abcam

ab171358

Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP2147Y
Purification technique	Affinity purification Protein A
Concentration	1.008 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	Stimulation may be required to allow detection of the phosphorylated protein. Please see images below for recommended treatment conditions and positive controls.

Expected

Species	Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

ELISA

Not recommended

Species	Human, Mouse, Rat, Synthetic peptide - Human
Dilution info	-
Notes	-

Target data

See full target information STAT3 pY705

Function	Signal transducer and transcription activator that mediates cellular responses to interleukins, KITLG/SCF, LEP and other growth factors (PubMed:10688651, PubMed:12359225, PubMed:12873986, PubMed:15194700, PubMed:15653507, PubMed:16285960, PubMed:17344214, PubMed:18242580, PubMed:18782771, PubMed:22306293, PubMed:23084476, PubMed:28262505, PubMed:32929201, PubMed:38404237). Once activated, recruits coactivators, such as NCOA1 or MED1, to the promoter region of the target gene (PubMed:15653507, PubMed:16285960, PubMed:17344214, PubMed:18782771, PubMed:28262505, PubMed:32929201). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:12873986). Upon activation of IL6ST/gp130 signaling by interleukin-6 (IL6), binds to the IL6-responsive elements identified in the promoters of various acute-phase protein genes (PubMed:12359225). Activated by IL31 through IL31RA (PubMed:15194700). Acts as a regulator of inflammatory response by regulating differentiation of naive CD4(+) T-cells into T-helper Th17 or regulatory T-cells (Treg): acetylation promotes its transcription activity and cell differentiation while deacetylation and oxidation of lysine residues by LOXL3 inhibits differentiation (PubMed:28065600, PubMed:28262505). Involved in cell cycle regulation by inducing the expression of key genes for the progression from G1 to S phase, such as CCND1 (PubMed:17344214). Mediates the effects of LEP on melanocortin production, body energy homeostasis and lactation (By similarity). May play an apoptotic role by transctivating BIRC5 expression under LEP activation (PubMed:18242580). Cytoplasmic STAT3 represses macroautophagy by inhibiting EIF2AK2/PKR activity (PubMed:23084476). Plays a crucial role in basal beta cell functions, such as regulation of insulin secretion (By similarity). Following JAK/STAT signaling activation and as part of a complex with NFATC3 and NFATC4, binds to the alpha-beta E4 promoter region of CRYAB and activates transcription in cardiomyocytes (By similarity).

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

ab171358 is the carrier-free version of ab76315.

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	Signal Transducer and Activator of Transcription 3 (STAT3) also called p-stat3 or phospho-STAT3 is a critical transcription factor involved in various cellular processes. The molecular weight of STAT3 is approximately 92 kDa. This protein is expressed broadly across many tissues and cell types. Mechanically upon cytokine or growth factor stimulation STAT3 undergoes phosphorylation resulting in dimerization. This phosphorylated form often referred to as phospho-Stat3 or p-STAT3 translocates to the nucleus where it binds specific DNA sequences to modulate gene transcription.
Biological function summary	STAT3 is an important player in regulating cell growth and apoptosis. It functions not only as a transcription factor but also as part of a larger protein complex that operates within the cell nucleus to influence gene expression. This multifaceted role enables STAT3 to control the expression of genes related to cell proliferation survival and differentiation impacting various biological processes. These functions highlight its importance in tissue homeostasis and response to extracellular signals.
Pathways	STAT3 is actively involved in the JAK-STAT signaling pathway a principal route for many cytokines and growth factors and the MAPK pathway. STAT3 interacts with proteins such as JAK kinases which phosphorylate Stat3 and initiate the STAT3 signaling cascade. Additionally it closely associates with the protein Raf1 in the MAPK pathway linking external signals to transcriptional responses. These pathways play a significant role in immune response inflammation and growth signaling.
Associated diseases and disorders	Researchers have implicated STAT3 in cancer and autoimmune diseases. Persistent activation of STAT3 is often observed in various cancers including breast and lung cancer promoting oncogenesis through altered gene expression. Additionally abnormal STAT3 signaling is associated with autoimmune conditions such as

rheumatoid arthritis. The interplay between STAT3 and proteins like IL-6 in these diseases highlights its potential as a therapeutic target for intervention.

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

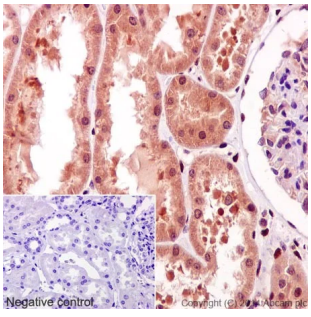
We do not recommend this combination. It is not covered by our product promise.

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.

