abcam

ab79546

Anti-Securin antibody [EPR3240]

Recombinant | RabMAb

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	EPR3240
Purification technique	Affinity purification Protein A
Concentration	0.237 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/5000 - 1/20000
Notes	-

Species	Transfected cell lysate - Human
Dilution info	1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified use at 1/100 - 1/250.**

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Target data

See full target information PTTG1

Function	Regulatory protein, which plays a central role in chromosome stability, in the p53/TP53 pathway, and DNA repair. Probably acts by blocking the action of key proteins. During the mitosis, it blocks Separase/ESPL1 function, preventing the proteolysis of the cohesin complex and the subsequent segregation of the chromosomes. At the onset of anaphase, it is ubiquitinated, conducting to its destruction and to the liberation of ESPL1. Its function is however not limited to a blocking activity, since it is required to activate ESPL1. Negatively regulates the transcriptional activity and related apoptosis activity of TP53. The negative regulation of TP53 may explain the strong transforming capability of the protein when it is overexpressed. May also play a role in DNA repair via its interaction with Ku, possibly by connecting DNA damage-response pathways with sister chromatid separation.

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

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	Securin also known as PTTG1 (pituitary tumor-transforming gene 1) is a protein involved in the regulation of sister chromatid separation during cell division. It inhibits Separase an enzyme important for this separation. Securin has a molecular mass of approximately 22 kDa. Its expression is notable in various tissues including the pituitary gland and cancerous tissues which suggests a role in tumorigenesis.
Biological function summary	Securing proper chromosome segregation Securin forms a complex with Separase. By inhibiting Separase Securin ensures that separation of chromatids occurs only at the correct stage of mitosis. This regulatory function is critical for maintaining genomic stability and avoiding aneuploidy which can lead to tumorigenesis. The presence of Securin in dividing cells highlights its role in the cell cycle.
Pathways	Securin functions are integrated within the cell cycle and apoptosis pathways. In the cell cycle pathway Securin controls the metaphase-anaphase transition. This involves interaction with cyclin-dependent kinases (CDKs) and the anaphase-promoting complex (APC/C). In terms of apoptosis Securin may interact with proteins like Bcl-2 impacting cell survival and death decisions under stress conditions.
Associated diseases and disorders	Securin has been associated with cancer particularly pituitary adenomas and colorectal cancer. Its overexpression can lead to chromosomal instability a hallmark of many cancers. Furthermore interactions with other proteins like p53 known for its tumor-suppressing activities suggest a complex interplay in oncogenic processes where disruptions can contribute to tumor development and 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

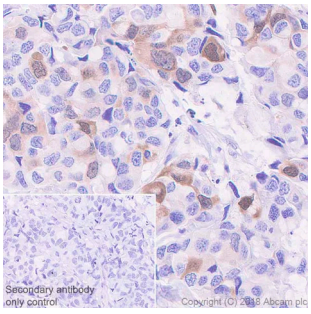
We do not recommend this combination. It is not covered by our product promise.

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.

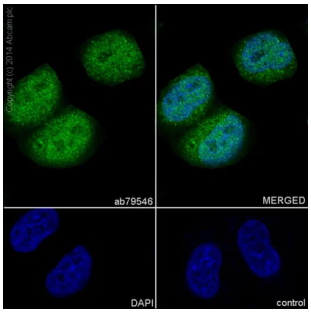
10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Securin antibody [EPR3240] (ab79546)

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

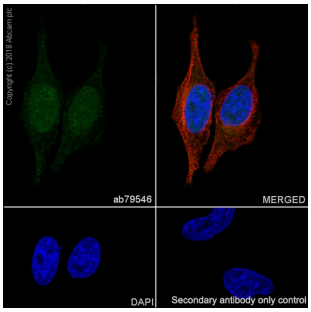
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast carcinoma tissue sections labeling Securin with purified ab79546 at 1/200 dilution (1.19 µg/ml). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-Securin antibody [EPR3240] (ab79546)

