abcam

ab108981

Anti-SENP1 antibody [EPR3844]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR3844
Purification technique	Affinity purification Protein A
Concentration	0.228 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/300
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/1000 - 1/20000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	-

Target data

See full target information SENP1

Function	Protease that catalyzes two essential functions in the SUMO pathway (PubMed:10652325, PubMed:15199155, PubMed:15487983, PubMed:16253240, PubMed:16553580, PubMed:21829689, PubMed:21965678, PubMed:23160374,

PubMed:24943844, PubMed:25406032, PubMed:29506078, PubMed:34048572, PubMed:37257451). The first is the hydrolysis of an alpha-linked peptide bond at the C-terminal end of the small ubiquitin-like modifier (SUMO) propeptides, SUMO1, SUMO2 and SUMO3 leading to the mature form of the proteins (PubMed:15487983). The second is the deconjugation of SUMO1, SUMO2 and SUMO3 from targeted proteins, by cleaving an epsilon-linked peptide bond between the C-terminal glycine of the mature SUMO and the lysine epsilon-amino group of the target protein (PubMed:15199155, PubMed:16253240, PubMed:21829689, PubMed:21965678, PubMed:23160374, PubMed:24943844, PubMed:25406032, PubMed:29506078, PubMed:34048572, PubMed:37257451). Deconjugates SUMO1 from HIPK2 (PubMed:16253240). Deconjugates SUMO1 from HDAC1 and BHLHE40/DEC1, which decreases its transcriptional repression activity (PubMed:15199155, PubMed:21829689). Deconjugates SUMO1 from CLOCK, which decreases its transcriptional activation activity (PubMed:23160374). Deconjugates SUMO2 from MTA1 (PubMed:21965678). Inhibits N(6)-methyladenosine (m6A) RNA methylation by mediating SUMO1 deconjugation from METTL3 and ALKBH5: METTL3 inhibits the m6A RNA methyltransferase activity, while ALKBH5 desumoylation promotes m6A demethylation (PubMed:29506078, PubMed:34048572, PubMed:37257451). Desumoylates CCAR2 which decreases its interaction with SIRT1 (PubMed:25406032). Deconjugates SUMO1 from GPS2 (PubMed:24943844).

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

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	SENP1 also known as SUMO-specific protease 1 is an enzyme involved in the process of sumoylation a post-translational modification mechanism affecting various proteins. This enzyme has an approximate molecular mass of 73 kDa. SENP1 specifically cleaves SUMO (Small Ubiquitin-like Modifier) from target proteins regulating their function and localization. It shows strong expression in tissues with high cellular turnover like the thymus spleen and testis indicating its significant role in cell growth and development processes.
Biological function summary	SENP1 contributes to cellular homeostasis by modifying and controlling protein interactions and functions. This enzyme facilitates the recycling of SUMO proteins and affects transcription factors such as HIF1α which are vital for cellular response to hypoxia. SENP1 interacts closely with SUMO E3 ligases in complexes coordinating the addition or removal of SUMO groups from target proteins. Its activity is essential for maintaining the balance between protein sumoylation and desumoylation which impacts numerous cellular processes including cell cycle progression and stress response.
Pathways	SENP1 modulates key regulatory pathways related to its sumoylation mechanism. Major pathways where SENP1 plays a role include the HIF-1 signaling pathway where it affects the stability and activity of HIF1α under low oxygen conditions and the p53 signaling pathway influencing cell cycle and apoptosis. SENP1's interactivity with proteins like Ubc9 a SUMO-conjugating enzyme and PIAS3 a SUMO E3 ligase indicates its broad involvement and regulation within these pathways emphasizing its impact on maintaining cellular function and adaptation.
Associated diseases and disorders	SENP1 associates with certain cancers and neurodegenerative disorders due to its regulatory influence on protein stability and gene expression. Overexpression of SENP1 is often observed in prostate cancer where it desumoylates HIF1α enhancing its transcriptional activity and promoting tumorigenesis. Additionally alterations in SENP1 function might connect to neurodegenerative diseases like Alzheimer's where protein turnover and cellular stress responses are disrupted. Through these disorders SENP1 connects with proteins such as AR (androgen receptor) in cancer contexts and Tau in Alzheimer's underlying its role in disease pathology.

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

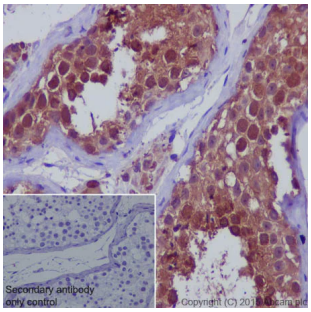
We do not recommend this combination. It is not covered by our product promise.

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.

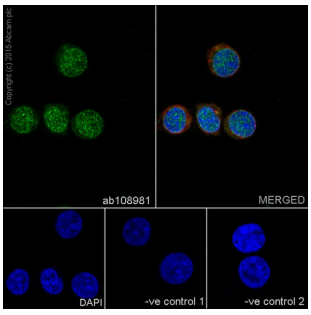
8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SENP1 antibody [EPR3844] (ab108981)

SENP1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SENP1 antibody

Immunohistochemical staining of paraffin embedded human testis with purified ab108981 at a working dilution of 1/300. The secondary antibody used is HRP goat anti-rabbit IgG H&L (ab97051) at 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.



Immunocytochemistry/ Immunofluorescence - Anti-SENP1 antibody [EPR3844] (ab108981)

SENP1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SENP1 antibody

Immunofluorescence staining of Jurkat cells with purified ab108981 at a working dilution of 1/100, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified ab108981 was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat

anti-mouse antibody (ab150120) at a dilution of 1/500. For negative control 2, ab7291 (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (ab150077) at a dilution of 1/400.

