abcam

ab239360

Anti-STAT1 antibody [EPR23049-111] - ChIP Grade

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR23049-111
Purification technique	Affinity purification Protein A
Concentration	0.59 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

ChIP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Mouse, Human
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/600
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information STAT1

Function	Signal transducer and transcription activator that mediates cellular responses to interferons (IFNs), cytokine KITLG/SCF and other cytokines and other growth factors (PubMed:12764129, PubMed:12855578, PubMed:15322115, PubMed:23940278, PubMed:34508746, PubMed:35568036, PubMed:9724754). Following type I IFN (IFN-alpha and IFN-beta) binding to cell surface receptors, signaling via protein kinases leads to activation of Jak kinases (TYK2 and JAK1) and to tyrosine phosphorylation of STAT1 and STAT2. The phosphorylated STATs dimerize and associate with ISGF3G/IRF-9 to form a complex termed ISGF3

transcription factor, that enters the nucleus (PubMed:28753426, PubMed:35568036). ISGF3 binds to the IFN stimulated response element (ISRE) to activate the transcription of IFN-stimulated genes (ISG), which drive the cell in an antiviral state (PubMed:28753426, PubMed:35568036). In response to type II IFN (IFN-gamma), STAT1 is tyrosine- and serine-phosphorylated (PubMed:26479788). 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 (PubMed:8156998). Becomes activated in response to KITLG/SCF and KIT signaling (PubMed:15526160). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:19088846). Following bacterial lipopolysaccharide (LPS)-induced TLR4 endocytosis, phosphorylated at Thr-749 by IKBKB which promotes binding of STAT1 to the 5'-TTTGAGGC-3' sequence in the ARID5A promoter, resulting in transcriptional activation of ARID5A and subsequent ARID5A-mediated stabilization of IL6 (PubMed:32209697). Phosphorylation at Thr-749 also promotes binding of STAT1 to the 5'-TTTGAGTC-3' sequence in the IL12B promoter and activation of IL12B transcription (PubMed:32209697). Involved in food tolerance in small intestine: associates with the Gasdermin-D, p13 cleavage product (13 kDa GSDMD) and promotes transcription of CIITA, inducing type 1 regulatory T (Tr1) cells in upper small intestine (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply

- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Signal Transducer and Activator of Transcription 1 (STAT1) is a protein of about 91 kDa commonly known simply as STAT1. It belongs to the STAT protein family which is involved in gene regulation. STAT1 expresses widely in many tissues including the immune system where it plays a major role. As an important player in cellular responses to cytokines and growth factors STAT1 becomes activated through phosphorylation often referred to as phospho-STAT1. This phosphorylation promotes dimerization an important step for its function.
Biological function summary	The STAT1 protein influences cell survival and immune responses. It functions as a transcription factor and participates in the interferon signaling pathway. In this setting it forms a complex with other STAT proteins such as STAT2 and STAT3 to regulate gene expression. By binding to specific DNA sequences in the nucleus STAT1 alters transcription in response to extracellular signals. It contributes to antiviral defense mechanisms and antiproliferative activities in various cells.
Pathways	The STAT1 protein plays essential roles in the JAK-STAT signaling pathway and interferon signaling pathway. It operates closely with proteins such as JAK1 and TYK2 which are involved in the phosphorylation process activating STAT1. During this activation STAT1 helps initiate cellular responses to interferons a type of signaling protein released during viral infections. The JAK-STAT pathway facilitates various physiological processes including immune responses and cell growth regulation.
Associated diseases and disorders	STAT1 dysregulation often connects to autoimmune diseases and infectious diseases. Elevated STAT1 activity associates with disorders like systemic lupus erythematosus where an imbalanced immune response occurs. Phosphorylation of STAT1 can also relate to chronic infections in cases where proper immune response activation becomes impaired. In certain cancers STAT1 interaction with proteins like SOCS1 might contribute to tumor immune evasion highlighting its vital role in pathology.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

