abcam

ab263945

Anti-TIA1 antibody [EPR22999-80]

Recombinant | RabMAb | KO Validated | 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	EPR22999-80
Purification technique	Affinity purification Protein A
Concentration	0.638 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/600
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/4000
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 TIA1

Function	RNA-binding protein involved in the regulation of alternative pre-RNA splicing and mRNA translation by binding to uridine-rich (U-rich) RNA sequences (PubMed:11106748, PubMed:12486009, PubMed:17488725, PubMed:8576255).

Binds to U-rich sequences immediately downstream from a 5' splice sites in a uridine-rich small nuclear ribonucleoprotein (U snRNP)-dependent fashion, thereby modulating alternative pre-RNA splicing (PubMed:11106748, PubMed:8576255). Preferably binds to the U-rich IAS1 sequence in a U1 snRNP-dependent manner; this binding is optimal if a 5' splice site is adjacent to IAS1 (By similarity). Activates the use of heterologous 5' splice sites; the activation depends on the intron sequence downstream from the 5' splice site, with a preference for a downstream U-rich sequence (PubMed:11106748). By interacting with SNRPC/U1-C, promotes recruitment and binding of spliceosomal U1 snRNP to 5' splice sites followed by U-rich sequences, thereby facilitating atypical 5' splice site recognition by U1 snRNP (PubMed:11106748, PubMed:12486009, PubMed:17488725). Activates splicing of alternative exons with weak 5' splice sites followed by a U-rich stretch on its own pre-mRNA and on TIAR mRNA (By similarity). Acts as a modulator of alternative splicing for the apoptotic FAS receptor, thereby promoting apoptosis (PubMed:11106748, PubMed:17488725, PubMed:1934064). Binds to the 5' splice site region of FAS intron 5 to promote accumulation of transcripts that include exon 6 at the expense of transcripts in which exon 6 is skipped, thereby leading to the transcription of a membrane-bound apoptotic FAS receptor, which promotes apoptosis (PubMed:11106748, PubMed:17488725, PubMed:1934064). Binds to a conserved AU-rich cis element in COL2A1 intron 2 and modulates alternative splicing of COL2A1 exon 2 (PubMed:17580305). Also binds to the equivalent AT-rich element in COL2A1 genomic DNA, and may thereby be involved in the regulation of transcription (PubMed:17580305). Binds specifically to a polypyrimidine-rich controlling element (PCE) located between the weak 5' splice site and the intronic splicing silencer of CFTR mRNA to promote exon 9 inclusion, thereby antagonizing PTB1 and its role in exon skipping of CFTR exon 9 (PubMed:14966131). Involved in the repression of mRNA translation by binding to AU-rich elements (AREs) located in mRNA 3' untranslated regions (3' UTRs), including target ARE-bearing mRNAs encoding TNF and PTGS2 (By similarity). Also participates in the cellular response to environmental stress, by acting downstream of the stress-induced phosphorylation of EIF2S1/EIF2A to promote the recruitment of untranslated mRNAs to cytoplasmic stress granules (SGs), leading to stress-induced translational arrest (PubMed:10613902). Formation and recruitment to SGs is regulated by Zn(2+) (By similarity). Possesses nucleolytic activity against cytotoxic lymphocyte target cells (PubMed:1934064). Isoform Short. Displays enhanced splicing regulatory activity compared with TIA isoform Long.

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	TIA1 also known as T-cell intracellular antigen 1 is a protein that plays a role in RNA binding and regulation of gene expression. It possesses a molecular mass of approximately 43 kDa. TIA1 is characterized by its presence in the cytoplasm of various cell types including immune cells and neuronal cells. It contains three RNA recognition motifs (RRM) that enable it to interact with its RNA targets and modulate their fate during cellular stress.
Biological function summary	TIA1 functions in the assembly of stress granules which are aggregates of proteins and RNAs that form in response to cellular stress. It is part of a complex dynamic system that regulates mRNA translation by directing untranslated mRNAs to stress granules thereby influencing gene expression at the post-transcriptional level. TIA1 is implicated in apoptosis and can bind with other proteins like HuR to affect mRNA stability and translation.
Pathways	TIA1 participates in stress response signaling and apoptotic pathways. It is involved in the regulation of mRNA metabolism playing a critical role in the cellular stress response pathway by modulating the translation and stability of mRNAs during stress. TIA1 interacts with kinases like JNK to mediate these stress responses and works alongside related proteins including G3BP to organize mRNAs into stress granules.
Associated diseases and disorders	TIA1 has been linked to conditions such as neurodegenerative diseases and certain types of cancer. Mutations or dysregulations in TIA1 expression can lead to disorders characterized by defective stress granule formation and RNA metabolism. In the context of amyotrophic lateral sclerosis (ALS) TIA1 interacts with proteins like TDP-43 which have roles in similar pathological aggregation processes.

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.

