abcam

ab239811

Anti-STAT2 antibody [Y141] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	Y141
Purification technique	Affinity purification Protein A
Specificity	This antibody detects both long and short forms of STAT2.
Concentration	0.967 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Rat
Dilution info	-

Notes	The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Species	Mouse
Dilution info	-
Notes	The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Species	Human
Dilution info	-
Notes	The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	-
Notes	-

Expected

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

Target data

See full target information 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 (PubMed:23391734, PubMed:9020188). In addition, also has 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 (PubMed:28165510). 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 (PubMed:23391734, PubMed:26122121, PubMed:9020188).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab239811 is the carrier-free version of ab32367.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	The Signal Transducer and Activator of Transcription 2 commonly known as STAT2 is a protein with a molecular mass of approximately 97 kDa. It functions mainly as a transcription factor and is an essential mediator of the interferon (IFN) signaling pathway. STAT2 is expressed in various tissues including immune cells where it responds to external stimuli. It works by translocating to the nucleus upon phosphorylation subsequently influencing the expression of genes involved in immune response.
Biological function summary	Members of the STAT protein family including STAT2 play a central role in mediating immune responses. STAT2 often forms a complex with STAT1 and other proteins such as IRF9 to initiate the transcription of interferon-stimulated genes (ISGs). This complex known as the ISGF3 complex facilitates the cellular response to viral infections by promoting the expression of antiviral proteins that help modify the host cellular environment to resist viral replication.
Pathways	The involvement of STAT2 is closely associated with the JAK-STAT signaling pathway and the interferon signaling pathway. In these pathways it interacts with proteins like JAK1 TYK2 and STAT1 playing a part in transmitting signals from the cell surface to the nucleus. Such pathways are fundamental to regulating the body's immune response to pathogens and managing cell growth and apoptosis in various cells.

Associated diseases and disorders	STAT2 alterations have been linked to autoimmune diseases and viral infections. Disruptions in STAT2 function can impair the body's ability to combat viruses effectively making individuals more susceptible to infections. STAT2 mutations or dysregulations might also connect to disorders like Systemic Lupus Erythematosus where immune system malfunctions occur. The interactions of STAT2 with other proteins like STAT1 and IRF9 in disease contexts underline its importance in maintaining immune system balance.

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

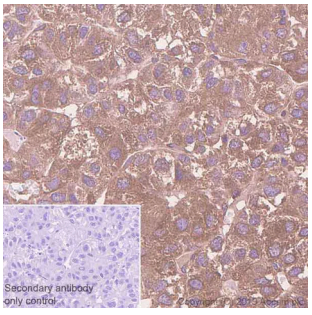
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images



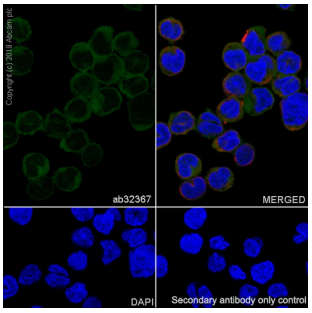
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human hepatocellular carcinoma tissue sections labeling STAT2 with purified ab32367 at 1/100 dilution (6.22 µg/mL). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as

the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

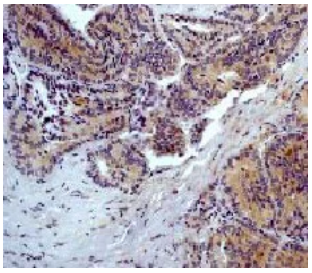
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32367)



Immunocytochemistry/ Immunofluorescence - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-STAT2 antibody

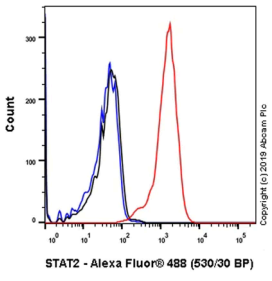
Immunocytochemistry/ Immunofluorescence analysis of THP-1 (Human monocytic leukemia monocyte) cells labeling STAT2 with purified ab32367 at 1/50 dilution (10 µg/mL). Cells were fixed in 100% Methanol. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/mL) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32367).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT2 antibody

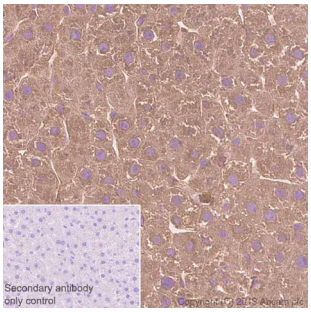
Immunohistochemical analysis of paraffin-embedded human thyroid cancer using ab32367 (unpurified). Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32367).



Flow Cytometry (Intracellular) - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Flow Cytometry (Intracellular) staining using rabbit Anti-STAT2 antibody

Intracellular Flow Cytometry analysis of Ramos (Human Burkitt's lymphoma B lymphocyte) cells labeling STAT2 with purified ab32367 at 1/60 dilution (10µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32367).

