abcam

Product datasheet

Anti-STAT1 antibody [15H3] ab155933

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Overview

Product name	Anti-STAT1 antibody [15H3]
Description	Mouse monoclonal [15H3] to STAT1
Host species	Mouse
Tested applications	**Suitable for:** ICC/IF, IP, WB
Species reactivity	**Reacts with:** Human, Non human primates, African green monkey
Immunogen	Protein expressed in 293T cells transfected with Human STAT1 expression vector.
Positive control	A2058, HeLa and MCF7 cells; A549, 293T, Jurkat, A431, U2OS, COS7 whole cell lysates.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at -20°C.
Storage buffer	Preservative: 0.05% Sodium azide Constituents: 0.1% BSA, 30% Glycerol (glycerin, glycerine), 69% PBS
Purity	Protein A purified
Clonality	Monoclonal
Clone number	15H3
Isotype	IgG1

Applications

The Abpromise guarantee	Our **Abpromise guarantee** covers the use of ab155933 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF		1/20.
IP		Use at 2 µg/mg of lysate.
WB		1/1000. Predicted molecular weight: 87 kDa.

Target

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Function	Signal transducer and activator of transcription that mediates signaling by interferons (IFNs). Following type I IFN (IFN-alpha and IFN-beta) 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 ISGF3G/IRF-9 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 response to type II IFN (IFN-gamma), STAT1 is tyrosine- and serine-phosphorylated. It then forms a homodimer termed IFN-gamma-activated factor (GAF), migrates into the nucleus and binds to the IFN gamma activated sequence (GAS) to drive the expression of the target genes, inducing a cellular antiviral state.
Involvement in disease	Note=STAT1 deficiency results in impaired immune response leading to severe mycobacterial and viral diseases. In the case of complete deficiency, patients can die of viral disease. Defects in STAT1 are a cause of mendelian susceptibility to mycobacterial disease (MSMD) [MIM:209950]; also known as familial disseminated atypical mycobacterial infection. This rare condition confers predisposition to illness caused by moderately virulent mycobacterial species, such as Bacillus Calmette-Guerin (BCG) vaccine and environmental non-tuberculous mycobacteria, and by the more virulent Mycobacterium tuberculosis. Other microorganisms rarely cause severe clinical disease in individuals with susceptibility to mycobacterial infections, with the exception of Salmonella which infects less than 50% of these individuals. The pathogenic mechanism underlying MSMD is the impairment of interferon-gamma mediated immunity whose severity determines the clinical outcome. Some patients die of overwhelming mycobacterial disease with lepromatous-like lesions in early childhood, whereas others develop, later in life, disseminated but curable infections with tuberculoid granulomas. MSMD is a genetically heterogeneous disease with autosomal recessive, autosomal dominant or X-linked inheritance.
Sequence similarities	Belongs to the transcription factor STAT family. Contains 1 SH2 domain.
Post-translational modifications	Phosphorylated on tyrosine and serine residues in response to IFN-alpha, IFN-gamma, PDGF and EGF. Phosphorylation on Tyr-701 (lacking in beta form) by JAK promotes dimerization and subsequent translocation to the nucleus. Phosphorylation on Ser-727 by several kinases including MAPK14, ERK1/2 and CAMKII on IFN-gamma stimulation, regulates STAT1 transcriptional activity. Phosphorylation on Ser-727 promotes sumoylation though increasing interaction with PIAS. Phosphorylation on Ser-727 by PKCdelta induces apoptosis in response to DNA-damaging agents. Sumoylated by SUMO1, SUMO2 and SUMO3. Sumoylation is enhanced by IFN-gamma-induced phosphorylation on Ser-727, and by interaction with PIAS proteins. Enhances the transactivation activity. ISGylated.

| Cellular localization | Cytoplasm. Nucleus. Translocated into the nucleus in response to IFN-gamma-induced tyrosine phosphorylation and dimerization. |

Images

Western blot - Anti-STAT1 antibody [15H3] (ab155933)
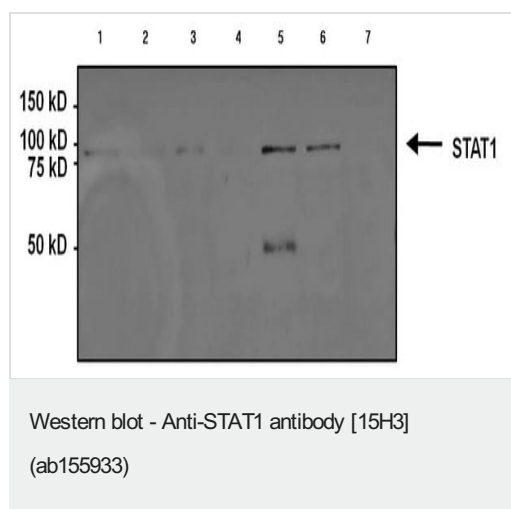
All lanes : Anti-STAT1 antibody [15H3] (ab155933) at 1/1000 dilution

