JAK2 (Phospho Tyr119) Rabbit pAb

Catalog#: AP1046 | Size: 30μL/50μL/100μL

Main Information

Target	Host Species	Reactivity	Application	MW	Conjugated/Modification
JAK2	Rabbit	Human, Mouse, Rat	IHC, IF, ELISA	130kD (Observed)	Phospho

Detailed Information

Recommeded Dilution Ratio	IHC 1:100-1:300; ELISA 1:5000; IF 1:50-200
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Specificity	Phospho-JAK2 (Y119) Polyclonal Antibody detects endogenous levels of JAK2 protein only when phosphorylated at Y119.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 When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports.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):RFyFP
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Storage	-15°C to -25°C/1 year(Do not lower than -25°C)
Concentration	1 mg/ml
MW(Observed)	130kD
Modification	Phospho
Clonality	Polyclonal
Isotype	IgG

Antigen&Target Information

Immunogen	The antiserum was produced against synthesized peptide derived from human JAK2 around the phosphorylation site of Tyr119. AA range:81-130
Specificity	Phospho-JAK2 (Y119) Polyclonal Antibody detects endogenous levels of JAK2 protein only when phosphorylated at Y119.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 When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports.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):RFyFP
Gene Name	JAK2
Protein Name	Tyrosine-protein kinase JAK2
Other Name	JAK2 ;Tyrosine-protein kinase JAK2 ;Janus kinase 2 ;JAK-2

Database Link

Organism	Gene ID	SwissProt
Human	3717	O60674
Mouse	16452	Q62120
Rat	24514	Q62689

Background

This gene product is a protein tyrosine kinase involved in a specific subset of cytokine receptor signaling pathways. It has been found to be constituitively associated with the prolactin receptor and is required for responses to gamma interferon. Mice that do not express an active protein for this gene exhibit embryonic lethality associated with the absence of definitive erythropoiesis. [provided by RefSeq, Jul 2008].

Function

Catalytic activity:ATP + a [protein]-L-tyrosine = ADP + a [protein]-L-tyrosine phosphate.,Disease:Chromosomal aberrations involving JAK2 are found in both chronic and acute forms of eosinophilic, lymphoblastic and myeloid leukemia. Translocation t(8;9)(p22;p24) with PCM1 links the protein kinase domain of JAK2 to the major portion of PCM1. Translocation t(9;12)(p24;p13) with ETV6.,Disease:Defects in JAK2 are a cause of acute myelogenous leukemia (AML) [MIM:601626]. AML is a malignant disease in which hematopoietic precursors are arrested in an early stage of development.,Disease:Defects in JAK2 are a cause of susceptibility to Budd-Chiari syndrome [MIM:600880]. Budd-Chiari syndrome is a spectrum of disease states, including anatomic abnormalities and hypercoagulable disorders, resulting in hepatic venous outflow occlusion. Clinical manifestations observed in the majority of patients include hepatomegaly, right upper quadrant pain, and abdominal ascites.,Disease:Defects in JAK2 are associated with familial myelofibrosis [MIM:254450]. Myelofibrosis with myeloid metaplasia is a myeloproliferative disease with annual incidence of 0.5-1.5 cases per 100,000 individuals and age at diagnosis around 60 (an increased prevalence is noted in Ashkenazi Jews). Clinical manifestations depend on the type of blood cell affected and may include anemia, pallor, splenomegaly, hypermetabolic state, petechiae, ecchymosis, bleeding, lymphadenopathy, hepatomegaly, portal hypertension.,Disease:Defects in JAK2 are associated with polycythemia vera (PV) [MIM:263300]. PV, the most common form of primary polycythemia, is caused by somatic mutation in a single hematopoietic stem cell leading to clonal hematopoiesis. PV is a myeloproliferative disorder characterized predominantly by erythroid hyperplasia, but also by myeloid leukocytosis, thrombocytosis, and splenomegaly. Familial cases of PV are very rare and usually manifest in elderly patients.,Disease:Defects in JAK2 gene may be a cause of essential thrombocythemia (ET) [MIM:187950]. ET is characterized by elevated platelet levels due to sustained proliferation of megakaryocytes, and frequently lead to thrombotic and haemorrhagic complications.,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:Plays a role in leptin signaling and control of body weight (By similarity). Tyrosine kinase of the non-receptor type, involved in interleukin-3 and probably interleukin-23 signal transduction.,PTM:Leptin promotes phosphorylation on tyrosine residues, including phosphorylation on Tyr-813.,similarity:Belongs to the protein kinase superfamily. Tyr protein kinase family.,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 SIRPA and SH2B1 (By similarity). Interacts with IL23R, SKB1 and STAM2.,tissue specificity:Expressed in blood, bone marrow and lymph node.

Cellular Localization

Endomembrane system ; Peripheral membrane protein. Cytoplasm. Nucleus.

Tissue Expression

Ubiquitously expressed throughout most tissues.

Research Areas

- EGFR tyrosine kinase inhibitor resistance
- 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
- Cholinergic synapse
- Prolactin signaling pathway
- Adipocytokine signaling pathway
- AGE-RAGE signaling pathway in diabetic complications
- Growth hormone synthesis, secretion and action
- Leishmaniasis
- Toxoplasmosis
- Tuberculosis
- Hepatitis B
- Influenza A
- Kaposi sarcoma-associated herpesvirus infection
- Herpes simplex virus 1 infection

- Pathways in cancer
- Chemical carcinogenesis - receptor activation
- PD-L1 expression and PD-1 checkpoint pathway in cancer
- Lipid and atherosclerosis

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
Organismal Systems >> Endocrine system >> Adipocytokine signaling pathway
Organismal Systems >> Endocrine system >> Prolactin signaling pathway
Organismal Systems >> Endocrine system >> Growth hormone synthesis, secretion and action
Organismal Systems >> Nervous system >> Cholinergic synapse
Human Diseases >> Cancer: overview >> Pathways in cancer
Human Diseases >> Cancer: overview >> PD-L1 expression and PD-1 checkpoint pathway in cancer
Environmental Information Processing >> Signal transduction >> JAK-STAT signaling pathway
Environmental Information Processing >> Signal transduction >> PI3K-Akt signaling pathway

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