10320 Camino Santa Fe, Suite G
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Tel: 858.875.1900 Fax: 858.875.1999

Anti-STAT2 (MOUSE) Monoclonal Antibody

Stat2 Antibody

Catalog # ASR4200

Specification

Anti-STAT2 (MOUSE) Monoclonal Antibody - Product Information

Host	**Mouse**
Conjugate	**Unconjugated**
Target Species	**Mouse**
Reactivity	**Human**
Clonality	**Monoclonal**
Application	**WB, IHC, E, I, LCI**
Application Note	**This Protein-A purified antibody has been tested for use in ELISA, immunohistochemistry, and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 113 kDa in size corresponding to STAT2 protein by western blotting in the appropriate cell lysate or extract.**
Physical State	**Liquid (sterile filtered)**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**This monoclonal antibody was produced by repeated immunizations with a synthetic peptide corresponding to residues near the carboxy terminus of mouse STAT2 protein.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-STAT2 (MOUSE) Monoclonal Antibody - Additional Information

Other Names

6773

Purity

This Protein-A purified antibody is directed against human STAT2 protein. A BLAST analysis was used to suggest cross-reactivity with STAT2 protein from human, rat (73%) and mouse (76%), sources based on homology with the immunizing sequence. Reactivity against homologues from other sources is not known.

Storage Condition

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note

This product is for research use only and is not intended for therapeutic or diagnostic applications.

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Anti-STAT2 (MOUSE) Monoclonal Antibody - Protein Information

Name Stat2

Function
Signal transducer and activator of transcription that mediates signaling by type I interferons (IFN-alpha and IFN-beta). Following type I IFN binding to cell surface receptors, Jak kinases (TYK2 and JAK1) are activated, leading to tyrosine phosphorylation of STAT1 and STAT2. The phosphorylated STATs dimerize, associate with IRF9/ISGF3G to form a complex termed ISGF3 transcription factor, that enters the nucleus. ISGF3 binds to the IFN stimulated response element (ISRE) to activate the transcription of interferon stimulated genes, which drive the cell in an antiviral state. In addition, has also a negative feedback regulatory role in the type I interferon signaling by recruiting USP18 to the type I IFN receptor subunit IFNAR2 thereby mitigating the response to type I IFNs. Acts as a regulator of mitochondrial fission by modulating the phosphorylation of DNM1L at 'Ser-616' and 'Ser-637' which activate and inactivate the GTPase activity of DNM1L respectively.

Cellular Location
Cytoplasm {ECO:0000250|UniProtKB:P52630}. Nucleus {ECO:0000250|UniProtKB:P52630}. Note=Translocated into the nucleus upon activation by IFN-alpha/beta. {ECO:0000250|UniProtKB:P52630}

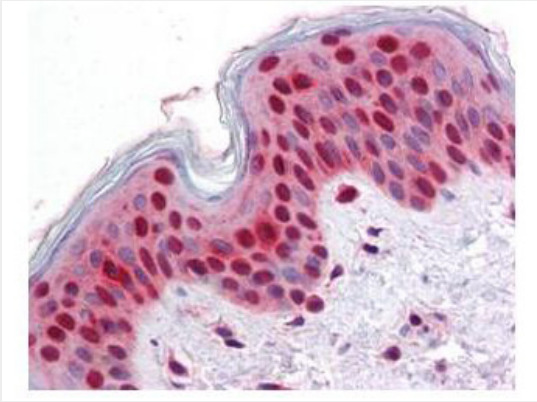
Tissue Location
Found in the brain, lung, heart, spleen, liver, kidney, muscle and the testis

Anti-STAT2 (MOUSE) Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-STAT2 (MOUSE) Monoclonal Antibody - Images



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Rockland's anti-Stat2 monoclonal antibody was used at a 2.5 µg/mL to detect Stat2 in squamous epithelium from human skin (40X) showing moderate to strong nuclear and faint to moderate cytoplasmic staining (image). Expression of Stat2 is expected to be cytoplasmic, and nuclear upon activation. The image shows the localization of the antibody as the precipitated red signal, with a hematoxylin purple nuclear counterstain. Tissue was formalin-fixed and paraffin embedded. Personal Communication, Vasiliki Demas, LifeSpan Biosciences, Seattle, WA.

Anti-STAT2 (MOUSE) Monoclonal Antibody - Background

STAT2 is a member of the STAT family of transcription factors. Unlike other STATs, STAT2 is unique as it can only be activated by interferons (IFNs). STAT2 is a critical component in mediating many IFN-stimulated biological activities including antiproliferation and antiviral responses. Upon IFN treatment, STAT1 and STAT2 become tyrosine phosphorylated, assemble as heterodimers that bind IRF9 to form the ISGF3 complex. This complex translocates to the nucleus, binds to promoters of IFN-stimulated genes and mediates gene transcription. Consequently, mutations in STAT2 or loss of STAT2 expression leads to impairment in IFN signal transduction and gene activation. IFN-alpha is an approved drug for the treatment of several forms of cancer. Yet only a subset of patients who receive IFN-alpha therapy benefit from the treatment. Given that STAT2 is activated by IFNs, it is important to define if the reduced or lack of antitumor effects seen in cancer patients on IFN therapy is due to in defects in STAT2 function. Our goal is to identify regions/motifs within the structural domains of STAT2 that not only are essential for the tyrosine phosphorylation of STAT2, but also regulate the antitumor effects of IFN-alpha. Collectively, the results of our studies will emphasize the physiological role of STAT2 in cancer. From a clinical viewpoint, cancer patients who may benefit the most from receiving IFN-alpha therapy can be selected based on their STAT2 function.