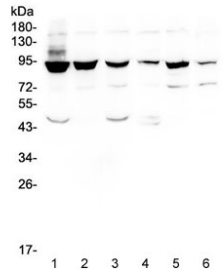
STAT1 Antibody / JAK-STAT Pathway Transcription Factor (R32722)

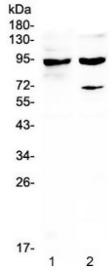
Catalog No.	Formulation	Size
R32722	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

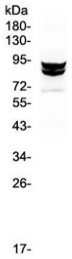
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat, Monkey
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA, 0.025% sodium azide
UniProt	P42224
Localization	Cytoplasmic, nuclear
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml Immunofluorescence/Immunocytochemistry (FFPE) : 2-4ug/ml Flow Cytometry : 1-3ug/10^6 cells
Limitations	This STAT1 Antibody / JAK-STAT Pathway Transcription Factor is available for research use only.



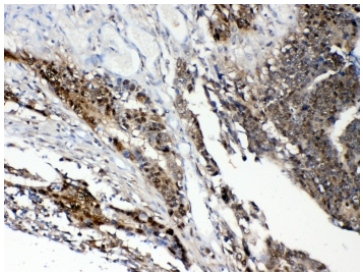
STAT1 Antibody Multi-Cell Line WB. Western blot analysis of human HeLa, PC-3, Caco-2, A549, K562, and Raji cell lysates using STAT1 antibody demonstrates prominent immunoreactive bands at approximately 91 and 84 kDa, corresponding to the alpha and beta isoforms of Signal Transducer and Activator of Transcription 1 (STAT1). STAT1 is a key transcription factor within the JAK-STAT signaling pathway that mediates cellular responses to interferons, cytokines, and growth factors. The broad detection of STAT1 across multiple epithelial and hematopoietic cell lines is consistent with its central role in signal transduction, immune regulation, transcriptional control, and cellular adaptation to extracellular signaling stimuli. Western blot was performed using 0.5 ug/ml primary antibody. Predicted molecular weights: ~91 kDa (STAT1 alpha) and ~84 kDa (STAT1 beta).



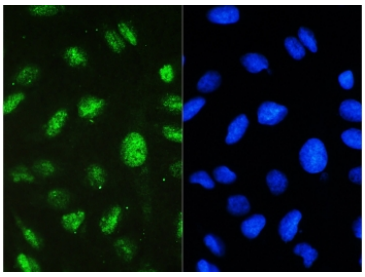
STAT1 Antibody Thymus WB. Western blot analysis of rat thymus and mouse thymus tissue lysates using STAT1 antibody demonstrates prominent immunoreactive bands at approximately 91 and 84 kDa, corresponding to the alpha and beta isoforms of Signal Transducer and Activator of Transcription 1 (STAT1). STAT1 is a central transcription factor within the JAK-STAT signaling pathway that mediates cellular responses to interferons, cytokines, and immune regulatory signals. The strong expression observed in thymic tissues is consistent with the important role of STAT1 in immune system development, cytokine signaling, and transcriptional regulation within lymphoid organs. Western blot was performed using 0.5 ug/ml primary antibody. Predicted molecular weights: ~91 kDa (STAT1 alpha) and ~84 kDa (STAT1 beta).



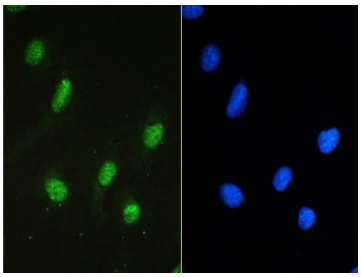
STAT1 Antibody Thymus WB. Western blot analysis of rat thymus and mouse thymus tissue lysates using STAT1 antibody demonstrates prominent immunoreactive bands at approximately 91 kDa and 84 kDa, consistent with the alpha and beta isoforms of Signal Transducer and Activator of Transcription 1 (STAT1). STAT1 is a central transcription factor within the JAK-STAT signaling pathway that mediates cellular responses to interferons, cytokines, and immune regulatory signals. The strong expression observed in thymic tissues is consistent with the important role of STAT1 in immune system development, cytokine signaling, and transcriptional regulation within lymphoid organs. Western blot was performed using 0.5 ug/ml primary antibody. Predicted molecular weights: approximately 91 kDa for the alpha isoform and 84 kDa for the beta isoform.



