abcam

ab317301

Anti-SA1 antibody [EPR26227-76]

Recombinant | RabMAb | Advanced Validation | 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	EPR26227-76
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for mouse ICC. We recommend using fresh lysate as SA1 can undergo degradation easily. We have observed loss of signal when using frozen lysate.
Concentration	0.478 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Recombinant fragment - Human
Dilution info	1/1000

Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-

Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ChIP-seq

Tested

Species	Human
Dilution info	8 µg for 10^7 Cells
Notes	-

Species	Mouse
Dilution info	4 µg

Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/200
Notes	-

Expected

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

Not recommended

Species	Mouse, Recombinant fragment - Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information STAG1

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	SA1 also known as Stromal Antigen 1 or cohesin subunit SA-1 plays a role in chromosome segregation and sister chromatid cohesion. It has a molecular weight of approximately 130 kDa. SA1 shows expression in various tissues with notable levels in the nucleus of dividing cells. The protein functions as a part of the cohesin complex contributing to its role in regulating the structure and function of chromosomes.
Biological function summary	SA1 works within the cohesin complex alongside other subunits such as SMC1 SMC3 and Rad21. This complex maintains sister chromatid cohesion ensuring proper chromosome alignment and separation during mitosis and meiosis. SA1's interaction within the cohesin complex helps modulate its ability to regulate transcription DNA repair and chromosome organization.
Pathways	SA1 participates in the cohesin pathway which is essential for cell cycle regulation and genomic stability. SA1 interacts with other proteins such as CTCF to facilitate chromosomal loop formation influencing gene expression. Additionally it operates within the DNA damage response pathway aiding in the repair processes by coordinating cohesin-dependent repair mechanisms and maintaining genomic stability.
Associated diseases and disorders	SA1 has implications in Cornelia de Lange Syndrome (CdLS) and certain cancers. Mutations or dysregulation of SA1 can lead to CdLS a developmental disorder characterized by growth abnormalities and cognitive challenges where Rad21 also plays a role. Moreover altered SA1 expression or function associates with tumorigenesis as its role in chromosome segregation and stability is critical in avoiding aneuploidy and chromosomal instability typical in cancer progression.

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.

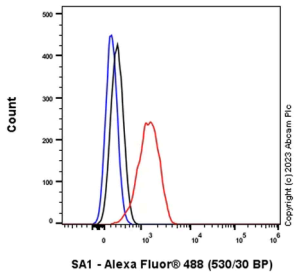
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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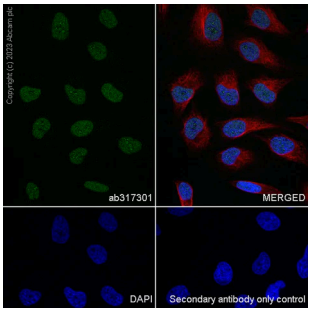
15 product images



Flow Cytometry (Intracellular) - Anti-SA1 antibody [EPR26227-76] (ab317301)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling SA1 with ab317301 at 1/50 dilution (1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



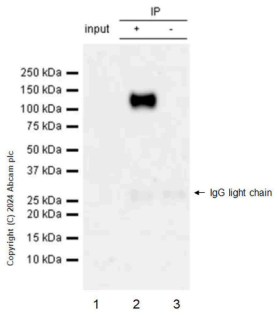
Immunocytochemistry/ Immunofluorescence - Anti-SA1 antibody [EPR26227-76] (ab317301)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling SA1 with ab317301 at 1/200 (10.34 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green).

Confocal image showing mainly nuclear staining in HeLa cell line (shown in green). The counterstain was observed in red. Nuclear DNA was labeled with DAPI (shown in blue). Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.



Immunoprecipitation - Anti-SA1 antibody [EPR26227-76] (ab317301)

SA1 was immunoprecipitated from 0.35 mg HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate with ab317301 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab317301 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate
Lane 2: ab317301 IP in HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab317301 in HeLa whole cell lysate

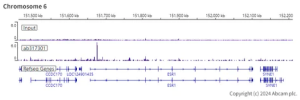
All lanes:
Immunoprecipitation - Anti-SA1 antibody [EPR26227-76] (ab317301) at 1/30 dilution

All lanes:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate

Secondary

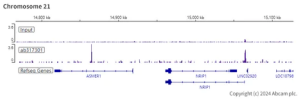
All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 41s



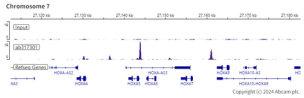
ChIP-sequencing - Anti-SA1 antibody [EPR26227-76] (ab317301)

Chromatin was prepared from MCF7 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 10^7 cells and 8 µg of ab317301 [EPR26227-76]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. The Input control is also shown.



