abcam

ab178941

Anti-STAT5b antibody [EPR16671]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR16671
Purification technique	Affinity purification Protein A
Specificity	This antibody shows no cross reactivity with STAT5a.
Concentration	0.511 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/40
Notes	-

Expected

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

ChIP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000 - 1/5000
Notes	-

Species	Mouse
Dilution info	1/5000
Notes	-

Species	Rat
Dilution info	1/5000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/40
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Rat

Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Target data

See full target information STAT5B

Function	Carries out a dual function: signal transduction and activation of transcription (PubMed:29844444). Mediates cellular responses to the cytokine KITLG/SCF and other growth factors. Binds to the GAS element and activates PRL-induced transcription. Positively regulates hematopoietic/erythroid differentiation.

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	STAT5b also known as Signal Transducer and Activator of Transcription 5B is a 92-kDa protein involved in signaling processes within the cell. Mechanically it functions as a transcription factor and shuttles between the cytoplasm and nucleus modulating gene expression according to extracellular signals. Upon cytokine binding STAT5b undergoes phosphorylation allowing it to form dimers and translocate to the nucleus. It is expressed in many tissues including the liver immune cells and mammary glands reflecting its role in diverse physiological processes.
Biological function summary	STAT5b plays an important role in regulating cell growth differentiation and apoptosis. It often acts as part of the STAT protein family binding to specific DNA sequences to activate transcription. STAT5b particularly influences immune function and hematopoiesis driving proliferation and differentiation of lymphoid and myeloid cells. Its activity affects glucose homeostasis growth hormone signaling and lactation highlighting its importance in various physiological states and developmental processes.
Pathways	STAT5b integrates into the JAK-STAT signaling pathway a critical route for conveying extracellular information to the nucleus. This pathway includes JAK kinases which activate STAT5b by phosphorylation upon cytokine-receptor engagement. STAT5b also participates in the growth hormone pathway interacting with proteins such as Growth Hormone Receptor and other STAT family members like STAT3. Through these interactions STAT5b helps regulate gene expression associated with growth and differentiation in response to hormonal signals.
Associated diseases and disorders	STAT5b links to several conditions such as growth hormone insensitivity and leukemia. In growth disorders defects in STAT5b can impair normal growth hormone signal transduction often involving interplay with proteins like the Growth Hormone Receptor. In leukemias aberrant activation or expression of STAT5b contributes to uncontrolled cellular proliferation often accompanied by deregulation of the JAK-STAT pathway. Research into STAT5b offers insights into potential therapeutic targets for these and other related conditions.

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.

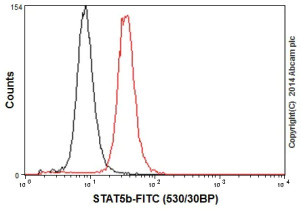
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

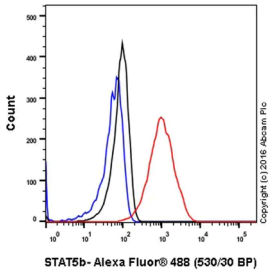
18 product images



Flow Cytometry (Intracellular) - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Flow Cytometry (Intracellular) staining using rabbit Anti-STAT5b antibody

Intracellular Flow Cytometry analysis of 2% paraformaldehyde K562 (Human chronic myelogenous leukemia cells from bone marrow) cellslabeling STAT5b with ab178941 at 1/60 dilution (red line). Secondary antibody used is a goat anti rabbit IgG (FITC) at 1/150 dilution. The isotype control is rabbit monoclonal IgG (black line).

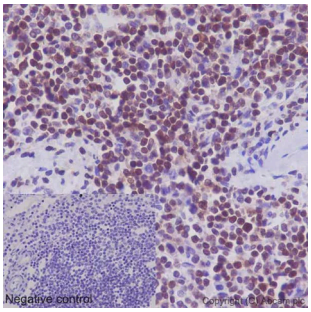


Flow Cytometry (Intracellular) - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Flow Cytometry (Intracellular) staining using rabbit Anti-STAT5b antibody

ab178941 staining STAT5bin the human cell line HeLa (human cervix adenocarcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and the sample was incubated with the primary antibody at a dilution of 1/40. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

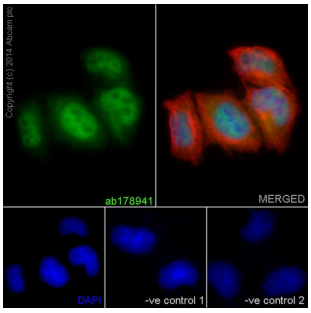
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT5b antibody

Immunohistochemical analysis of paraffin-embedded Human spleen tissue labeling STAT5b with ab178941 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Nucleus staining on lymphocytes of Human spleen is detected. The negative control utilised PBS instead of primary antibody. Counter stained with Hematoxylin.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



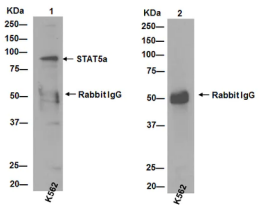
Immunocytochemistry/ Immunofluorescence - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-STAT5b antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling STAT5b with ab178941 at 1/100 dilution. The cells were permeabilised with 0.1% Triton X-100. Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/200 dilution was used as the secondary antibody (green). Nuclear and cytoplasm staining is detected. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (Tubulin mouse mAb) at 1/500 and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/400 dilution (red).