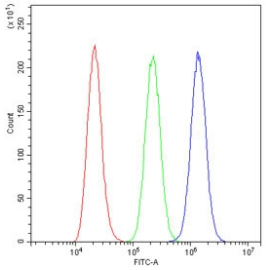
STAT1 Antibody Intestinal Cancer IHC. Immunohistochemistry staining of FFPE human intestinal cancer tissue using STAT1 antibody demonstrates strong cytoplasmic and nuclear staining within neoplastic epithelial cell populations, consistent with expression of Signal Transducer and Activator of Transcription 1 (STAT1). STAT1 is a key transcription factor within the JAK-STAT signaling pathway that mediates cellular responses to interferons, cytokines, and other extracellular signaling molecules. The observed staining pattern is consistent with the role of STAT1 in regulating transcriptional programs involved in immune responses, cellular signaling, differentiation, and tumor-associated signaling networks. These findings support the utility of STAT1 antibody for studies of signal transduction, immune regulation, and transcription factor expression in human tissues. Required HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to testing.



STAT1 Antibody U-2 OS IF/ICC. Immunofluorescent staining of FFPE human U-2 OS cells using STAT1 antibody demonstrates prominent green fluorescence within both the nucleus and cytoplasm, consistent with the known subcellular localization and signaling function of Signal Transducer and Activator of Transcription 1 (STAT1). STAT1 is a key transcription factor within the JAK-STAT signaling pathway that undergoes activation-dependent nuclear translocation to regulate expression of interferon-responsive and cytokine-regulated genes. The observed staining pattern is consistent with the role of STAT1 in transcriptional regulation, immune signaling, and cellular responses to extracellular stimuli. Nuclei are visualized with DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to testing.



STAT1 Antibody U-2 OS Cell IF. Immunofluorescent staining of FFPE human U-2 OS cells using STAT1 antibody demonstrates strong green fluorescence predominantly within the nucleus, consistent with the role of Signal Transducer and Activator of Transcription 1 (STAT1) as a transcription factor that translocates to the nucleus following activation. STAT1 is a central mediator of JAK-STAT signaling and regulates expression of genes involved in interferon responses, cytokine signaling, immune regulation, and cellular adaptation to extracellular stimuli. The observed nuclear staining pattern is consistent with transcriptionally active STAT1 participating in signal-dependent gene regulation. Nuclei are visualized with DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to testing.



STAT1 Antibody A431 Flow Cytometry. Flow cytometric analysis of human A431 cells stained with STAT1 antibody demonstrates a clear rightward shift of the blue histogram (STAT1 antibody) relative to the green histogram (isotype control) and red histogram (cells alone), consistent with expression of Signal Transducer and Activator of Transcription 1 (STAT1). STAT1 is a key transcription factor within the JAK-STAT signaling pathway that mediates cellular responses to interferons, cytokines, and growth factors. The distinct separation between the STAT1-stained population and controls supports specific detection of STAT1 and demonstrates the utility of this antibody for flow cytometric studies of signal transduction, immune regulation, and cytokine-responsive cellular pathways. Cells were blocked with goat serum and stained using 1 ug antibody per 10^6 cells.

