abcam

ab92446

Anti-SATB2 antibody [EPNCIR130A]

Anti-SATB2 antibody [EPNCIR130A] (ab92446) is a rabbit monoclonal antibody detecting SATB2 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 70 publications
- Trusted since 2010

Recombinant | RabMAb | KO Validated | 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	EPNCIR130A
Purification technique	Affinity purification Protein A
Concentration	1.499 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/150 - 1/300
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

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

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

Species	Human
Dilution info	1/1000 - 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	1/1000
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information SATB2

Function Binds to DNA, at nuclear matrix- or scaffold-associated regions. Thought to recognize the sugar-phosphate structure of double-stranded DNA. Transcription factor controlling nuclear gene expression, by binding to matrix attachment regions (MARs) of DNA and inducing a local chromatin-loop remodeling. Acts as a docking site for several chromatin remodeling enzymes and also by recruiting corepressors (HDACs) or coactivators (HATs) directly to promoters and enhancers. Required for the initiation of the upper-layer neurons (UL1) specific genetic program and for the inactivation of deep-layer neurons (DL) and UL2 specific

genes, probably by modulating BCL11B expression. Repressor of Ctip2 and regulatory determinant of corticocortical connections in the developing cerebral cortex. May play an important role in palate formation. Acts as a molecular node in a transcriptional network regulating skeletal development and osteoblast 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	Stable for 12 months at -20°C

Notes

This antibody was developed as part of a collaboration between Epitomics, the National Cancer Institute's Center for Cancer Research and the lab of John Niederhuber. View antibodies from NCI Center for Cancer Research Collaboration.

Product Specifications
Anti-SATB2 antibody [EPNCIR130A] (ab92446) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P, WB in human, mouse, rat samples.
Anti-SATB2 antibody [EPNCIR130A] (ab92446) specifically detects SATB2 (UniProt ID: Q9UPW6; Molecular weight: 83kDa) and is sold in 100 µL and 1 mL selling sizes.

Quality and Validation
Abcam's high quality manufacturing and validation processes ensure Anti-SATB2 antibody [EPNCIR130A] (ab92446) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.
The specificity of Anti-SATB2 antibody [EPNCIR130A] (ab92446) has been confirmed by testing in knockout samples.
Anti-SATB2 antibody [EPNCIR130A] (ab92446) has been cited over 73 times in peer reviewed journals and is trusted by the scientific community.
Anti-SATB2 antibody [EPNCIR130A] (ab92446) has 8 independent reviews from customers.

Related Products
Antibody clone EPNCIR130A is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 647, Alexa Fluor® 594, APC, PE (ab196536, ab207040, ab225051, ab225052).

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	The SATB2 protein also known as Special AT-rich Sequence-Binding Protein 2 is a DNA-binding protein with a mass of about 82 kDa. It plays a role in chromatin organization and transcriptional regulation by binding to AT-rich sequences within the nuclear matrix. SATB2 shows high expression levels in the cerebral cortex and the bone where it influences gene expression. It functions by facilitating the assembly of transcriptional machineries enhancing or repressing the transcription of its target genes.
Biological function summary	SATB2 acts as a regulator of multiple developmental processes. It serves as a master control gene in osteoblast differentiation and skeletal development by forming complexes with core binding factors. In the brain SATB2 contributes to the development and maintenance of neuronal networks that are essential for cognitive functions. Its binding to matrix attachment regions aids in the spatial organization of nuclear chromatin impacting gene expression pertinent to development and differentiation.
Pathways	SATB2 operates within the Wnt signaling pathway and the regulation of osteoblast differentiation. It interacts with proteins such as RUNX2 and β-catenin which play roles in bone formation and homeostasis. Within these pathways SATB2 modulates gene networks that influence the expression of structural and signaling proteins important for tissue differentiation and repair particularly in bone and neuronal contexts.
Associated diseases and disorders	SATB2 has associations with cleft palate and intellectual disabilities conditions often related to alterations in craniofacial and neurological development. It interacts with proteins like SOX9 and TCF7L1 which have roles in developmental processes that when disrupted can lead to such conditions. Understanding SATB2's involvement in these disorders provides insights into potential therapeutic targets for interventions aiming to mitigate developmental abnormalities.

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

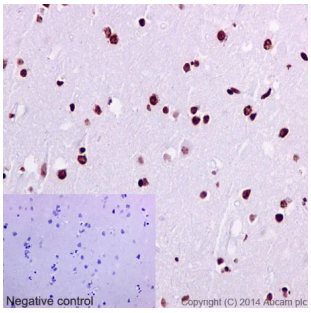
We do not recommend this combination. It is not covered by our product promise.

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.