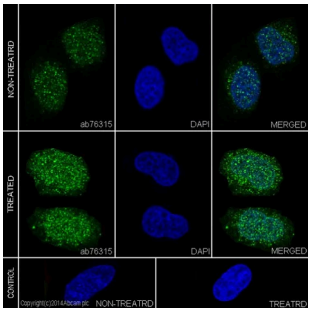
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

STAT3 (phospho Y705) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT3 (phospho Y705) antibody

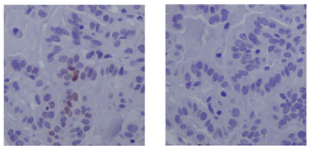
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue labeling STAT3 (phospho Y705) with purified ab76315 at 1/100. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76315).



Immunocytochemistry/ Immunofluorescence - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

STAT3 (phospho Y705) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-STAT3 (phospho Y705) antibody

This ICC/IF data was generated using the same anti-phospho STAT3 Y705 antibody clone, EP2147Y, in a different buffer formulation (cat# ab76315).
Immunocytochemistry/Immunofluorescence analysis of HeLa +/- IFN-α (50ng/mL, 5 minutes) cells labelling STAT3 (phospho Y705) with ab76315 at 1/500 (4.3 µg/mL). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1500) was used as the secondary antibody. DAPI (blue) was used as a nuclear counterstain.



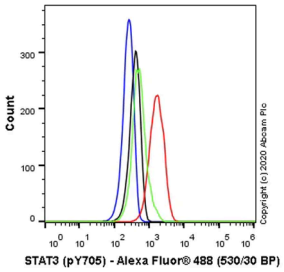
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

STAT3 (phospho Y705) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT3 (phospho Y705) antibody

Immunohistochemical analysis of paraffin-embedded human thyroid carcinoma tissue using untreated (left) or alkaline phosphatase-treated (right) labeling STAT3 (phospho Y705) with ab76315 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H& L (HRP) (ab97051) at 1/500 dilution.
Counter stained with Hematoxylin.

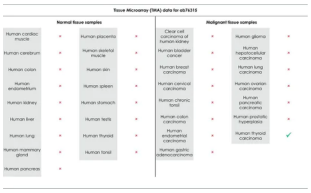
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76315).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

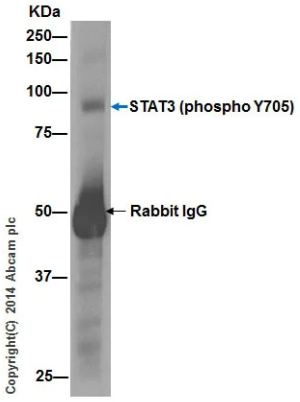
This data was developed using ab76315, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized A431 (Human epidermoid carcinoma epithelial cell) treated with 100ng/mL EGF for 10min (Red) / Untreated control (Green) cells labelling STAT3 with ab76315 at 1/500 dilution (0.1µg) (Red) and Green compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control 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 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

Tissue Microarrays stained for "Anti-STAT3 (phospho Y705) antibody [EP2147Y]" using "ab76315"in immunohistochemical analysis. This table provides a detailed overview of positive (tick mark) and negative (cross mark) staining per sample type tested. The sections were pre-treated using Heat

mediated antigen retrieval using ab97051 (Tris/EDTA buffer, pH 9.0). The sections were incubated with ab76315 at +4°C overnight followed by Goat Anti-Rabbit IgG H&L (HRP) ab97051 at 1/500.



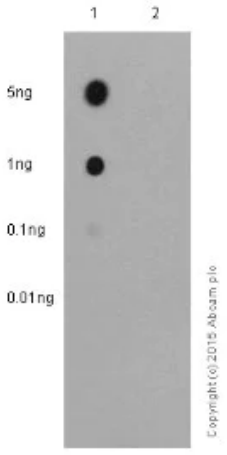
Immunoprecipitation - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

ab76315 (purified) at 1/30 immunoprecipitating STAT3 (phospho Y705) in A431 (Human epidermoid carcinoma cell line) cell lysate treated with EGF. For western blotting, a peroxidase-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/1000). Blocking/Dilution buffer: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76315).

All lanes:
Immunoprecipitation - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

Predicted band size: 88 kDa



Dot Blot - Anti-STAT3 (phospho Y705) antibody [EP2147Y] - BSA and Azide free (ab171358)

Dot blot analysis of STAT3 single phospho peptide pY705 (lane 1) and STAT3 non-phospho peptide (lane 2) with ab76315 at 1/1000. Blocking and dilution buffer was 5% NFDM/TBST. The secondary antibody used was ab97051 peroxidase conjugated Goat Anti-Rabbit IgG, (H+L) at 1/100,000.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76315).

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