abcam

Product datasheet

Anti-SATB1 antibody [EPR3951] ab109122

KO VALIDATED Recombinant RabMAb

★★★★★ 2 Abreviews 7 References 9 Images

Overview

Product name	Anti-SATB1 antibody [EPR3951]
Description	Rabbit monoclonal [EPR3951] to SATB1
Host species	Rabbit
Tested applications	**Suitable for:** ICC/IF, WB, IHC-P **Unsuitable for:** Flow Cyt
Species reactivity	**Reacts with:** Mouse, Human
Immunogen	Synthetic peptide within Human SATB1. The exact sequence is proprietary.
Positive control	Jurkat, fetal thymus, and Mouse thymus cell lysates; Human breast carcinoma, tonsil and ovarian adenocarcinoma tissues.
General notes	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 production For more information see here. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents. Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough. Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility. We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee. In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for. We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee. Applications & species from publications and Abreviews that have not been tested in our own

labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at -20°C. Stable for 12 months at -20°C.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 9% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA, 50% Tissue culture supernatant
Purity	Tissue culture supernatant
Clonality	Monoclonal
Clone number	EPR3951
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab109122** 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
ICC/IF		1/100 - 1/250.
WB		1/1000 - 1/10000. Predicted molecular weight: 86 kDa.
IHC-P	★★★★★	1/100 - 1/250. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. heat up to 98 degrees C, below boiling, and then let cool for 10-20 min.

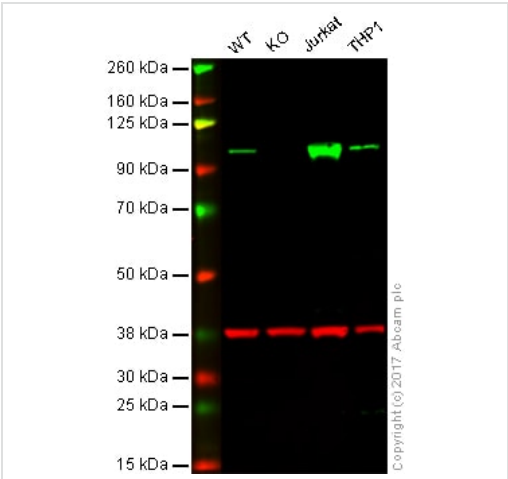
Application notes Is unsuitable for Flow Cyt.

Target

Function Crucial silencing factor contributing to the initiation of X inactivation mediated by Xist RNA that occurs during embryogenesis and in lymphoma (By similarity). Binds to DNA at special AT-rich sequences, the consensus SATB1-binding sequence (CSBS), at nuclear matrix- or scaffold-associated regions. Thought to recognize the sugar-phosphate structure of double-stranded DNA. Transcriptional repressor controlling nuclear and viral gene expression in a phosphorylated and acetylated status-dependent manner, 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 (e.g. PML at the MHC-I locus) and also by recruiting corepressors (HDACs) or coactivators (HATs) directly to promoters and enhancers. Modulates genes that are essential in

	the maturation of the immune T-cell CD8SP from thymocytes. Required for the switching of fetal globin species, and beta- and gamma-globin genes regulation during erythroid differentiation. Plays a role in chromatin organization and nuclear architecture during apoptosis. Interacts with the unique region (UR) of cytomegalovirus (CMV). Alu-like motifs and SATB1-binding sites provide a unique chromatin context which seems preferentially targeted by the HIV-1 integration machinery. Moreover, HIV-1 Tat may overcome SATB1-mediated repression of IL2 and IL2RA (interleukin) in T-cells by binding to the same domain than HDAC1. Delineates specific epigenetic modifications at target gene loci, directly upregulating metastasis-associated genes while downregulating tumor-suppressor genes. Reprograms chromatin organization and the transcription profiles of breast tumors to promote growth and metastasis.
Tissue specificity	Expressed predominantly in thymus.
Sequence similarities	Belongs to the CUT homeobox family. Contains 2 CUT DNA-binding domains. Contains 1 homeobox DNA-binding domain.
Post-translational modifications	Sumoylated. Sumoylation promotes cleavage by caspases. Phosphorylated by PKC. Acetylated by PCAF. Phosphorylated form interacts with HDAC1, but unphosphorylated form interacts with PCAF. DNA binding properties are activated by phosphorylation and inactivated by acetylation. In opposition, gene expression is down-regulated by phosphorylation but up-regulated by acetylation. Cleaved at Asp-254 by caspase-3 and caspase-6 during T-cell apoptosis in thymus and during B-cell stimulation. The cleaved forms can not dimerize and lose transcription regulation function because of impaired DNA and chromatin association.
Cellular localization	Nucleus matrix. Nucleus > PML body. Organized into a cage-like network anchoring loops of heterochromatin and tethering specialized DNA sequences. When sumoylated, localized in promyelocytic leukemia nuclear bodies.
Form	There are 2 isoforms produced by alternative splicing.