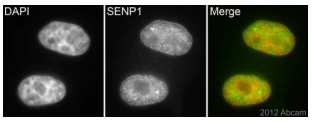
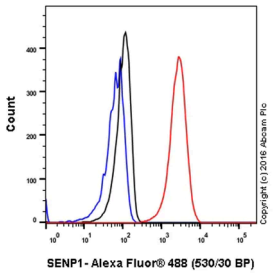


Image courtesy of a customer review submitted by Dr. Kirk McManus, Univ. of Manitoba/Cancer Care MICB, Canada

Immunocytochemistry/ Immunofluorescence - Anti-SENP1 antibody [EPR3844] (ab108981)

SENP1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SENP1 antibody

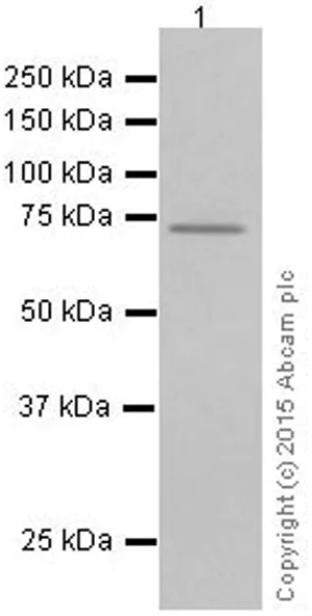
Unpurified ab108981 (1/500) staining SENP1 in HeLa cells (green). Cells were fixed in paraformaldehyde, permeabilised with 0.5% Triton X-100/PBS and counterstained with DAPI in order to highlight the nucleus (red). For further experimental details please refer to Abreview.



Flow Cytometry (Intracellular) - Anti-SENP1 antibody [EPR3844] (ab108981)

SENP1 Flow Cytometry (Intracellular) staining using rabbit Anti-SENP1 antibody

Intracellular Flow Cytometry analysis of HeLa cells labelling SENP1 with purified ab108981 at a dilution of 1/20 (red). Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. An Alexa Flour® 488-conjugated 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.



Western blot - Anti-SENP1 antibody [EPR3844] (ab108981)

SENP1 Western blot staining of Daudi cell lysate using rabbit Anti-SENP1 antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-SENP1 antibody [EPR3844] (ab108981) at 1/20000 dilution

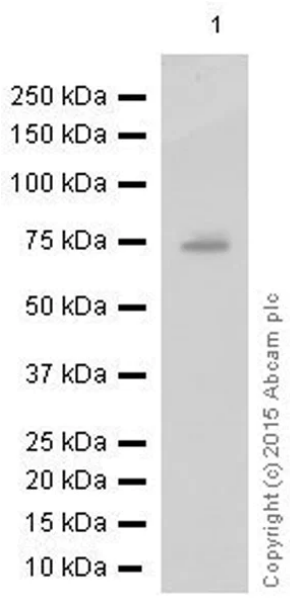
All lanes:
Daudi cell lysate at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/20000 dilution

Predicted band size: 73 kDa

Observed band size: 73 kDa



Western blot - Anti-SENP1 antibody [EPR3844] (ab108981)

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-SENP1 antibody [EPR3844] (ab108981) at 1/20000 dilution

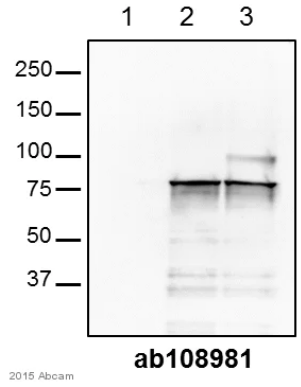
All lanes:
U87-MG cell lysate at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/20000 dilution

Predicted band size: 73 kDa

Observed band size: 73 kDa



This image is courtesy of a customer review submitted by Ragnhild Eskeland

Western blot - Anti-SENP1 antibody [EPR3844] (ab108981)

Blocked with 3% milk for 1 hour at 25°C.
Incubated with the primary antibody for 18 hours at 4°C.

All lanes:
Western blot - Anti-SENP1 antibody [EPR3844] (ab108981) at 1/1000 dilution

Lane 1:
COS-1 cell lysate at 20000 Cells

Lane 2:
COS-1 cell lysate transfected with SENP1 at 20000 Cells

Lane 3:
COS-1 cell lysate transfected with SENP1 mutant at 20000 Cells

Secondary

All lanes:
HRP-conjugated donkey anti-rabbit IgG polyclonal at 1/10000 dilution

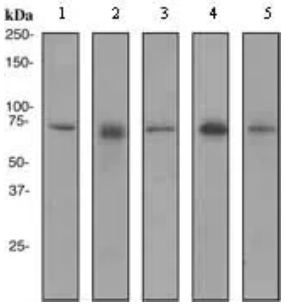
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 73 kDa

Observed band size: 75 kDa

Exposure time: 6min



Western blot - Anti-SENP1 antibody [EPR3844] (ab108981)

All lanes:
Western blot - Anti-SENP1 antibody [EPR3844] (ab108981) at 1/1000 dilution

Lane 1:
HeLa cell lysates at 10 µg

Lane 2:
HUVEC cell lysates at 10 µg

Lane 3:
Jurkat cell lysates at 10 µg

Lane 4:
Daudi cell lysates at 10 µg

Lane 5:
U87-MG cell lysates at 10 µg

Secondary

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

Predicted band size: 73 kDa

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