abcam

Product datasheet

HRP Anti-STAT1 alpha antibody [EPYR2154] ab193891

KO VALIDATED Recombinant RabMAb

3 Images

Overview

Product name	HRP Anti-STAT1 alpha antibody [EPYR2154]
Description	HRP Rabbit monoclonal [EPYR2154] to STAT1 alpha
Host species	Rabbit
Conjugation	HRP
Tested applications	**Suitable for:** WB
Species reactivity	**Reacts with:** Mouse, Human
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HeLa, HEK293, NIH-3T3 and A431 cell lysates.
General notes	Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Store at -20°C. Avoid freeze / thaw cycle. Store In the Dark.
Storage buffer	pH: 7.40 Preservative: 0.1% Proclin 300 Solution Constituents: 30% Glycerol (glycerin, glycerine), 1% BSA, PBS
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPYR2154
Isotype	IgG

Applications

The Abpromise guarantee	Our **Abpromise guarantee** covers the use of ab193891 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
WB		1/5000. Detects a band of approximately 91 kDa (predicted molecular weight: 87 kDa).

Target

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.

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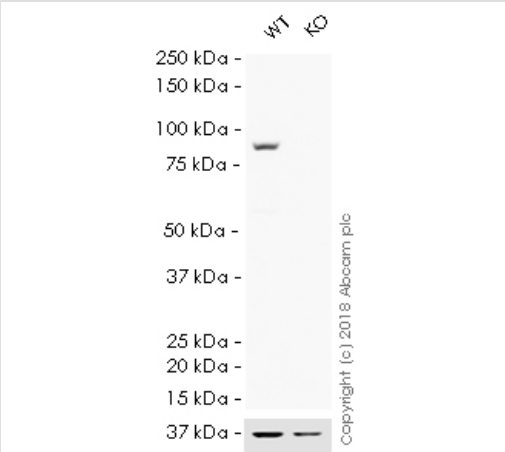
Images



Western blot - HRP Anti-STAT1 alpha antibody [EPYR2154] (ab193891)

All lanes : HRP Anti-STAT1 alpha antibody [EPYR2154] (ab193891) at 1/2000 dilution

Lane 1 : Wild-type HAP1 whole cell lysate
Lane 2 : STAT1 knockout HAP1 whole cell lysate

Lysates/proteins at 20 µg per lane.

Predicted band size: 87 kDa
Observed band size: 91 kDa

Exposure time: 2 minutes

ab193891 was shown to specifically react with STAT1 alpha in wild-type HAP1 cells as signal was lost in STAT1 knockout cells. Wild-type and STAT1 knockout samples were subjected to SDS-PAGE. Ab193891 and **ab184095** (Mouse monoclonal [mAbcam 9484] to GAPDH - Loading Control (Alexa Fluor® 680) loading control) were incubated overnight at 4°C at 1/2000 dilution and 1/20000 dilution respectively. The loading control was imaged using the Licor Odyssey CLx prior to blots being developed with ECL technique.

Western blot - HRP Anti-STAT1 alpha antibody [EPYR2154] (ab193891)

All lanes : HRP Anti-STAT1 alpha antibody [EPYR2154] (ab193891) at 1/5000 dilution

Lane 1 : HeLa whole cell lysate (**ab150035**) at 10 µg
Lane 2 : HEK293 (Human embryonic kidney cell line) Whole Cell Lysate at 10 µg
Lane 3 : NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate at 20 µg
Lane 4 : A431 (Human epithelial carcinoma cell line) Whole Cell Lysate at 20 µg

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 87 kDa
Observed band size: 91 kDa

Exposure time: 2 minutes

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 3% milk before being incubated with ab193891 overnight at 4°C. Antibody binding was visualised using ECL development solution **ab133406**.

HRP Anti-STAT1 alpha antibody [EPYR2154] (ab193891)

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