Images



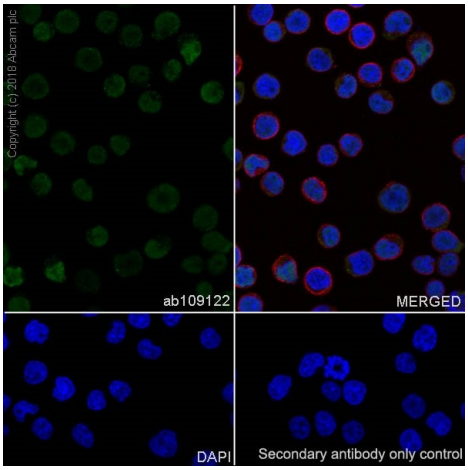
Western blot - Anti-SATB1 antibody [EPR3951] (ab109122)

Lane 1: Wild-type HAP1 whole cell lysate (20 µg)
Lane 2: SATB1 knockout HAP1 whole cell lysate (20 µg)
Lane 3: Jurkat whole cell lysate (20 µg)
Lane 4: THP1 whole cell lysate (20 µg)

Lanes 1 - 4: Merged signal (red and green). Green - ab109122 observed at 100 kDa. Red - loading control, ab9484, observed at 37 kDa.

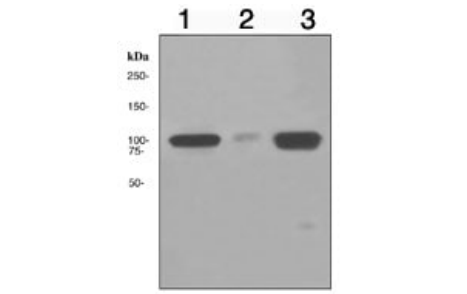
ab109122 was shown to specifically react with SATB1 in wild-type HAP1 cells as signal was lost in SATB1 knockout cells. Wild-type and SATB1 knockout samples were subjected to SDS-PAGE. Ab109122 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 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.



Immunocytochemistry/ Immunofluorescence - Anti-SATB1 antibody [EPR3951] (ab109122)

Ab109122 staining SATB1 in Jurkat (Human T cell leukemia T lymphocyte) cells by Immunocytochemistry/Immunofluorescence (ICC/IF). Cells were fixed with 4% paraformaldehyde and permeabilized in 0.1% TritonX-100. Samples were incubated with primary antibody 1:1000 dilution (2.1 µg/ml). An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution (2µg/ml). Alexa Fluor® 594 Anti-alpha Tubulin [DM1A] – Microtubule marker, ab195889 was used as a counterstain antibody (1:200, 2.5 µg/ml). DAPI was used as a counterstain antibody. Confocal image showing nuclear staining on Jurkat cell line.



Western blot - Anti-SATB1 antibody [EPR3951] (ab109122)

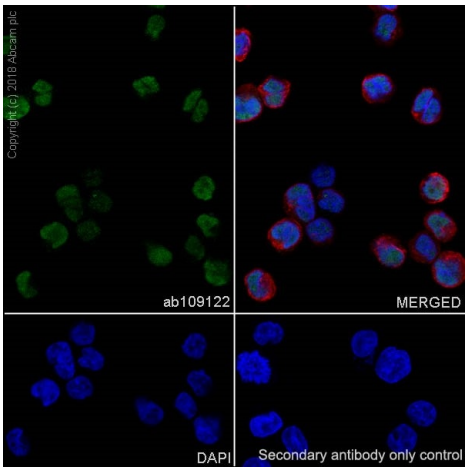
All lanes : Anti-SATB1 antibody [EPR3951] (ab109122) at 1/1000 dilution

Lane 1 : Jurkat cell lysates
Lane 2 : Fetal thymus lysates
Lane 3 : Mouse thymus lysates

Lysates/proteins at 10 µg per lane.

