abcam

Product datasheet

Anti-STAT3 (phospho Y705) antibody [EP2147Y] ab76315

Recombinant RabMAb

8 Abreviews 56 References 7 Images

Overview

Product name	Anti-STAT3 (phospho Y705) antibody [EP2147Y]
Description	Rabbit monoclonal [EP2147Y] to STAT3 (phospho Y705)
Tested applications	**Suitable for:** WB, IP, IHC-P, ICC/IF
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide (the amino acid sequence is considered to be commercially sensitive) corresponding to Human STAT3 aa 650-750 (phospho Y705). Database link: P40763 (Peptide available as ab179551)
Positive control	WB: HeLa cell lysate treated with alpha-interferon. IHC-P: Human colon adenocarcinoma and kidney tissues. IP: A431 cells treated with EGF.
General notes	A trial size is available to purchase for this antibody. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMab® patents **We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.** This product is a recombinant rabbit monoclonal antibody.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified

Clonality	Monoclonal
Clone number	EP2147Y
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab76315** 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	★★★★☆	1/2000 - 1/20000. Predicted molecular weight: 88 kDa.Can be blocked with STAT3 (phospho Y705) peptide (ab179551).
IP		1/20.
IHC-P	★★★★★	1/50 - 1/100. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. See protocols (link: http://www.abcam.com/protocols/ihc-antigen-retrieval-protocol).
ICC/IF		1/500.

Target

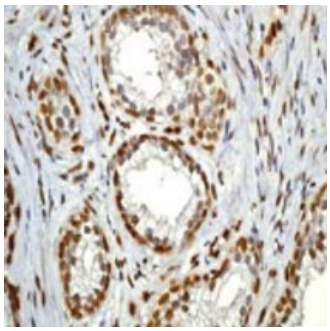
Function	Signal transducer and transcription activator that mediates cellular responses to interleukins, KITLG/SCF, LEP and other growth factors. Once activated, recruits coactivators, such as NCOA1 or MED1, to the promoter region of the target gene (PubMed:17344214). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4. Binds to the interleukin-6 (IL-6)-responsive elements identified in the promoters of various acute-phase protein genes. Activated by IL31 through IL31RA. 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.
Tissue specificity	Heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas.
Involvement in disease	Hyperimmunoglobulin E recurrent infection syndrome, autosomal dominant Autoimmune disease, multisystem, infantile-onset
Sequence similarities	Belongs to the transcription factor STAT family. Contains 1 SH2 domain.
Post-translational modifications	Tyrosine phosphorylated upon stimulation with EGF. Tyrosine phosphorylated in response to constitutively activated FGFR1, FGFR2, FGFR3 and FGFR4 (By similarity). Activated through tyrosine phosphorylation by BMX. Tyrosine phosphorylated in response to IL6, IL11, LIF, CNTF, KITLG/SCF, CSF1, EGF, PDGF, IFN-alpha, LEP and OSM. Activated KIT promotes phosphorylation on tyrosine residues and subsequent translocation to the nucleus. Phosphorylated on serine upon DNA damage, probably by ATM or ATR. Serine phosphorylation is important for the formation of stable DNA-binding STAT3 homodimers and maximal transcriptional activity. ARL2BP may participate in keeping the phosphorylated state of STAT3

within the nucleus. Upon LPS challenge, phosphorylated within the nucleus by IRAK1. Upon erythropoietin treatment, phosphorylated on Ser-727 by RPS6KA5. Phosphorylation at Tyr-705 by PTK6 or FER leads to an increase of its transcriptional activity. Dephosphorylation on tyrosine residues by PTPN2 negatively regulates IL6/interleukin-6 signaling.

Cellular localization

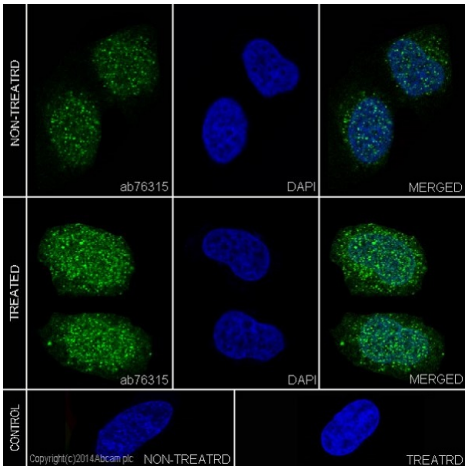
Cytoplasm. Nucleus. Shuttles between the nucleus and the cytoplasm. Translocated into the nucleus upon tyrosine phosphorylation and dimerization, in response to signaling by activated FGFR1, FGFR2, FGFR3 or FGFR4. Constitutive nuclear presence is independent of tyrosine phosphorylation. Predominantly present in the cytoplasm without stimuli. Upon leukemia inhibitory factor (LIF) stimulation, accumulates in the nucleus. The complex composed of BART and ARL2 plays an important role in the nuclear translocation and retention of STAT3. Identified in a complex with LYN and PAG1.

