abcam

ab201451

Anti-SA2 antibody [EPR17865] - C-terminal

Recombinant | RabMAb | KO Validated

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	EPR17865
Purification technique	Affinity purification Protein A
Concentration	0.32 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat

Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/25000
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information STAG2

Function	Component of cohesin complex, a complex required for the cohesion of sister chromatids after DNA replication. The cohesin complex apparently forms a large proteinaceous ring within which sister chromatids can be trapped. At anaphase, the complex is cleaved and dissociates from chromatin, allowing sister chromatids to segregate. The cohesin complex may also play a role in spindle pole assembly during mitosis.

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	The SA2 protein also known as stromal antigen 2 is a component of the cohesin complex playing a significant role in chromosomal dynamics. With an approximate molecular weight of 152 kDa SA2 exhibits high expression in the nucleus of proliferating cells particularly during interphase. This cohesin component contributes critically to maintaining sister chromatid cohesion and ensuring proper segregation during cell division serving as a functional partner in the cohesin complex with other components like SMC1 SMC3 and RAD21.
Biological function summary	SA2 plays an important role in regulating gene expression by forming loops that connect different genomic regions. SA2 as a member of the cohesin complex also participates in DNA repair by facilitating accurate recombination enhancing genome stability. This involvement is essential for maintaining chromatin structure which influences diverse cellular processes. Its expression can be an important modulator in the dynamic environment of cellular proliferation and differentiation.
Pathways	SA2 functions integrally within the cohesin-mediated sister chromatid cohesion pathway and the DNA damage response pathway. In these pathways SA2 teams with proteins such as CTCF in insulator function regulation and BRCA1 in DNA repair mechanisms. The cohesin-SA2 interaction with these proteins ensures proper chromosomal architecture and integrity which are essential for the accurate transmission of genetic material across generations of cells.

Associated diseases and disorders	SA2 mutations or dysregulations have been linked to Cornelia de Lange Syndrome (CdLS) and certain cancers. In CdLS SA2 mutations disrupt normal cohesin function affecting developmental processes. In cancer contexts abnormal SA2 function or expression can lead to improper DNA repair contributing to genomic instability and tumorigenesis. It is often studied in concert with other cohesin proteins and regulatory elements like NIPBL which provides insights into cohesin-related pathologies and potential therapeutic targets.

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

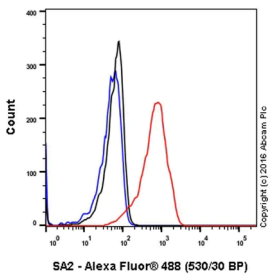
We do not recommend this combination. It is not covered by our product promise.

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.

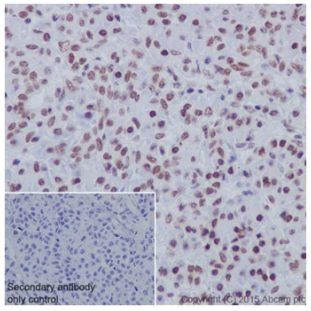
13 product images



Flow Cytometry (Intracellular) - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Flow Cytometry (Intracellular) staining using rabbit Anti-SA2 antibody

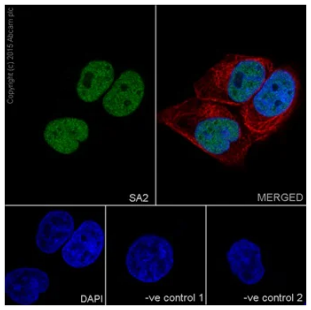
Intracellular Flow Cytometry analysis of K562 (human chronic myelogenous leukemia) labelling SA2 with purified ab201451 at 1/25000 (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Alexa Fluor® 488 goat anti-rabbit IgG (1/2000) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SA2 antibody

Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labeling SA2 using ab201451 at 1/2000 dilution. A Goat Anti-Rabbit IgG H&L (HRP) (ab97051) was used as secondary at 1/500 dilution. Counterstain: Hematoxylin.
Inset image: negative control obtained using PBS instead of ab201451, and secondary antibody only.
Note: Nuclear staining on Human breast carcinoma tissue was observed.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

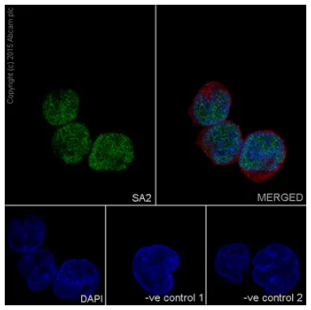


Immunocytochemistry/ Immunofluorescence - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SA2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized MCF7 (Human breast adenocarcinoma cell line) cells labeling SA2 with ab201451 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green).
Confocal image showing nuclear staining on MCF7 cell line.