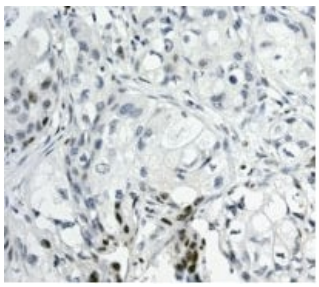
Secondary
All lanes : HRP labelled Goat anti-Rabbit at 1/2000 dilution

Predicted band size: 86 kDa



Immunocytochemistry/ Immunofluorescence - Anti-SATB1 antibody [EPR3951] (ab109122)

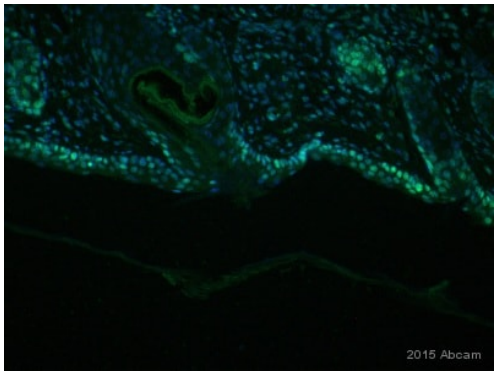
Ab109122 staining SATB1 in THP-1 (Human monocytic leukemia monocyte) cells by Immunocytochemistry/Immunofluorescence. Cells were fixed with 4% paraformaldehyde and permeabilized in 0.1% TritonX-100. Samples were incubated with primary antibody 1:1000 dilution (2.1 µg/ml). An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution (2µg/ml). Alexa Fluor® 594 Anti-alpha Tubulin [DM1A] – Microtubule marker, ab195889 was used as a counterstain antibody (1:200, 2.5 µg/ml). DAPI was used as a counterstain antibody. Confocal image showing nuclear staining on THP-1 cell line.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB1 antibody [EPR3951] (ab109122)

ab109122, at 1/100 dilution staining SATB1 in paraffin-embedded Human breast carcinoma, by Immunohistochemistry.

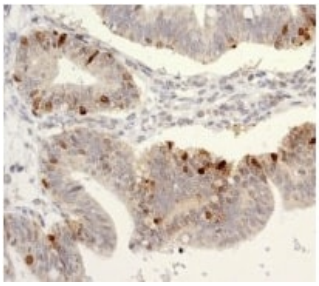
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB1 antibody [EPR3951] (ab109122)

This image is courtesy of an Abreview by Ahmar Aziz

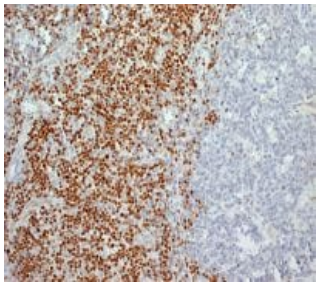
ab109122 staining SATB1 in mouse skin tissue sections by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue samples were fixed with paraformaldehyde, blocked with 10% goat serum for 30 minutes at 22°C and antigen retrieval was by heat mediation in citrate buffer. The sample was incubated with primary antibody (1/50 in PBS) at 4°C for 12 hours. A FITC-conjugated Goat anti-rabbit polyclonal (1/200) was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB1 antibody [EPR3951] (ab109122)

ab109122, at 1/100 dilution staining SATB1 in paraffin-embedded Human ovarian adenocarcinoma tissue, by Immunohistochemistry.

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB1 antibody [EPR3951] (ab109122)

ab109122, at 1/100 dilution staining SATB1 in paraffin-embedded Human tonsil tissue, by Immunohistochemistry.

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

Anti-SATB1 antibody [EPR3951] (ab109122)

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