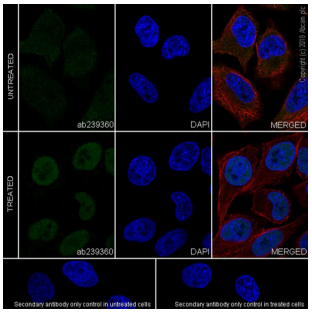
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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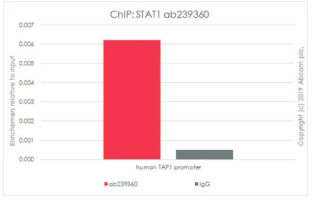
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

STAT1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-STAT1 antibody

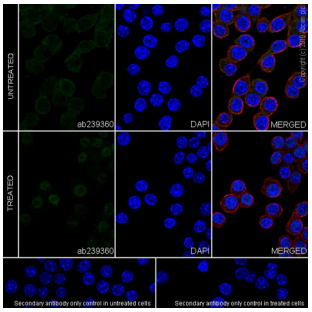
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling STAT1 with ab239360 at 1/50 dilution, followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1\1000 dilution (Green). Confocal image showing the signal translocate to nuclear in HeLa cells treated with IFN-γ (10ng/ml) for 30 mins. ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at 1/1000 dilution.



ChIP - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

Chromatin was prepared from HT-1080 cells treated with IFN-γ (50ng/ml 30min) according to the Abcam Dual-X-ChIP protocol. Cells were fixed with 1.5 mM EGS for 30mins and then formaldehyde for 10min.
The ChIP was performed with 25 µg of chromatin, 5 µg of ab239360 (red), or 5 µg of rabbit normal IgG ab172730 (gray) and 20 µl of Protein A/G sepharose beads. The immunoprecipitated DNA was quantified by real time PCR (Taqman approach for active and inactive loci, Sybr green approach for heterochromatic loci).

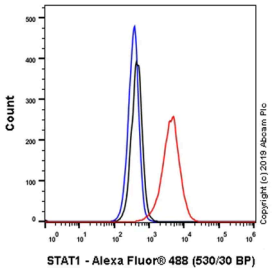
Primers and probes are commercial primers from Cell Signaling Technology (Cat. No.: #5148)



Immunocytochemistry/ Immunofluorescence - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

STAT1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-STAT1 antibody

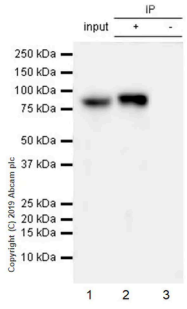
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells labelling STAT1 with ab239360 at 1/50 dilution, followed byab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (Green). Confocal image showing the signal translocate to nuclear in RAW 264.7 cells treated with IFN-γ (10ng/ml) for 30 mins. ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

STAT1 Flow Cytometry (Intracellular) staining using rabbit Anti-STAT1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells labelling STAT1 with ab239360 at 1/600 (Red) compared with a Rabbit monoclonal IgG (ab172730)isotype control (black)and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 was used as the secondary antibody.



Immunoprecipitation - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

STAT1 was immunoprecipitated from 0.35mg RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate with ab239360 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab239360 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate (10ug)

Lane 2: ab239360 IP in RAW264.7 whole cell lysate

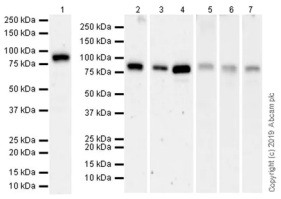
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab239360 in RAW264.7 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 75 seconds.

All lanes:
Immunoprecipitation - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

Predicted band size: 87 kDa



Western blot - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360)

STAT1 Western blot staining using rabbit Anti-STAT1 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Lanes 5-7 were developed using a higher sensitivity ECL substrate.

Exposure time: Lanes 1-4: 3 minutes; Lane 5-7: 48 seconds.

All lanes:
Western blot - Anti-STAT1 antibody [EPR23049-111] - ChIP Grade (ab239360) at 1/1000 dilution

Lane 1:
Human lymph node tissue lysate at 20 µg

Lane 2:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 20 µg

Lane 3:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
MCF7 (human breast adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 5:
Mouse lung tissue lysate at 20 µg

Lane 6:
Mouse breast tissue lysate at 20 µg

Lane 7:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 87 kDa

Observed band size: 88 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.