The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:
1. ab201451 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
2. ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.

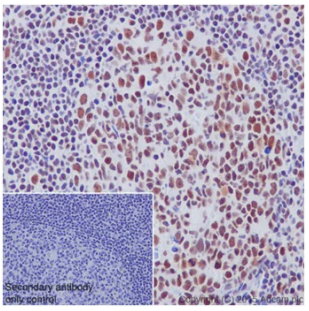


Immunocytochemistry/ Immunofluorescence - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SA2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized K562 (Human chronic myelogenous leukemia cells from bone marrow) cells labeling SA2 with ab201451 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green).
Confocal image showing nuclear staining on K562 cell line.

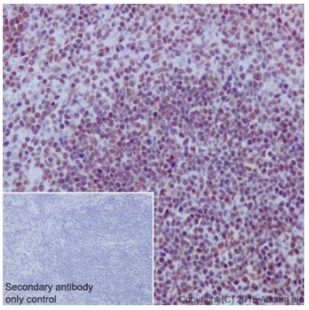
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The negative controls are as follows:
1. ab201451 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
2. ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SA2 antibody

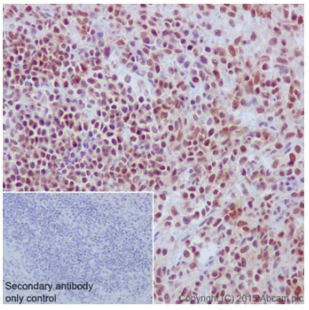
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling SA2 using ab201451 at 1/2000 dilution. A Goat Anti-Rabbit IgG H&L (HRP) (ab97051) was used as secondary at 1/500 dilution. Counterstain: Hematoxylin.
Inset image: negative control obtained using PBS instead of ab201451, and secondary antibody.
Note: Nuclear staining on Human tonsil tissue was observed.
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-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SA2 antibody

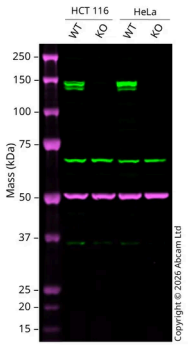
Immunohistochemical analysis of paraffin-embedded mouse spleen tissue labeling SA2 using ab201451 at 1/2000 dilution. A Goat Anti-Rabbit IgG H&L (HRP) (ab97051) was used as secondary at 1/500 dilution. Counterstain: Hematoxylin.
Inset image: negative control obtained using PBS instead of ab201451, and secondary antibody.
Note: Nuclear staining on mouse spleen tissue was observed.
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-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SA2 antibody

Immunohistochemical analysis of paraffin-embedded rat spleen tissue labeling SA2 using ab201451 at 1/2000 dilution. A Goat Anti-Rabbit IgG H&L (HRP) (ab97051) was used as secondary at 1/500 dilution. Counterstain: Hematoxylin.
Inset image: negative control obtained using PBS instead of ab201451, and secondary antibody.
Note: Nuclear staining on rat spleen tissue was observed.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Western blot staining using rabbit Anti-SA2 antibody

Western blot: Anti-SA2 antibody [EPR17865] - C-terminal ab201451 staining at 1/1000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 141 kDa in Wild-type HCT 116 cell lysates with no signal observed at this size in STAG2 knockout HCT 116 cell line. To generate this image, 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 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 cell lysates at 20 µg

Lane 2:
Western blot - Human STAG2 knockout HCT116 cell line (ab287783) at 20 µg

Lane 3:
Wild-type HeLa ab255928 cell lysates at 20 µg

Lane 4:
Western blot - Human STAG2 (SA2) knockout HeLa cell line (ab265461) at 20 µg

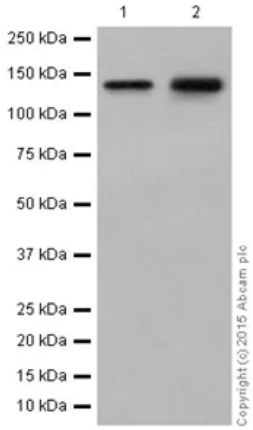
Secondary

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

Performed under reducing conditions.

