abcam

ab317701

Anti-TOR1AIP1 antibody [EPR29003-34]

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, 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	EPR29003-34
Purification technique	Affinity purification Protein A
Specificity	The immunogen has been designed to the carboxyl terminus of LAP1. The region shares 100% sequence identity with LAP1B (long) and LAP1C (short) isoforms. In western blot, we were unable to detect the long isoform LAP1B (~85KDa) in the cell lines tested. We welcome any feedback from customers who have used this antibody in western blot.
Concentration	0.497 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Dot

Tested

Species	Recombinant fragment - Human

Dilution info	1/1000
Notes	-

Expected

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

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

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

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

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

IHC-P

Tested

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.

Not recommended

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

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

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

IP

Not recommended

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

Target data

See full target information TOR1AIP1

Function	Required for nuclear membrane integrity. Induces TOR1A and TOR1B ATPase activity and is required for their location on the nuclear membrane. Binds to A- and B-type lamins. Possible role in membrane attachment and assembly of the nuclear lamina.

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	TOR1AIP1 also known as lamina-associated polypeptide 1 (LAP1) is a mechanical protein involved in nuclear envelope structural integrity. This protein has an approximate mass of 75 kDa and is mainly found in the inner nuclear membrane. It interacts closely with components of the nuclear lamina particularly lamin A/C to contribute to the nuclear envelope architecture and maintain cellular functions.
Biological function summary	The protein known as LAP1 plays a role in modulating nuclear-cytoplasmic transport and chromatin dynamics. It is associated with the inner nuclear membrane complex and works in tandem with other nuclear lamins. This interaction is essential for processes like gene expression regulation and nuclear structure maintenance facilitating cellular response to mechanical stress.
Pathways	TOR1AIP1 participates in pathways involving nuclear envelope assembly and disassembly during cell division. It is integrated within the mitotic nuclear envelope reassembly pathway and interacts with proteins like emerin and torsinA. These proteins are essential for regulated nuclear envelope dynamics as well as maintaining proper chromatin organization during mitotic events.
Associated diseases and disorders	Mutations in TOR1AIP1 have been linked to congenital muscular dystrophies and torsion dystonia. These conditions often arise from disrupted nuclear envelope integrity and abnormal cellular responses to mechanical stress. The close interaction with proteins such as emerin and torsinA underlines the connection between nuclear envelope dysfunction and the pathogenesis of these muscular and movement disorders.

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

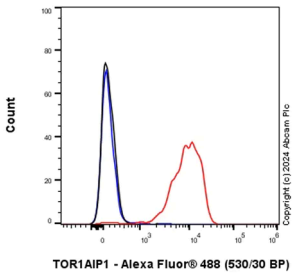
We do not recommend this combination. It is not covered by our product promise.

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.

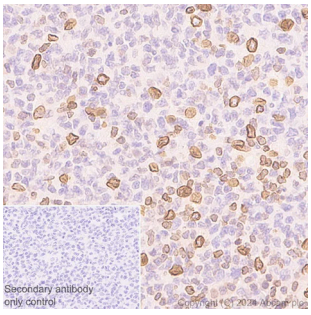
7 product images



Flow Cytometry (Intracellular) - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized SH-SY5Y (human neuroblastoma epithelial cell) cells labelling TOR1AIP1 with ab317701 at 1/500 dilution (0.1 ug)/Red (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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

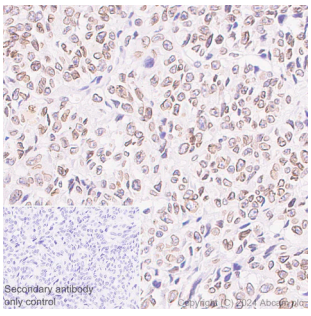
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling TOR1AIP1 with ab317701 at 1/2000 (0.249 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Nucleus envelope staining on human tonsil.
The section was incubated with ab317701 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

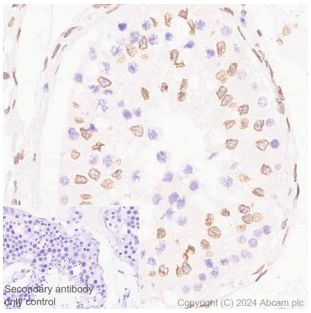
Immunohistochemical analysis of paraffin-embedded Human melanoma tissue labeling TOR1AIP1 with ab317701 at 1/2000 (0.249 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Nucleus envelope staining on human melanoma (PMID: 36624187).
The section was incubated with ab317701 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

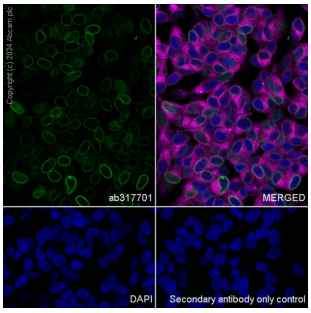
Immunohistochemical analysis of paraffin-embedded Human testis tissue labeling TOR1AIP1 with ab317701 at 1/2000 (0.249 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Nucleus envelope staining on human testis (PMID: 28387711).
The section was incubated with ab317701 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



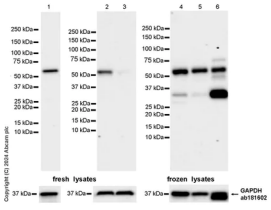
Immunocytochemistry/ Immunofluorescence - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized SH-SY5Y (human neuroblastoma epithelial cell) cells labelling TOR1AIP1 with ab317701 at 1/500 (0.994 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 nuclear envelope staining in SH-SY5Y cell line (shown in green). The counterstain was observed in magenta. 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 (Magenta). 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.



Western blot - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

TOR1AIP1 Western blot staining using rabbit Anti-TOR1AIP1 antibody

Lanes 1-3 were freshly made and used for Western Blotting immediately to minimize protein degradation.

Lanes 1-3 are applied with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 and lanes 4-5 are applied with Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG (Merck DC03L) at 1/5000.

The identity of the band at ~30KDa is unknown.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.
All lanes:
Western blot - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701) at 1/1000 dilution

Lane 1:
SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa (human cervical adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 3:
HeLa transfected with siRNA specifically targeti TOR1AIP1 whole cell lysate at 20 µg

Lane 4:
HeLa whole cell lysate at 20 µg

Lane 5:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 6:
SK-MEL-28 (human malignant melanoma cell) whole cell lysate at 20 µg

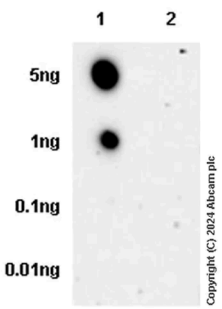
Secondary

Lanes 1 - 3:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Lanes 4 - 5:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG (Merck DC03L) at 1/5000 dilution

Observed band size: 66 kDa, 36 kDa

Exposure time: 48s



Dot Blot - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701)

TOR1AIP1 Dot Blot staining using rabbit Anti-TOR1AIP1 antibody

Dot blot analysis of TOR1AIP1 using ab317701 at 1:1000 (0.497 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution.

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

This antibody does not cross-react with human TOR1AIP2.

All lanes:
Dot Blot - Anti-TOR1AIP1 antibody [EPR29003-34] (ab317701) at 1/1000 dilution

Lane 1:
His-tagged human TOR1AIP1 fragment

Lane 2:
His-tagged human TOR1AIP2 fragment

Secondary

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

Exposure time: 180s

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