The negative controls are as follows;

1. ab178941 at 1/100 dilution followed by Goat anti mouse IgG (Alexa Fluor®594) at 1/400 dilution.
2. ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by Goat anti rabbit IgG (Alexa Fluor®488) ar 1/200 dilution.



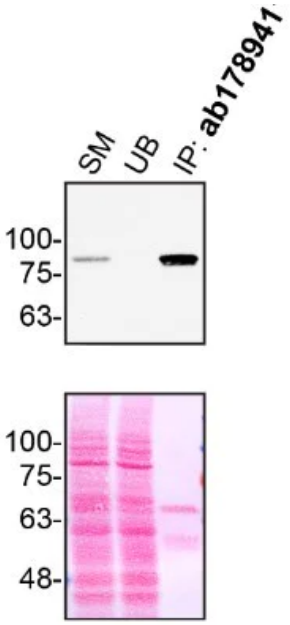
Immunoprecipitation - Anti-STAT5b antibody [EPR16671] (ab178941)

Cross Immunoprecipitation of K562 (Human chronic myelogenous leukemia cells from bone marrow) whole cell extract showing no cross reactivity with STAT5a. Protein captured by anti-STAT5a antibody (ab32042) was detected by the same antibody in WB (image 1) but not by anti-STAT5b, ab178941 (image 2).

For WB detection, ab178941 was used at a 1/2000 dilution and Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated secondary antibody at a 1/1000 dilution. The blocking and dilution buffer was 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-STAT5b antibody [EPR16671] (ab178941)

Predicted band size: 89 kDa



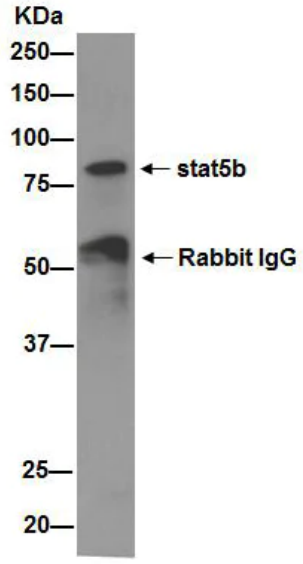
Immunoprecipitation - Anti-STAT5b antibody [EPR16671] (ab178941)

Immunoprecipitation of STAT5B in HAP1 cells. Lysates were prepared and immunoprecipitation was performed using 2.0 µg of ab178941 pre-coupled to Protein A beads. Samples were washed and processed for western blot with STAT5 beta Monoclonal Antibody at 1/200

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
STAT5 beta Monoclonal Antibody at 1/200 dilution

All lanes:
HAP1 cells

Observed band size: 89 kDa

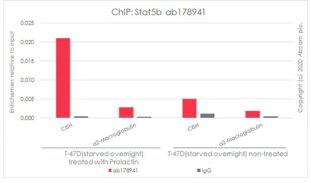


Immunoprecipitation - Anti-STAT5b antibody [EPR16671] (ab178941)

Immunoprecipitation of K562 (Human chronic myelogenous leukemia cells from bone marrow) whole cell extract using ab178941 at 1/40 dilution. Western blot detection of STAT5b utilised ab178941 at 1/2000 dilution and Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated secondary antibody at 1/1000 dilution. The blocking and dilution buffer was 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-STAT5b antibody [EPR16671] (ab178941)

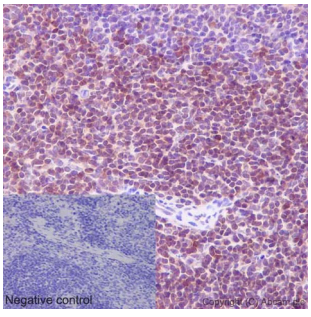
Predicted band size: 89 kDa

Observed band size: 90 kDa



ChIP - Anti-STAT5b antibody [EPR16671] (ab178941)

Chromatin was prepared from T-47D (starved overnight) treated with Prolactin(10nM 30min) and T-47D(starved overnight) non-treated cells 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 ab178941 (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 (Sybr green approach).
Primers are from PMID: 15686596.