Predicted band size: 141 kDa

Observed band size: 141 kDa



Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Western blot staining using rabbit Anti-SA2 antibody

5% NFDM/TBST: Blocking and diluting buffer.
All lanes:
Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451) at 1/10000 dilution

Lane 1:
MCF-7 (Human breast adenocarcinoma cell line) cell lysate at 10 µg

Lane 2:
K562 (Human chronic myelogenous leukemia cells from bone marrow) cell lysate at 10 µg

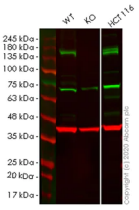
Secondary

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

Predicted band size: 141 kDa

Observed band size: 141 kDa

Exposure time: 3min



Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Western blot staining using rabbit Anti-SA2 antibody

Lanes 1-3: Merged signal (red and green). Green - ab201451 observed at 141 kDa. Red - loading control ab8245 observed at 36 kDa.
ab201451 Anti-SA2 antibody [EPR17865] - C-terminal was shown to specifically react with SA2 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab265461 (knockout cell lysate ab257707) was used. Wild-type and SA2 knockout samples were subjected to SDS-PAGE. ab201451 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution 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-SA2 antibody [EPR17865] - C-terminal (ab201451) at 1/1000 dilution

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

Lane 2:
STAG2 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human STAG2 (SA2) knockout HeLa cell line (ab265461)

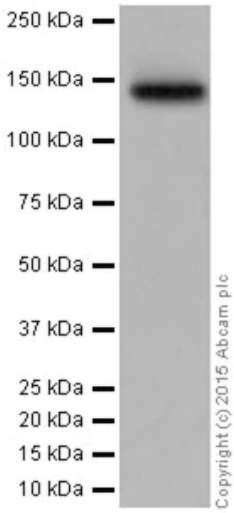
Lane 3:
HCT116 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 141 kDa

Observed band size: 141 kDa



Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

5% NFDM/TBST: Blocking and diluting buffer.
All lanes:
Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451) at 1/1000 dilution

All lanes:
Human fetal brain lysate at 10 µg

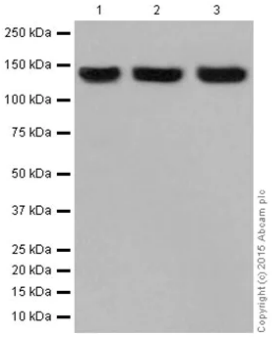
Secondary

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

Predicted band size: 141 kDa

Observed band size: 141 kDa

Exposure time: 1min



Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

5% NFDM/TBST: Blocking and diluting buffer.
All lanes:
Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451) at 1/10000 dilution

Lane 1:
C6 (Rat glial tumor cells) cell lysate at 10 µg

Lane 2:
Raw264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) cell lysate at 10 µg

Lane 3:
NIH 3T3 (Mouse embyro fibroblast cells) cell lysate at 10 µg

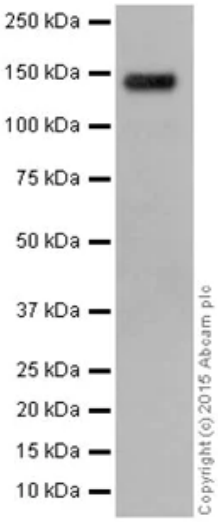
Secondary

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

Predicted band size: 141 kDa

Observed band size: 141 kDa

Exposure time: 3min



Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451)

SA2 Western blot staining of mouse spleen lysate using rabbit Anti-SA2 antibody

5% NFDM/TBST: Blocking and diluting buffer.
All lanes:
Western blot - Anti-SA2 antibody [EPR17865] - C-terminal (ab201451) at 1/1000 dilution

All lanes:
mouse spleen lysate at 10 µg

Secondary

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

Predicted band size: 141 kDa

Observed band size: 141 kDa

Exposure time: 1min

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