Images



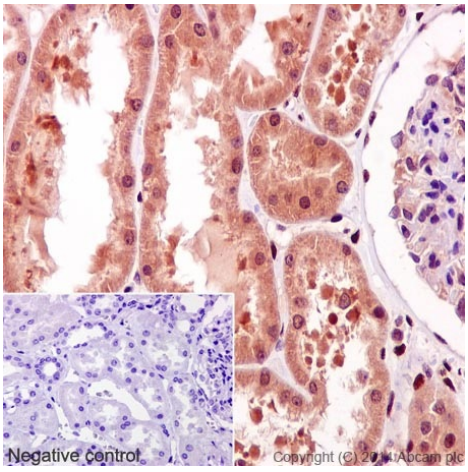
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon carcinoma tissue labelling STAT3 (phospho Y705) with unpurified ab76315 at 1/100.



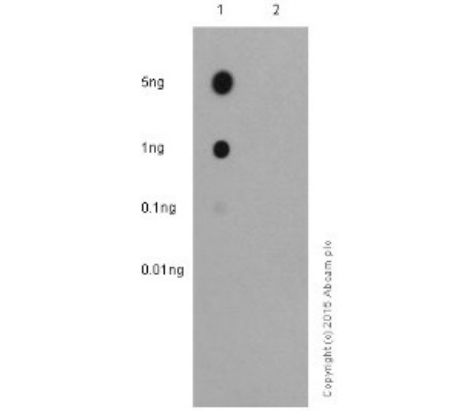
Immunocytochemistry/ Immunofluorescence - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

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.



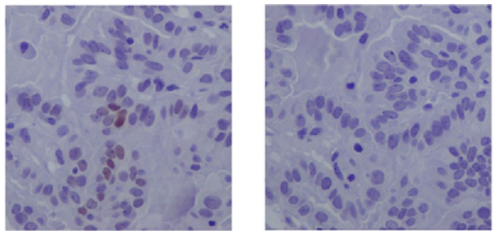
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue labelling 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.



Dot Blot - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

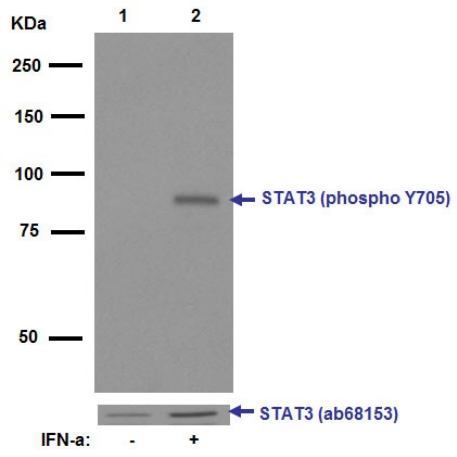
Dot blot analysis of STAT3 single phospho peptide pY705 (lane 1) and STAT3 non-phospho peptide (lane 2) with ab76315 at 1/1000. Blocking and diluting buffer was 5% NFDM/TBST. The secondary antibody used was ab97051 Peroxidase conjugated Goat Anti-Rabbit IgG, (H+L) at 1/100,000.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

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.



Western blot - Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315)

All lanes : Anti-STAT3 (phospho Y705) antibody [EP2147Y] (ab76315) at 1/20000 dilution (purified)

Lane 1 : HeLa cell lysate - untreated
Lane 2 : HeLa cell lysate - treated with IFN-a

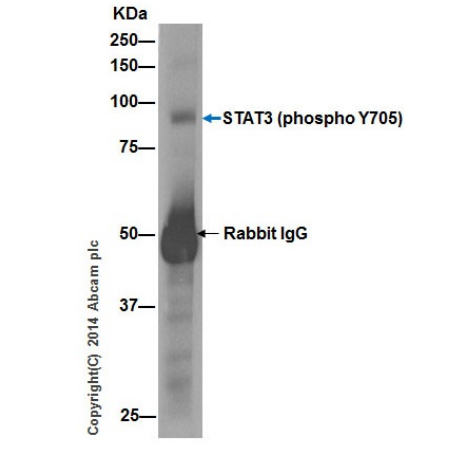
Lysates/proteins at 10 µg per lane.

Secondary
Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size : 88 kDa
Observed band size : 88 kDa

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.



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

ab76315 (purified) at 1/30 immunoprecipitating STAT3 (phospho Y705) in A431 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 buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

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