Description

STAT1 Antibody / JAK-STAT Pathway Transcription Factor is designed for the detection and study of Signal Transducer and Activator of Transcription 1 (STAT1), a critical transcription factor that functions as a central mediator of cytokine, interferon, and growth factor signaling. STAT1 is a key component of the Janus kinase-signal transducer and activator of transcription (JAK-STAT) pathway, one of the most important signaling networks involved in cellular communication. Through its ability to transmit extracellular signals directly to the nucleus, STAT1 regulates gene expression programs that control immune responses, host defense mechanisms, cellular differentiation, and maintenance of tissue homeostasis.

STAT1 belongs to the STAT family of latent cytoplasmic transcription factors that become activated following stimulation of cytokine receptors. Activation typically involves phosphorylation by Janus kinases (JAKs), leading to dimerization and nuclear translocation of STAT1. Once inside the nucleus, STAT1 binds specific regulatory DNA sequences and promotes transcription of genes involved in immunity, inflammation, cell survival, and adaptive cellular responses. This highly conserved signaling mechanism enables cells to rapidly alter gene expression in response to environmental and physiologic stimuli.

Among its best-characterized functions, STAT1 serves as a major regulator of interferon-mediated signaling pathways. Interferon activation of STAT1 triggers transcriptional programs that promote antiviral defense, pathogen recognition, antigen presentation, and immune surveillance. As a result, STAT1 occupies a central position within both innate and adaptive immune systems. The importance of STAT1 in coordinating immune responses has made it one of the most extensively studied transcription factors in immunology, infectious disease research, and inflammation biology.

Beyond immune regulation, STAT1 contributes to a wide variety of cellular processes including apoptosis, cell cycle control, differentiation, tissue remodeling, and developmental signaling. STAT1 activity influences how cells respond to stress, infection, and changes in the extracellular environment. Because STAT1 integrates signals from multiple cytokines and growth factors, it functions as an important molecular hub linking extracellular communication networks with transcriptional regulation. These diverse biologic activities have generated significant interest in STAT1 as a target for studies involving signal transduction and cellular adaptation.

Cancer biology represents another major area of STAT1 research. Alterations in JAK-STAT signaling pathways are frequently associated with changes in cell proliferation, immune evasion, and tumor microenvironment regulation. STAT1-dependent gene expression programs influence interactions between tumor cells and the immune system, making STAT1 an important target in studies examining cancer progression, immune responses, and therapeutic intervention strategies. Research involving STAT1 continues to improve understanding of how transcriptional signaling networks contribute to both normal physiology and disease processes.

In addition to its roles in immunity and cancer, STAT1 has attracted considerable interest in developmental biology, stem cell research, regenerative medicine, and inflammatory disorders. Because STAT1 serves as a convergence point for numerous signaling pathways, it provides valuable insight into the mechanisms by which cells coordinate responses to external stimuli. Its broad functional significance has established STAT1 as a foundational target for investigations of transcriptional regulation and signal-dependent gene expression.

STAT1 Antibody is useful for investigating interferon signaling, JAK-STAT pathway activation, cytokine responses, immune regulation, host-pathogen interactions, cancer biology, and transcriptional control. Researchers utilize STAT1 Antibody reagents to evaluate protein expression patterns and study molecular mechanisms governing signal transduction, immune function, cellular communication, and transcription factor-dependent regulatory networks.

Explore additional antibodies to JAK-STAT signaling proteins, transcription factors, and intracellular signaling regulators on our Signal Transduction Antibodies page.

Application Notes

Optimal dilution of the STAT1 Antibody / JAK-STAT Pathway Transcription Factor should be determined by the researcher.

Immunogen

Amino acids S2-A230 from the human protein were used as the immunogen for the STAT1 antibody.

Storage

After reconstitution, the STAT1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

STAT1 Antibody, Signal Transducer and Activator of Transcription 1 Antibody, STAT1A Antibody, Interferon Signaling Transcription Factor Antibody, JAK-STAT Pathway Transcription Factor Antibody, Cytokine Signaling Protein Antibody, Immune Response Transcription Factor Antibody