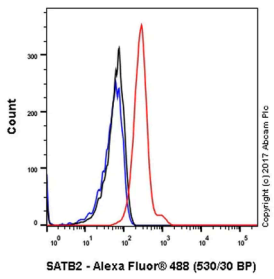
12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

SATB2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SATB2 antibody

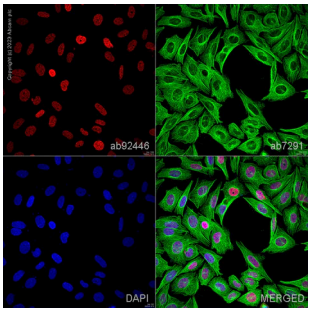
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cerebral cortex tissue labelling SATB2 with purified ab92446 at 1/150. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



Flow Cytometry (Intracellular) - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

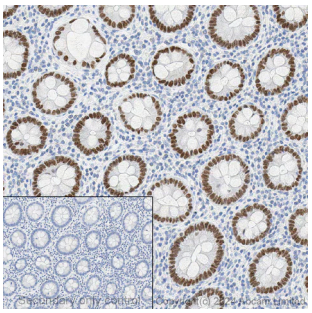
SATB2 Flow Cytometry (Intracellular) staining using rabbit Anti-SATB2 antibody

Intracellular Flow Cytometry analysis of SH-SY5Y cells (human neuroblastoma cell line from bone marrow) labeling SATB2 with purified ab92446 at 1/150 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) (ab172730) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Immunocytochemistry/ Immunofluorescence - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

Immunocytochemistry/Immunofluorescence analysis of Saos-2 cells (human osteosarcoma cell line) labelling SATB2 (red) with purified ab92446 at 1/100 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150083, an Alexa Fluor® 647-conjugated goat anti-rabbit IgG H&L (1/1000), was used as the secondary antibody. Tubulin (green) was stained with ab7291, an anti-alpha tubulin antibody (1/1000). DAPI (blue) was used as the nuclear counterstain.

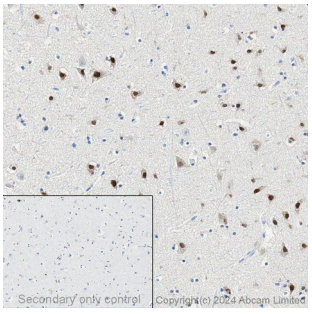


Immunohistochemistry - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

Immunohistochemical analysis of formalin fixed paraffin embedded human colon labelling SATB2 with ab92446 at a concentration of 2µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH 8.5 for 56mins.

ab92446 anti-SATB2 [EPNCIR130A] was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).

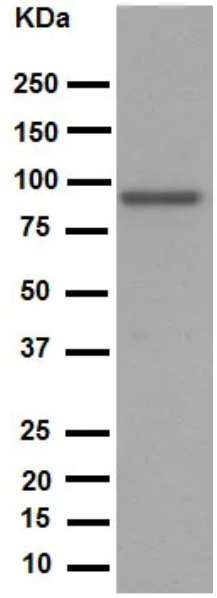


Immunohistochemistry - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

Immunohistochemical analysis of formalin fixed paraffin embedded human cortex labelling SATB2 with ab92446 at a concentration of 2 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH 8.5 for 56 mins.

ab92446 anti-SATB2 [EPNCIR130A] was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

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

All lanes:
Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446) at 1/1000 dilution

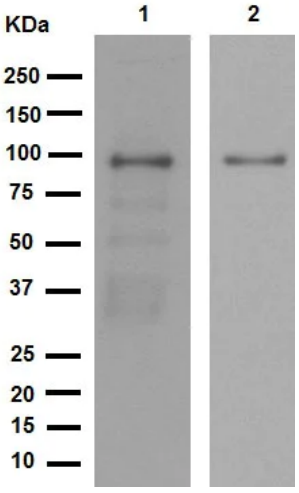
All lanes:
SW1353 (human chondrosarcoma cell line) cell lysate at 20 µg

Secondary

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

Predicted band size: 83 kDa

Observed band size: 83 kDa



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

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

All lanes:
Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446) at 1/1000 dilution

Lane 1:
Saos-2 (human osteosarcoma cell line) cell lysate at 20 µg

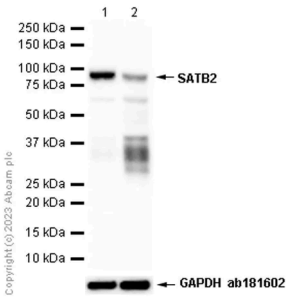
Lane 2:
Human fetal brain tissue lysate at 20 µg

Secondary

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

Predicted band size: 83 kDa

Observed band size: 83 kDa



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

Blocking and diluting buffer and concentration: 5% NFDM/TBST

Freshly made lysate is highly recommended to minimize protein degradation.

