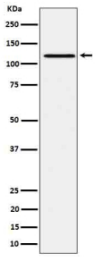
Phospho-JAK1 (pTyr1034/pTyr1035) Antibody [clone 31J16] (FY13168)

Catalog No.	Formulation	Size
FY13168	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31J16
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P23458
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200
Limitations	This Phospho-JAK1 (pTyr1034/pTyr1035) antibody is available for research use only.



Western blot testing of lysate from human Ramos cells treated with pervanadate, using Phospho-JAK1 (pTyr1034/pTyr1035) antibody. Phospho-JAK1 (pTyr1034/pTyr1035) detected in pervanadate-treated Ramos lysate as a single band at ~125â€“130 kDa, consistent with activated full-length JAK1.

Description

Phospho-JAK1 (pTyr1034/pTyr1035) antibody detects Janus kinase 1 phosphorylated at tyrosine residues 1034 and 1035, encoded by the JAK1 gene. Janus kinase 1 is a non-receptor tyrosine kinase that plays an essential role in cytokine receptor signaling and activation of the JAK-STAT pathway. Phosphorylation at Tyr1034 and Tyr1035 is required for maximal catalytic activity of JAK1, serving as a hallmark of receptor engagement and downstream signal transduction.

Phospho-JAK1 (pTyr1034/pTyr1035) antibody provides a highly selective reagent for studying immune signaling, cytokine biology, and oncogenic kinase activation.

Janus kinase 1 is associated with type I and type II cytokine receptors, including interferon, interleukin, and growth factor receptors. Upon ligand binding, receptor dimerization promotes cross-phosphorylation of JAK kinases, including JAK1. Research using Phospho-JAK1 (pTyr1034/pTyr1035) antibody has demonstrated that phosphorylation of these two tyrosines in the activation loop is essential for stabilizing the active conformation of the kinase. This modification enhances catalytic efficiency, allowing phosphorylation of STAT transcription factors that translocate to the nucleus to regulate gene expression. Without phosphorylation at Tyr1034/1035, JAK1 signaling is significantly impaired, underscoring the importance of these residues in cellular communication.

Aberrant phosphorylation of JAK1 is strongly linked to human disease. Studies with Phospho-JAK1 (pTyr1034/pTyr1035) antibody have revealed that hyperactivation of JAK1 signaling contributes to autoimmune disorders, chronic inflammation, and hematologic malignancies. Mutations in JAK1 that increase constitutive phosphorylation drive uncontrolled STAT activation, leading to persistent cytokine-independent signaling. Such alterations have been observed in acute lymphoblastic leukemia, T cell leukemias, and other cancers. By monitoring phosphorylation at Tyr1034/1035, researchers can assess disease activity and response to JAK inhibitors, many of which are already approved for clinical use.

Beyond oncology, JAK1 phosphorylation regulates antiviral responses and immune homeostasis. Research using Phospho-JAK1 (Tyr1034/1035) antibody has confirmed that type I interferon signaling requires robust activation of JAK1 to mount effective antiviral defenses. Similarly, interleukin signaling through JAK1 controls T helper cell differentiation, B cell function, and innate immune cell activity. Dysregulation of phosphorylation contributes to immunodeficiency when signaling is insufficient, or autoimmunity when signaling is excessive. This positions JAK1 as both a therapeutic target and a biomarker of immune function.

Phospho-JAK1 (pTyr1034/pTyr1035) antibody has proven especially valuable in oncology drug development. JAK inhibitors such as ruxolitinib and tofacitinib target the ATP-binding pocket of JAK kinases, suppressing phosphorylation and signaling. Using Phospho-JAK1 (pTyr1034/pTyr1035) antibody, researchers can measure drug efficacy by quantifying phosphorylation levels in cells and tissues. This allows evaluation of inhibitor potency and selectivity, providing critical translational insight into therapeutic responses.

Phospho-JAK1 (pTyr1034/pTyr1035) antibody is used across multiple experimental applications. In western blotting, it detects phosphorylation-dependent shifts in JAK1 bands, confirming activation after cytokine stimulation. Immunohistochemistry highlights phosphorylated JAK1 in tissues affected by inflammation or cancer, revealing cell-specific activation patterns. Flow cytometry enables quantification of phosphorylation dynamics in immune subsets, making it possible to monitor activation in real time. Immunoprecipitation experiments further demonstrate JAK1 phosphorylation status and its association with receptor complexes. These diverse applications make Phospho-JAK1 (pTyr1034/pTyr1035) antibody a versatile and indispensable reagent in signal transduction research.

In developmental biology, JAK1 phosphorylation also influences hematopoiesis and tissue growth. Research with Phospho-JAK1 (pTyr1034/1035) antibody has shown that altered JAK1 activity disrupts stem cell niches and differentiation programs, providing a link between phosphorylation state and developmental outcomes. The role of JAK1 in nervous system development has also been highlighted, where phosphorylation status influences cytokine-driven survival and differentiation of neurons. This expands the significance of JAK1 phosphorylation beyond immunity into broader aspects of physiology.

By supplying validated Phospho-JAK1 (pTyr1034/pTyr1035) antibody reagents, NSJ Bioreagents supports research into cytokine signaling, immune regulation, and cancer biology. Detection of phosphorylation at Tyr1034 and Tyr1035 provides a precise biomarker of JAK1 activation and a critical tool for exploring therapeutic strategies that target the JAK-STAT pathway.

Application Notes

Optimal dilution of the Phospho-JAK1 (pTyr1034/pTyr1035) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-JAK1 (pY1034 + pY1035) was used as the immunogen for the Phospho-JAK1 (pTyr1034/pTyr1035) antibody.

Storage

Store the Phospho-JAK1 (pTyr1034/pTyr1035) antibody at -20oC.