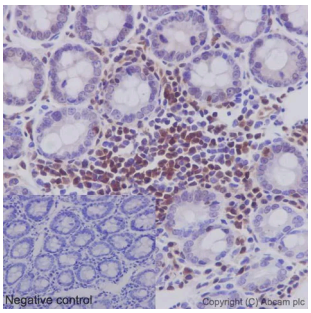


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT5b antibody

Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labeling STAT5b with ab178941 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Nucleus

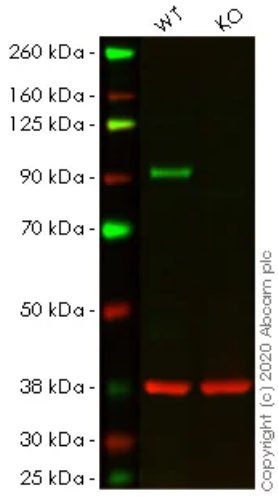
staining on lymphocytes of Mouse spleen is detected. The negative control utilised PBS instead of primary antibody. Counter stained with Hematoxylin.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STAT5b antibody

Immunohistochemical analysis of paraffin-embedded Rat colon tissue labeling STAT5b with ab178941 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Nucleus staining on lymphocytes and weak nucleus staining on gland epithelium of colon is detected. The negative control utilised PBS insead of primary antibody and the slide is counter stained with Hematoxylin.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Western blot staining using rabbit Anti-STAT5b antibody

Lanes 1-2: Merged signal (red and green). Green - ab178941 observed at 90 kDa. Red - loading control ab8245 observed at 37 kDa.
ab178941 Anti-STAT5b antibody [EPR16671] was shown to specifically react with STAT5b in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab266006 (knockout cell lysate ab257710) was used. Wild-type and STAT5b knockout samples were subjected to SDS-PAGE. ab178941 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 20000 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-STAT5b antibody [EPR16671] (ab178941) at 1/20000 dilution

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

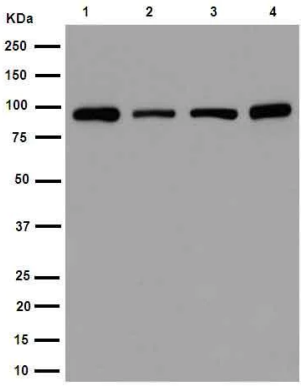
Lane 2:
STAT5B knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human STAT5B knockout HeLa cell line (ab266006)

Performed under reducing conditions.

Predicted band size: 89 kDa

Observed band size: 90 kDa



Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Western blot staining using rabbit Anti-STAT5b antibody

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/20000 dilution

Lane 1:
K562 (Human chronic myelogenous leukemia cells from bone marrow) whole cell lysates at 20 µg

Lane 2:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysates at 20 µg

Lane 3:
Jurkat (Human T cell leukemia cells from peripheral blood) whole cell lysates at 20 µg

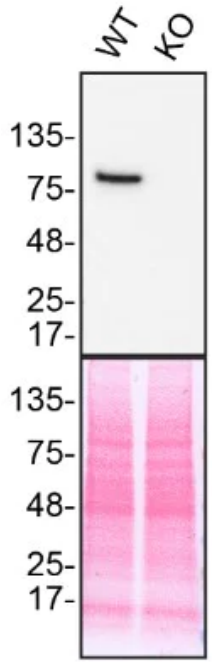
Lane 4:
Daudi (Human Burkitt's lymphoma cell line) whole cell lysates at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 89 kDa

Observed band size: 90 kDa



Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

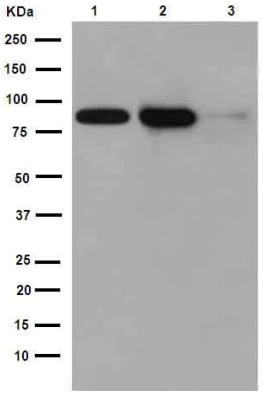
ab178941 was shown to react with STAT5B in wild-type HAP1 cells in Western blot with loss of signal observed in a STAT5B knockout cell line. Wild-type HAP1 and STAT5B knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab178941 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with secondary antibodies at 0.2ug/mL before imaging.