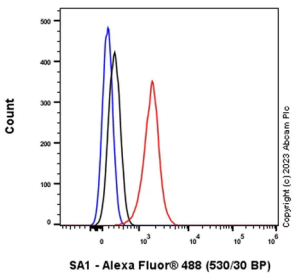
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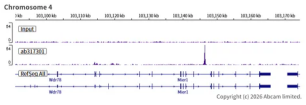
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Flow Cytometry (Intracellular) - Anti-SA1 antibody [EPR26227-76] (ab317301)

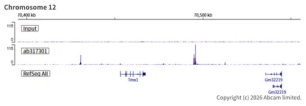
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling SA1 with ab317301 at 1/50 dilution (1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



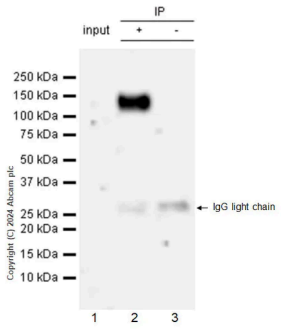
ChIP-sequencing - Anti-SA1 antibody [EPR26227-76] (ab317301)

Chromatin was prepared from 3T3-L1 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 5 x 10^6 cells and 4 µg of ab317301 [EPR26227-76]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. The Input control is also shown.



ChIP-sequencing - Anti-SA1 antibody [EPR26227-76] (ab317301)

Chromatin was prepared from 3T3-L1 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 5 x 10^6 cells and 4 µg of ab317301 [EPR26227-76]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. The Input control is also shown.



Immunoprecipitation - Anti-SA1 antibody [EPR26227-76] (ab317301)

SA1 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate with ab317301 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab317301 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution.

Lane 1: NIH/3T3 (mouse embryonic fibroblast) whole cell lysate
Lane 2: ab317301 IP in NIH/3T3 (mouse embryonic fibroblast) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab317301 in NIH/3T3 whole cell lysate

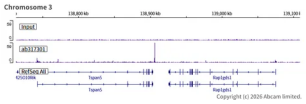
All lanes:
Immunoprecipitation - Anti-SA1 antibody [EPR26227-76] (ab317301) at 1/30 dilution

All lanes:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate

Secondary

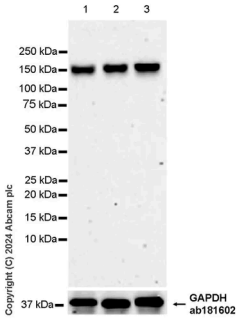
All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 154s



ChIP-sequencing - Anti-SA1 antibody [EPR26227-76] (ab317301)

Chromatin was prepared from 3T3-L1 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 5 x 10^6 cells and 4 µg of ab317301 [EPR26227-76]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. The Input control is also shown.



Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301)

SA1 Western blot staining using rabbit Anti-SA1 antibody

The blot lysates were freshly made and used for Western Blotting immediately to minimize protein degradation.

SA1 can undergo degradation easily.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301) at 1/1000 dilution

Lane 1:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

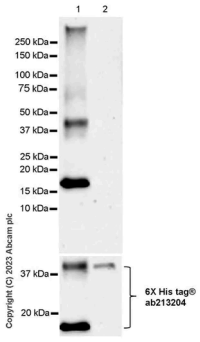
Lane 3:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 145 kDa, 36 kDa

Exposure time: 180s



Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301)

SA1 Western blot staining using rabbit Anti-SA1 antibody

This antibody does not cross-react with human STAG2.

In Western blot, Anti-6X His tag® antibody [EPR20547] - ChIP Grade (ab213204) staining at 1/5000 dilution.

All lanes:
Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301) at 1/1000 dilution

Lane 1:
His-tagged Human STAG1 protein

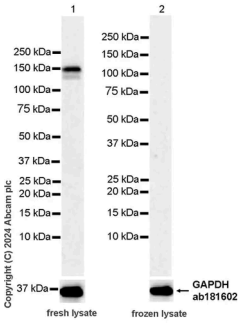
Lane 2:
His-tagged Human STAG2 protein

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 19 kDa, 38 kDa

Exposure time: 180s



Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301)

SA1 Western blot staining using rabbit Anti-SA1 antibody

Lane 1 lysate was freshly made and used for Western Blotting immediately to minimize protein degradation.

SA1 can undergo degradation easily.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301) at 1/1000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

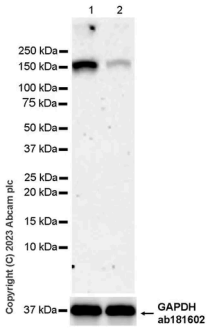
Lane 2:
MCF7 whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 145 kDa, 36 kDa

Exposure time: 180s



Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301)

SA1 Western blot staining using rabbit Anti-SA1 antibody

The lysates were freshly made and used for Western Blotting immediately to minimize protein degradation.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-SA1 antibody [EPR26227-76] (ab317301) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
HeLa transfected with siRNA specifically targeting SA1 whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 145 kDa, 36 kDa

Exposure time: 180s

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