All lanes:
Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446) at 1/10000 dilution

Lane 1:
Saos-2 (Human osteosarcoma epithelial) whole cell fresh lysate at 10 µg

Lane 2:
Saos-2 (Human osteosarcoma epithelial) whole cell lysate at 10 µg

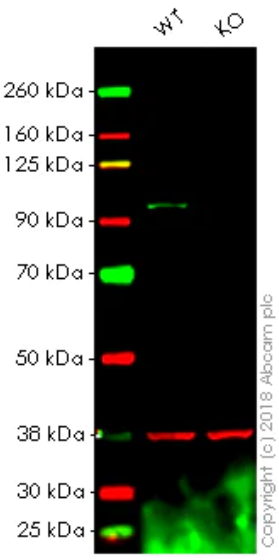
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 83 kDa

Observed band size: 83 kDa

Exposure time: 20s



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

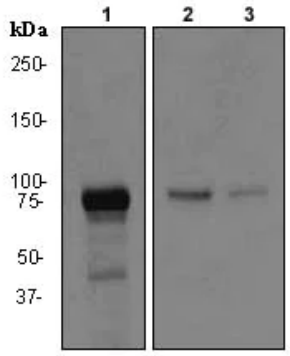
Lanes 1 - 2: Merged signal (red and green). Green - ab92446 observed at 83 kDa. Red - loading control, ab9484, observed at 37 kDa.
ab92446 was shown to specifically react with SATB2 in wild-type HAP1 cells as signal was lost in SATB2 knockout cells. Wild-type and SATB2 knockout samples were subjected to SDS-PAGE. ab92446 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 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-SATB2 antibody [EPNCIR130A] (ab92446) at 1/1000 dilution

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

Lane 2:
SATB2 knockout HAP1 whole cell lysate at 20 µg

Predicted band size: 83 kDa



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

All lanes:
Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446) at 1/1000 dilution

Lane 1:
HT1080 (human fibrosarcoma cell line) cell lysate at 10 µg

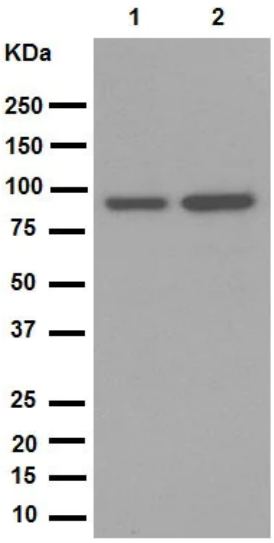
Lane 2:
SW1353 (human chondrosarcoma cell line) cell lysate at 10 µg

Lane 3:
MCF7 (human breast adenocarcinoma cell line) cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 83 kDa



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

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

All lanes:
Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446) at 1/1000 dilution

Lane 1:
Mouse brain tissue lysate at 20 µg

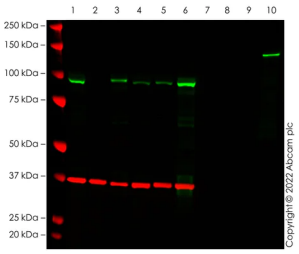
Lane 2:
Rat brain tissue lysate at 20 µg

Secondary

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

Predicted band size: 83 kDa

Observed band size: 83 kDa



Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446)

False colour image of Western blot: Anti-SATB2 antibody [EPNCIR130A] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab92446 was shown to bind specifically to SATB2. A band was observed at 100 kDa in wild-type HAP1 cell lysates with no signal observed at this size in SATB2 knockout cell line. To generate this image, wild-type and SATB2 knockout HAP1 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
Lanes 1 - 10:
Western blot - Anti-SATB2 antibody [EPNCIR130A] (ab92446) at 1/1000 dilution

Lanes 1 - 10:
Western blot - Anti-SATB2 antibody [EPNCIR130A] - BSA and Azide free (ab212177) at 1/1000 dilution

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

Lane 2:
SATB2 knockout HAP1 cell lysate at 20 µg

Lane 3:
Mouse E18 Embyonic brain cell lysate at 20 µg

Lane 4:
NIH/3T3 cell lysate at 20 µg

Lane 5:
HT1080 cell lysate at 20 µg

Lane 6:
Saos-2 cell lysate at 20 µg

Lanes 7 and 9:
Empty

Lane 8:
SATB1 Recombinant Protein cell lysate at 0.1 µg

Lane 10:
SATB2 Recombinant Protein (ab132405) cell lysate at 0.1 µg

Secondary

All lanes:
Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 100 kDa

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