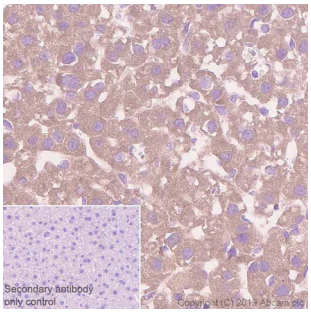


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat liver tissue sections labeling STAT2 with purified ab32367 at 1/100 dilution (6.22 µg/mL). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32367)

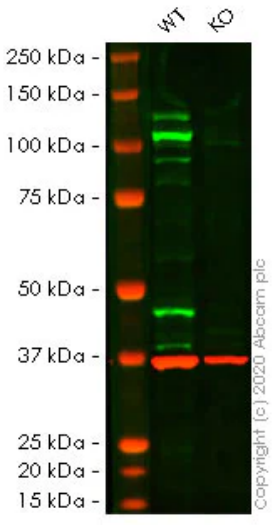


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse liver tissue sections labeling STAT2 with purified ab32367 at 1/100 dilution (6.22 µg/mL). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32367)



Western blot - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Western blot staining using rabbit Anti-STAT2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32367).
Lanes 1- 2: Merged signal (red and green). Green - ab32367 observed at 97 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

ab32367 was shown to react with STAT2 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab261819 (knockout cell lysate ab257182) was used. Wild-type HeLa and STAT2 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab32367 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 5000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-STAT2 antibody [Y141] (ab32367) at 1/5000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

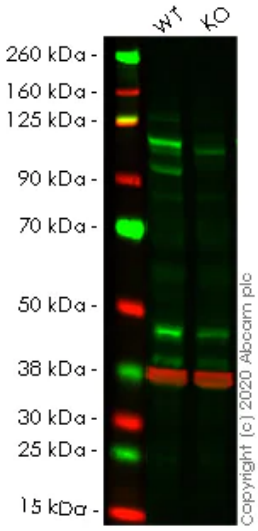
Lane 2:
STAT2 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human STAT2 knockout HeLa cell line (ab261819)

Performed under reducing conditions.

Predicted band size: 97 kDa

Observed band size: 97 kDa



Western blot - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Western blot staining using rabbit Anti-STAT2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32367).
Lanes 1-2: Merged signal (red and green). Green - ab32367 observed at 97 kDa. Red - loading control ab8245 observed at 37 kDa.

ab32367 Anti-STAT2 antibody [Y141] was shown to specifically react with STAT2 in wild-type A549 cells. Loss of signal was observed when knockout cell line ab267006 (knockout cell lysate ab257185) was used. Wild-type and STAT2 knockout samples were subjected to SDS-PAGE. ab32367 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-STAT2 antibody [Y141] (ab32367) at 1/5000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

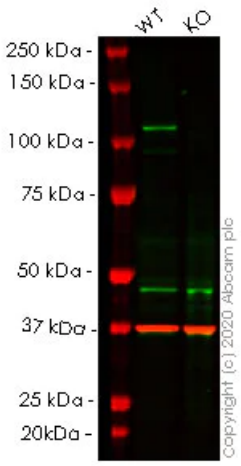
Lane 2:
STAT2 knockout A549 cell lysate at 20 µg

Lane 2:
Western blot - Human STAT2 knockout A549 cell line (ab267006)

Performed under reducing conditions.

Predicted band size: 97 kDa

Observed band size: 97 kDa



Western blot - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Western blot staining using rabbit Anti-STAT2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32367).
Lanes 1- 2: Merged signal (red and green). Green - ab32367 observed at 97 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

ab32367 was shown to react with STAT2 in wild-type A549 cells in western blot. Loss of signal was observed when knockout cell line ab267005 (knockout cell lysate ab257184) was used. Wild-type A549 and STAT2 knockout A549 cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab32367 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 5000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-STAT2 antibody [Y141] (ab32367) at 1/5000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

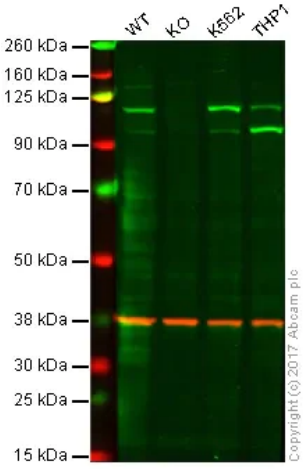
Lane 2:
STAT2 knockout A549 cell lysate at 20 µg

Lane 2:
Western blot - Human STAT2 knockout A549 cell line (ab267005)

Performed under reducing conditions.

Predicted band size: 97 kDa

Observed band size: 97 kDa



Western blot - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Western blot staining using rabbit Anti-STAT2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32367).
Lanes 1 - 4: Merged signal (red and green). Green - ab32367 (unpurified) observed at 97 kDa. Red - loading control, ab9484, observed at 37 kDa.

ab32367 was shown to recognize STAT2 in wild-type HAP1 cells as signal was lost at the expected MW in STAT2 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and STAT2 knockout samples were subjected to SDS-PAGE. ab32367 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/5000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

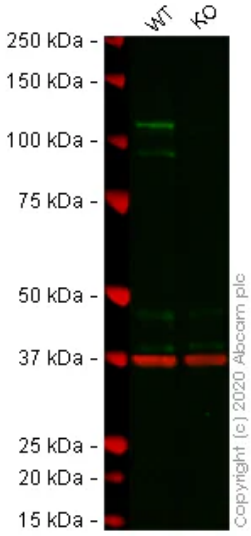
Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
STAT2 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
K562 whole cell lysate at 20 µg

Lane 4:
THP1 whole cell lysate at 20 µg

Predicted band size: 97 kDa



Western blot - Anti-STAT2 antibody [Y141] - BSA and Azide free (ab239811)

STAT2 Western blot staining using rabbit Anti-STAT2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32367).
Lanes 1 - 2: Merged signal (red and green). Green - ab32367 observed at 97 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

ab32367 was shown to react with STAT2 in A549 wild-type cells in western blot with loss of signal observed in STAT2 knockout cell line ab267004 (STAT2 knockout cell lysate ab257183). Wild-type and STAT2 knockout A549 cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% Milk before incubation with ab32367 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4 °C at a 1 in 5000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-STAT2 antibody [Y141] (ab32367) at 1/5000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
Western blot - Human STAT2 knockout A549 cell lysate (ab257183) at 20 µg

Performed under reducing conditions.

Predicted band size: 97 kDa

Observed band size: 97 kDa

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