Securin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Securin antibody

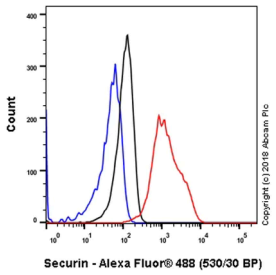
Immunofluorescent analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling securin with unpurified ab79546 at 1/250 dilution. The cells were permeabilised with 0.1% Triton X-100. Anti-rabbit Alexa Fluor® 488 (ab150077) at 1/500 dilution was used as the secondary antibody (green). The nuclear counter stain is DAPI (blue).



Immunocytochemistry/ Immunofluorescence - Anti-Securin antibody [EPR3240] (ab79546)

Securin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Securin antibody

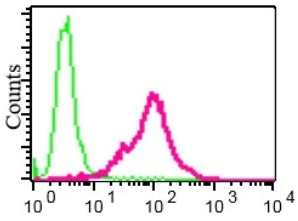
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Securin with purified ab79546 at 1/50 dilution (4.74 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain.
PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-Securin antibody [EPR3240] (ab79546)

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

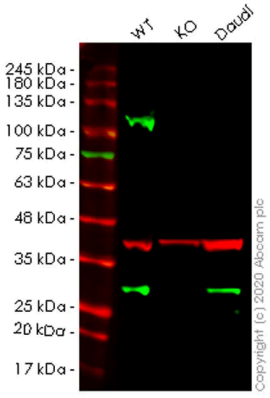
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Securin with purified ab79546 at 1/30 dilution (10µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilized with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Flow Cytometry (Intracellular) - Anti-Securin antibody [EPR3240] (ab79546)

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

Intracellular flow cytometric analysis of permeabilized Jurkat (Human T cell leukemia cell line from peripheral blood) cells using unpurified ab79546 (red) or a rabbit IgG (negative) (green).



Western blot - Anti-Securin antibody [EPR3240] (ab79546)

Securin Western blot staining using rabbit Anti-Securin antibody

Lanes 1-3: Merged signal (red and green). Green - ab79546 observed at 28 kDa. Red - loading control, ab8245 observed at 37 kDa.
ab79546 Anti-Securin antibody [EPR3240] was shown to specifically react with Securin in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266231 (knockout cell lysate ab257289) was used. Wild-type and Securin knockout samples were subjected to SDS-PAGE. ab79546 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 10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Securin antibody [EPR3240] (ab79546) at 1/1000 dilution

Lane 1:

Wild-type HEK293T cell lysate at 20 µg

Lane 2:
PTTG1 knockout HEK293T cell lysate at 20 µg

Lane 3:
Daudi cell lysate at 20 µg

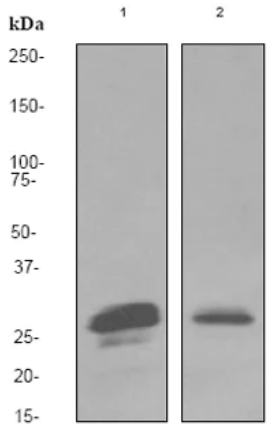
Secondary

All lanes:
Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/10000 dilution

Performed under reducing conditions.

Predicted band size: 22 kDa

Observed band size: 28 kDa



Western blot - Anti-Securin antibody [EPR3240] (ab79546)

All lanes:
Western blot - Anti-Securin antibody [EPR3240] (ab79546) at 1/20000 dilution

Lane 1:
Daudi (Human Burkitt's lymphoma cell line) cell lysate at 10 µg

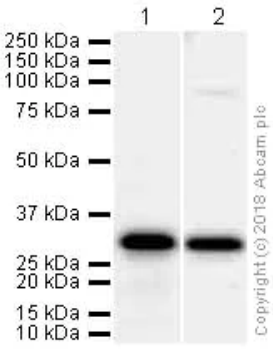
Lane 2:
HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate at 10 µg

