
- Signaling pathways regulating pluripotency of stem cells
- JAK-STAT signaling pathway
- Th1 and Th2 cell differentiation
- Th17 cell differentiation
- Hepatitis B
- Measles
- Human T-cell leukemia virus 1 infection
- Epstein-Barr virus infection
- Pathways in cancer
- Viral carcinogenesis
- Non-small cell lung cancer
- Primary immunodeficiency

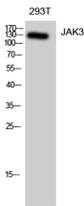
## Signaling Pathway

Cellular Processes >> Cell growth and death >> Necroptosis  
 Cellular Processes >> Cellular community - eukaryotes >> Signaling pathways regulating pluripotency of stem cells  
 Organismal Systems >> Immune system >> Th1 and Th2 cell differentiation  
 Organismal Systems >> Immune system >> Th17 cell differentiation  
 Organismal Systems >> Immune system >> Chemokine signaling pathway  
 Human Diseases >> Cancer: overview >> Pathways in cancer  
 Human Diseases >> Cancer: specific types >> Non-small cell lung cancer  
 Human Diseases >> Immune disease >> Primary immunodeficiency  
 Environmental Information Processing >> Signal transduction >> JAK-STAT signaling pathway  
 Environmental Information Processing >> Signal transduction >> PI3K-Akt signaling pathway

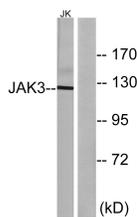
## Validation Data



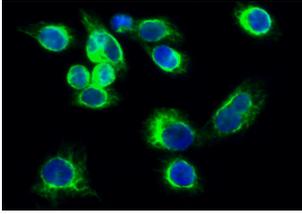
Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-JAK3 antibody. The HRP-conjugated Goat anti-Rabbit IgG(H + L) antibody was used to detect the antibody. Lane 1: KARPAS-299 Lane 2: Jurkat Predicted band size: 125kDa Observed band size: 125kDa



Western Blot analysis of 293T cells using JAK3 Antibody diluted at 1:1000



Western blot analysis of lysates from Jurkat cells, using JAK3 Antibody. The lane on the right is blocked with the synthesized peptide.



Immunofluorescence analysis of HeLa cell. 1, JAK3 Antibody(green) was diluted at 1:200(4<sup>o</sup> overnight). 2, Goat Anti Rabbit Alexa Fluor 488 Catalog:RS3211 was diluted at 1:1000(room temperature, 50min). 3 DAPI(blue) 10min.

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