Lane 1 : A549 whole cell lysate

Lane 2 : 293T whole cell lysate

Lane 3 : Jurkat whole cell lysate

Lane 4 : A431 whole cell lysate

Lane 5 : U2OS whole cell lysate

Lane 6 : COS7 whole cell lysate

Lane 7 : 3T3L1 whole cell lysate
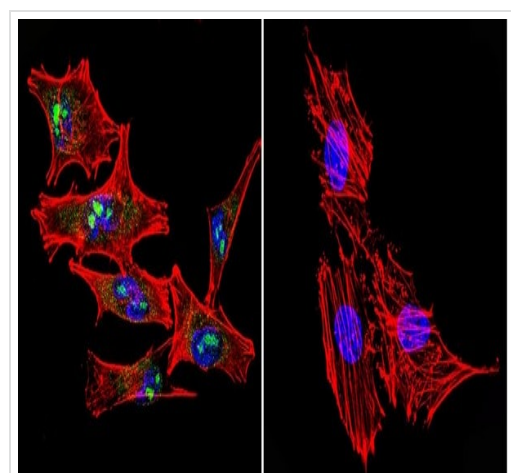
Lysates/proteins at 25 µg per lane.

Secondary

All lanes : Goat anti-mouse HRP conjugated antibody at 1/20000 dilution

Developed using the ECL technique.

Predicted band size: 87 kDa

SDS PAGE: 4-20% Tris-HCl polyacrylamide gel.

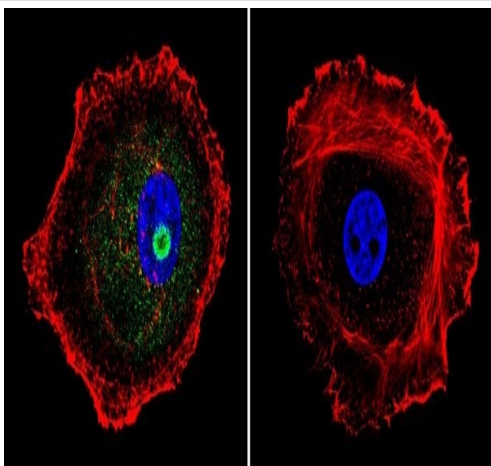Immunocytochemistry/ Immunofluorescence - Anti-STAT1 antibody [15H3] (ab155933)

Immunofluorescent analysis of formaldehyde-fixed A2058 cells labeling STAT1 with ab155933 at 1/20 dilution (green, left image compared with control cells (right image) followed by a DyLight 488-conjugated secondary. Actin stained with Phalloidin (red) and nuclei stained with DAPI (blue).
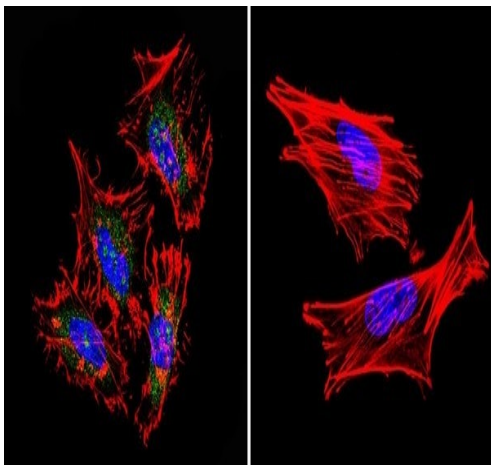
Immunocytochemistry/ Immunofluorescence - Anti-STAT1 antibody [15H3] (ab155933)

Immunofluorescent analysis of formaldehyde-fixed HeLa cells labeling STAT1 with ab155933 at 1/20 dilution (green, left image compared with control cells (right image) followed by a DyLight 488-conjugated secondary. Actin stained with Phalloidin (red) and nuclei stained with DAPI (blue).

Immunocytochemistry/ Immunofluorescence - Anti-STAT1 antibody [15H3] (ab155933)

Immunofluorescent analysis of formaldehyde-fixed MCF7 cells labeling STAT1 with ab155933 at 1/20 dilution (green, left image compared with control cells (right image) followed by a DyLight 488-conjugated secondary. Actin stained with Phalloidin (red) and nuclei stained with DAPI (blue).
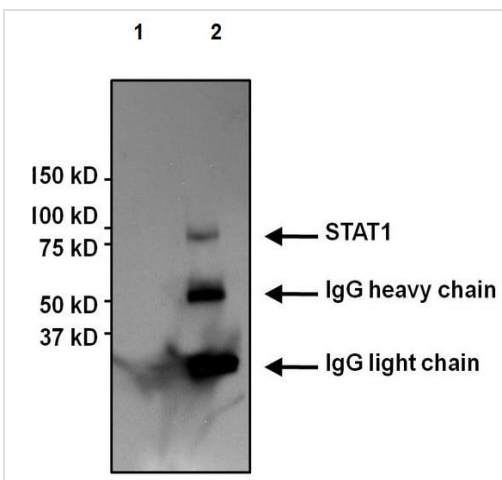
Immunoprecipitation - Anti-STAT1 antibody [15H3] (ab155933)

Immunoprecipitation analysis of STAT1 in U2OS cells.

750 µg of U2OS cell lysate immunoprecipitated with 2 µg ab155933.

All lanes: ab155933 at 1/1000 dilution.

Lane 1: U2OS whole cell lysate.

Lane 2: U2OS whole cell lysate immunopreciptated with ab155933.

Western Blot: 4-20% Tris-HCl polyacrylamide gel.

Secondary: Goat anti-mouse HRP conjugated antibody at 1/20000 dilution.

Predicted band size : 87 kDa.

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