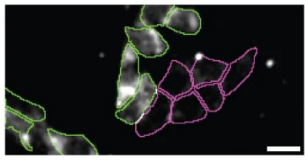
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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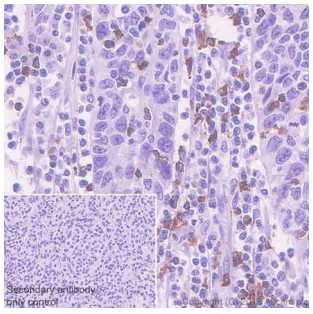
11 product images



Immunocytochemistry/ Immunofluorescence - Anti-TIA1 antibody [EPR22999-80] (ab263945)

ab263945 was shown to react with TIA1 in wild-type HAP1 cells in immunocytochemistry with loss of signal observed in a TIA1 knockout cell line. ab263945 at 1/600 dilution.

These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TIA1 antibody [EPR22999-80] (ab263945)

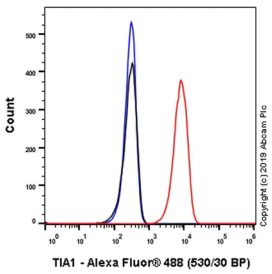
TIA1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TIA1 antibody

Immunohistochemical analysis of paraffin-embedded Human gastric cancer tissue labeling TIA1 with ab263945 at 1/4000 dilution (0.15ug/ml) followed by a ready to use Rabbit specific IHC

polymer detection kit HRP/DAB (ab209101). Positive staining in tumor-infiltrating T-lymphocytes of human gastric cancer (PMID: 10658910) is observed.
The section was incubated with ab256492 for 15 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

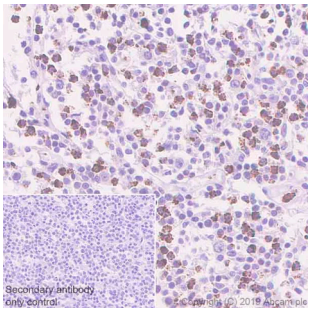
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-TIA1 antibody [EPR22999-80] (ab263945)

TIA1 Flow Cytometry (Intracellular) staining using rabbit Anti-TIA1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized Jurkat (human T cell leukemia T lymphocyte) cells labelling TIA1 with ab263945 at 1/600 dilution (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). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



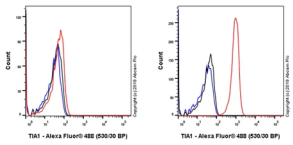
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TIA1 antibody [EPR22999-80] (ab263945)

TIA1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TIA1 antibody

Immunohistochemical analysis of paraffin-embedded Human classical hodgkin lymphoma tissue labeling TIA1 with ab263945 at 1/4000 dilution (0.15ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining in T-lymphocytes of human classical hodgkin lymphoma (PMID: 19096012) is observed.
The section was incubated with ab256492 for 15 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

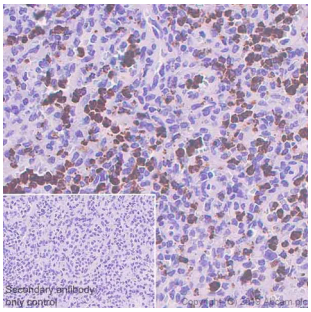
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-TIA1 antibody [EPR22999-80] (ab263945)

TIA1 Flow Cytometry (Intracellular) staining using rabbit Anti-TIA1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized TIA1 knockout HAP1 (TIA1 knockout human chronic myelogenous leukemia near-haploid cell line, (Left) / WT HAP1 (Right) cells labelling TIA1 with ab263945 at 1/600 dilution (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). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



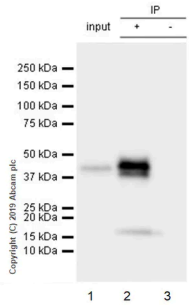
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TIA1 antibody [EPR22999-80] (ab263945)

TIA1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TIA1 antibody

Immunohistochemical analysis of paraffin-embedded Human spleen tissue labeling TIA1 with ab263945 at 1/4000 dilution (0.15ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining in T-lymphocytes of human spleen (PMID: 23510456) is observed.
The section was incubated with ab256492 for 15 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Immunoprecipitation - Anti-TIA1 antibody [EPR22999-80] (ab263945)

TIA1 was immunoprecipitated from 0.35 mg HuT-78 (human Sezary syndrome cutaneous T lymphocyte) whole cell lysate with ab263945 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab263945 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: HuT-78 (human Sezary syndrome cutaneous T lymphocyte) whole cell lysate 10ug

Lane 2: ab263945 IP in HuT-78 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab263945 in HuT-78 whole cell lysate

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

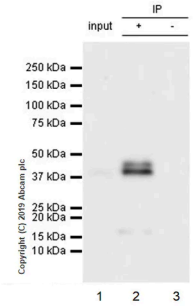
Exposure time: 3 seconds.