Secondary

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

Predicted band size: 22 kDa

Observed band size: 25 kDa, 28 kDa



Western blot - Anti-Securin antibody [EPR3240] (ab79546)

All lanes:
Western blot - Anti-Securin antibody [EPR3240] (ab79546) at 1/1000 dilution

Lane 1:
Daudi (Human Burkitt's lymphoma lymphoblast) whole cell lysates at 15 µg

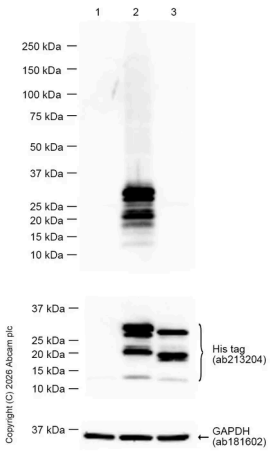
Lane 2:
HCT 116 (Human colorectal carcinoma epithelial cell) whole cell lysates at 15 µg

Secondary

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

Predicted band size: 22 kDa

Observed band size: 28 kDa



Western blot - Anti-Securin antibody [EPR3240] (ab79546)

Securin Western blot staining using rabbit Anti-Securin antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/1000,000 dilution.

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

All lanes:
Western blot - Anti-Securin antibody [EPR3240] (ab79546) at 1/10000 dilution

Lane 1:
293T (human embryonic kidney epithelial cell) + OE- empty whole cell lysate

Lane 2:
293T + OE-Securin whole cell lysate

Lane 3:
293T + OE-Securin-2 whole cell lysate

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/20000 dilution

Observed band size: 28 kDa, 36 kDa

Exposure time: 3s

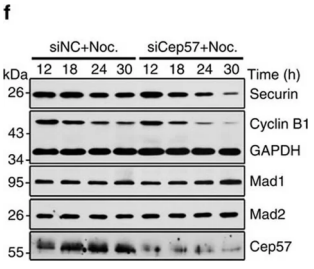


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-Securin antibody [EPR3240] (ab79546)

Securin Western blot staining using rabbit Anti-Securin antibody

Western Blotting using Anti-Securin antibody [EPR3240], ab79546. Publication image from Chen, J. et al., 2016, Nat Commun, 26743940. Legend direct from paper.

Cep57 contributes to activation of the spindle assembly checkpoint.(a,b) HeLa cells with 100 nM nocodazole treatment after co-transfection with H2B-RFP and negative control (NC)-, Cep57-, Mad1- or Mad2-siRNA for 48 h. (a) Time-lapse images of HeLa cells. The numbers indicate the time (minutes) after entry into mitosis. Arrowhead, multiple nuclei. Scale bar, 5 μm. (b) Quantification of mitotic duration of HeLa cells from a. Scatter plots show data from three independent experiments. (c) Quantification of mitotic duration of live HeLa cells with 80 nM taxol treatment after co-transfection with H2B-RFP and negative control (NC)-, Cep57-, Mad1- or Mad2-siRNA for 48 h. Scatter plots show data from three independent experiments. (d) Diagram of experimental design. The siRNA-transfected HeLa cells were synchronized by double-thymidine block, and released into nocodazole. (e–g) HeLa cells were treated as in d. (e) After 12 h nocodazole treatment, mitotic cell lysates were used to perform immunoprecipitation (IP) and western blotting assays with the indicated antibodies. WCL, whole-cell lysate. (f) Western blots of the indicated proteins in HeLa cells after the indicated nocodazole (Noc.) treatment time. (g) Quantification of the protein levels of securin and cyclin B1 from (f). The experiment was repeated three times. For b,c and g, data are mean±s.e.m. ****P<0.0001; ***P<0.001; **P<0.01; *P<0.05; NS, not significant (unpaired two-tailed Student's t-test). DIC, differential interference contrast.

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