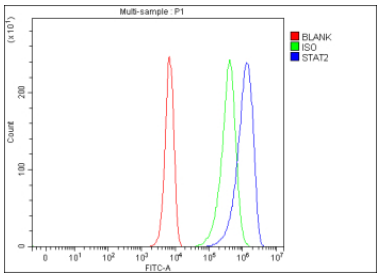
STAT2 Antibody / Signal transducer and activator of transcription 2 (FY12845)

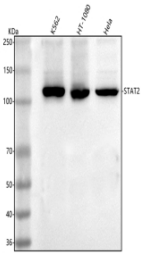
Catalog No.	Formulation	Size
FY12845	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P52630
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This STAT2 antibody is available for research use only.



Flow Cytometry analysis of K562 cells using anti-STAT2 antibody. Overlay histogram showing K562 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-STAT2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of STAT2 using anti-STAT2 antibody. Lane 1: human K562 whole cell lysates, Lane 2: human HT-1080 whole cell lysates, Lane 3: human Hela whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-STAT2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. Expected molecular weight: 98-113 kDa depending on phosphorylation level.

Description

STAT2 antibody detects Signal transducer and activator of transcription 2, a transcription factor central to interferon (IFN) signaling and antiviral defense. Encoded by the STAT2 gene on chromosome 12q13.2, this protein is a member of the STAT family of latent cytoplasmic transcription factors that transmit signals from cytokine receptors to the nucleus. STAT2 is activated by phosphorylation in response to type I interferons (IFN-alpha and IFN-beta), forming part of the ISGF3 (interferon-stimulated gene factor 3) transcriptional complex with STAT1 and IRF9 to regulate antiviral gene expression.

Upon cytokine stimulation, STAT2 undergoes phosphorylation on tyrosine 690 by Janus kinases (JAK1 and TYK2), dimerizes with STAT1, and associates with IRF9. This trimeric complex translocates to the nucleus, where it binds interferon-stimulated response elements (ISREs) in the promoters of interferon-stimulated genes (ISGs), initiating transcription of antiviral effectors such as OAS1, MX1, and ISG15. These gene products suppress viral replication and enhance immune defense mechanisms.

The STAT2 antibody is widely used in immunology, virology, and cell signaling research to examine interferon pathways, innate immune activation, and transcriptional regulation. Western blot analysis detects a 113 kilodalton band corresponding to STAT2, while immunofluorescence reveals both cytoplasmic and nuclear staining following interferon treatment. This antibody enables detailed analysis of IFN-mediated signal transduction and transcriptional regulation in various immune and epithelial cell types.

STAT2 plays a critical role not only in antiviral immunity but also in inflammation, cancer immunosurveillance, and immune tolerance. Deficiency or mutation of STAT2 causes severe susceptibility to viral infections due to impaired interferon signaling, while persistent activation of the JAK-STAT pathway is associated with tumor progression and chronic inflammation. The STAT2 antibody supports exploration of these processes and evaluation of therapeutic modulation of interferon pathways. NSJ Bioreagents validates this antibody for its applications, ensuring accurate and reproducible detection in immune signaling studies.

Application Notes

Optimal dilution of the STAT2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human STAT2 recombinant protein (Position: D290-D843) was used as the immunogen for the STAT2 antibody.

Storage

After reconstitution, the STAT2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.