Truncated form (~16kDa) of TIA1 was also immunoprecipitated. (PMID: 25224594).

All lanes:
Immunoprecipitation - Anti-TIA1 antibody [EPR22999-80] (ab263945)

Predicted band size: 43 kDa

Observed band size: 16 kDa, 42 kDa, 43 kDa



Immunoprecipitation - Anti-TIA1 antibody [EPR22999-80] (ab263945)

TIA1 was immunoprecipitated from 0.35 mg Jurkat (human T cell leukemia T lymphocyte) whole cell lysate 10ug with ab263945 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab263945 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Jurkat (human T cell leukemia T lymphocyte) whole cell lysate 10ug

Lane 2: ab263945 IP in Jurkat whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab263945 in Jurkat whole cell lysate

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

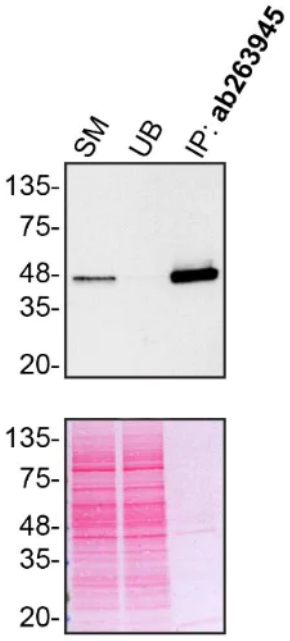
Exposure time: 10 seconds.

Truncated form (~16kDa) of TIA1 was also immunoprecipitated. (PMID: 25224594).

All lanes:
Immunoprecipitation - Anti-TIA1 antibody [EPR22999-80] (ab263945)

Predicted band size: 43 kDa

Observed band size: 16 kDa, 42 kDa, 43 kDa

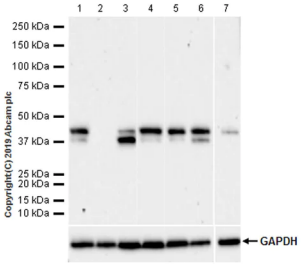


Immunoprecipitation - Anti-TIA1 antibody [EPR22999-80] (ab263945)

Immunoprecipitation of TIA1 in HAP1 cells. Lysates were prepared and immunoprecipitation was performed using 1.0 µg of 86050 pre-coupled to Protein A beads. Samples were then washed and processed for western blot.

These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Immunoprecipitation - Anti-TIA1 antibody [EPR22999-80] (ab263945) at 1 µg

All lanes:
HAP1 cells



Western blot - Anti-TIA1 antibody [EPR22999-80] (ab263945)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID:30533021).

ab263945 was shown to specifically react with TIA1 in wild-type HAP1 cells as signal was lost in TIA1 knockout cells. Wild-type and TIA1 knockout samples were subjected to SDS-PAGE. ab263945 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging. The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument using the ECL technique.

Exposure time: Lanes 1-3: 103 seconds Lane 4: 26 seconds Lanes 5-6: 103 seconds Lane 7: 3 minutes.
All lanes:
Western blot - Anti-TIA1 antibody [EPR22999-80] (ab263945) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
TIA1 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
Jurkat (human T cell leukemia T lymphocyte), whole cell lysate at 20 µg

Lane 4:
HuT-78 (human Sezary syndrome cutaneous T lymphocyte), whole cell lysate at 20 µg

Lane 5:
MOLT-4 (human lymphoblastic leukemia T lymphoblast), whole cell lysate at 20 µg

Lane 6:
K562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate at 20 µg

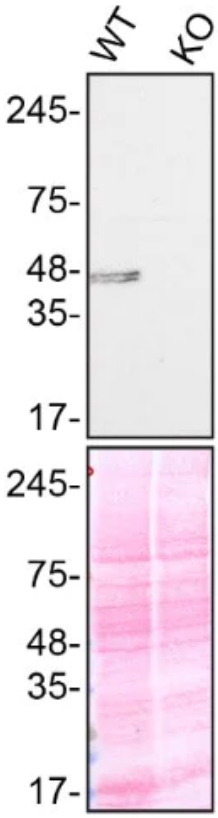
Lane 7:
Human tonsil tissue lysate at 20 µg

Secondary

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

Predicted band size: 43 kDa

Observed band size: 42 kDa, 43 kDa



Western blot - Anti-TIA1 antibody [EPR22999-80] (ab263945)

ab263945 was shown to react with TIA1 in wild-type HAP1 cells in Western blot with loss of signal observed in a TIA1 knockout cell line. Wild-type HAP1 and TIA1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab263945 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.

These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-TIA1 antibody [EPR22999-80] (ab263945) at 1/1000 dilution

Lane 1:
Wild-type HAP1 lysate at 50 µg

Lane 2:
TIA1 knock-out HAP1 lysate at 50 µg

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