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/1000 dilution

Lane 1:
Wild-type HAP1 lysate at 20 µg

Lane 2:
STAT5B knock-out HAP1 lysate at 20 µg

Observed band size: 89 kDa



Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/20000 dilution

Lane 1:
Human fetal heart lysates at 20 µg

Lane 2:
Human fetal kidney lysates at 20 µg

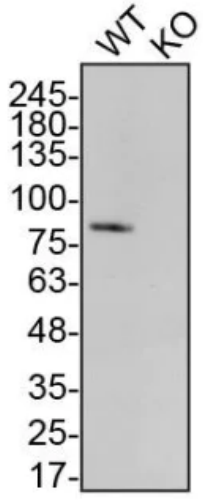
Lane 3:
Human fetal spleen lysates at 20 µg

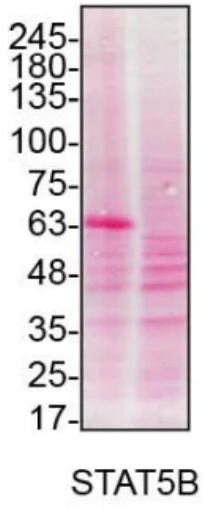
Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 89 kDa

Observed band size: 90 kDa





Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Western blot staining using rabbit Anti-STAT5b antibody

ab178941 was shown to react with STAT5B in wild-type HeLa cells in Western blot with loss of signal observed in STAT5B knockout cell line ab266006 (STAT5B knockout cell lysate ab257710). Wild-type HeLa and STAT5B knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab178941 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with goat anti-rabbit HRP secondary antibodies at 0.2µg/mL before imaging.
These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.

All lanes:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/1000 dilution

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

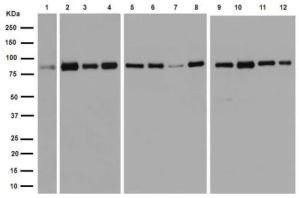
Lane 2:
STAT5B knockout HeLa cell lysate at 20 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 0.2 µg/mL

Performed under reducing conditions.

Predicted band size: 89 kDa



Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Western blot staining using rabbit Anti-STAT5b antibody

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/5000 dilution

Lane 1:
Mouse brain lysates at 10 µg

Lane 2:
Mouse heart lysates at 10 µg

Lane 3:
Mouse kidney lysates at 10 µg

Lane 4:
Mouse spleen lysates at 10 µg

Lane 5:
Rat brain lysates at 10 µg

Lane 6:
Rat heart lysates at 10 µg

Lane 7:
Rat kidney lysates at 10 µg

Lane 8:
Rat spleen lysates at 10 µg

Lane 9:
C6 (Rat glial tumor cells) whole cell lysates at 10 µg

Lane 10:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysates at 10 µg

Lane 11:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysates at 10 µg

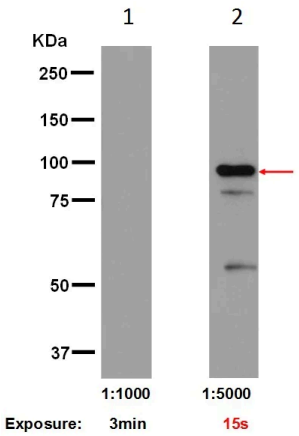
Lane 12:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysates at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 89 kDa

Observed band size: 90 kDa



Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

WB showing no cross reactivity with STAT5a.
Lane 1:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/1000 dilution

Lane 2:
Western blot - Anti-STAT5b antibody [EPR16671] (ab178941) at 1/5000 dilution

All lanes:
STAT5a recombinant protein

Developed using the ECL technique.

Predicted band size: 89 kDa

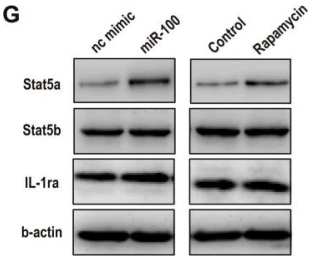


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-STAT5b antibody [EPR16671] (ab178941)

STAT5b Western blot staining using rabbit Anti-STAT5b antibody

STAT5b western blot using anti-STAT5b antibody [EPR16671] ab178941. Publication image and figure legend from Wang, W., Liu, Y., et al., 2018, Oncogenesis, PubMed 30563983.

ab178941 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab178941 please see the product overview.

miR-100 increases IL-1ra secretion through stat5a-mediated transcriptional regulation.a Supernatants of RAW264.7 cells transfected with miR-100 mimic and nc mimic were collected and secreted cytokines were measured by the mouse cytokine array panel. b IL-1ra mRNA expression was measured by qPCR in miR-100 mimic transfected RAW264.7 cells. c IL-1ra+ cells percentage in PMs transfected with miR-100 mimic were measured by flow cytometry. d IL-1ra expression in miR-100 antagomir-treated 4T1 mouse breast cancer tissues was detected by ELISA. e, f qPCR and Western blot to detect IL-1ra expression in RAW264.7 cells transfected with siRNAs targeting several candidate TFs. g Western blot to detect Stat5a and Stat5b expression in RAW264.7 cells transfected with miR-100 mimic or treated with rapamycin. h Stat5a binding sites were predicted by ALLGEN database in IL-1ra promoter region from -3k to +1k. i Three stat5a binding sites were validated by qPCR in genomic DNA extracted from RAW264.7 cells. Data were shown as mean ± s.e.m. from three independent experiments; **p < 0.01, *p < 0.05

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