abcam

ab154862

Anti-TRIM56 antibody [EPR10583]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR10583
Purification technique	Affinity purification Protein A
Concentration	0.703 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/1000
Notes	For unpurifed use at 1/50 -1/100 dilution. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/70
Notes	For unpurified use at 1/100 - 1/250 dilution.

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. For unpurified use at 1/100 - 1/500 dilution.

Target data

See full target information TRIM56

Function E3 ubiquitin-protein ligase that plays a key role in innate antiviral immunity by mediating ubiquitination of CGAS and STING1 (PubMed:21289118, PubMed:29426904). In response to pathogen- and host-derived double-stranded DNA (dsDNA), targets STING1 to 'Lys-63'-linked ubiquitination, thereby promoting its homodimerization, a step required for the production of type I interferon IFN-beta (By similarity). Also mediate monoubiquitination of CGAS, thereby promoting CGAS oligomerization and subsequent activation (PubMed:29426904). Promotes also TNFalpha-induced NF-kappa-B signaling by mediating 'Lys-63'-linked ubiquitination TAK1, leading to enhanced interaction between TAK1 and CHUK/IKKalpha (PubMed:35952808). Independently of its E3 ubiquitin ligase activity, positive regulator of TLR3 signaling. Potentiates extracellular double stranded RNA (dsRNA)-induced expression of IFNB1 and interferon-stimulated genes ISG15, IFIT1/ISG56, CXCL10, OASL and CCL5/RANTES (PubMed:22948160).

Promotes establishment of an antiviral state by TLR3 ligand and TLR3-mediated chemokine induction following infection by hepatitis C virus (PubMed:22948160). Acts as a restriction factor of Zika virus through direct interaction with the viral RNA via its C-terminal region (PubMed:31251739).

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	TRIM56 also known as Tripartite Motif Containing 56 or RNF109 is a protein involved in various cellular mechanisms. It weighs around 79 kDa and is expressed

	in many tissues including the spleen lymph nodes and lungs. TRIM56 contains a RING finger domain B-box motifs and a coiled-coil region which are typical features of the TRIM protein family. These domains suggest roles in ubiquitination and protein-protein interactions which are essential for its functions in signaling and regulatory processes.
Biological function summary	TRIM56 participates in immune regulation and antiviral defense. It acts as an interferon-stimulated gene product and does not appear to be part of a larger protein complex. Instead it induces antiviral states by mediating the innate immune response to viral infections. TRIM56 enhances the production of type I interferons by modifying the activation pathways. This function places TRIM56 as an immune defense agent which can restrict the replication of various viruses such as flaviviruses and coronaviruses therefore harboring significant implications in pathogen defense responses.
Pathways	TRIM56 integrates into the antiviral and innate immunity pathways. It prominently situates within the interferon signaling pathway enhancing the body's defense through the upregulation of interferon production. TRIM56 interacts with several proteins in these pathways including STING and MAVS which are known to be important mediators in the recognition of viral presence. Through these interactions TRIM56 facilitates the activation of downstream signaling cascades leading to the expression of interferon-stimulated genes.
Associated diseases and disorders	TRIM56 exhibits significant connections to viral infections and autoimmune diseases. Its role in antiviral responses implicates it in diseases like hepatitis C as it can suppress viral replication. Although TRIM56 aids in defending against infections its dysregulation may also link to autoimmune conditions where its interaction with proteins such as IFNAR1 can result in excessive immune responses leading to tissue damage and inflammation. Such dual roles highlight TRIM56 as an important regulator in both protective and pathological immune responses.

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

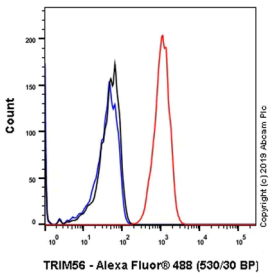
We do not recommend this combination. It is not covered by our product promise.

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.

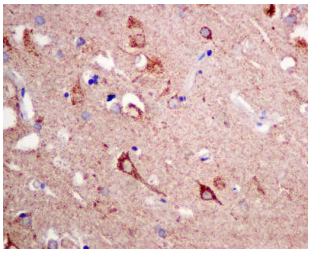
12 product images



Flow Cytometry (Intracellular) - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Flow Cytometry (Intracellular) staining using rabbit Anti-TRIM56 antibody

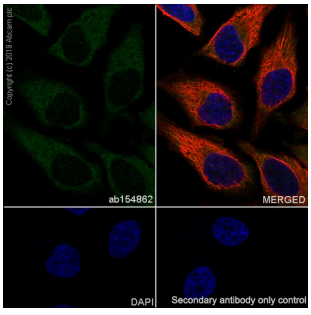
Intracellular Flow Cytometry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling TRIM56 with purified ab154862 at 1/70 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) 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).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TRIM56 antibody

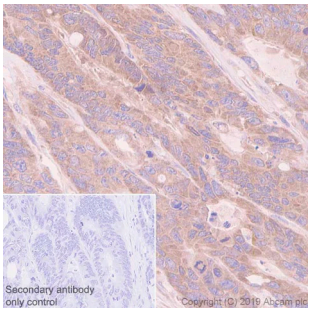
Immunohistochemical analysis of paraffin-embedded Human brain tissue labeling TRIM56 with ab154862 (unpurified) at 1/50.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TRIM56 antibody

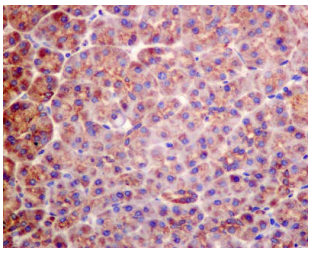
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling TRIM56 with purified ab154862 at 1/70 dilution (10 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1/200 (2.5 µg/ml) dilution. 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TRIM56 antibody

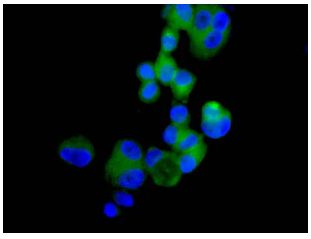
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon cancer tissue sections labeling TRIM56 with purified ab154862 at 1/1000 dilution (0.691 µg/ml). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TRIM56 antibody

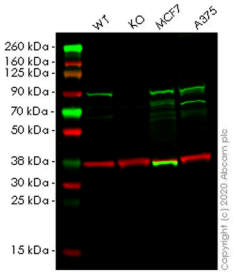
Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labeling TRIM56 with ab154862 (unpurified) at 1/50.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TRIM56 antibody

Immunofluorescent analysis of MCF7 cells labeling TRIM56 with ab154862 (unpurified) at 1/100.



Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

Lanes 1-4: Merged signal (red and green). Green - ab154862 observed at 88 kDa. Red - loading control ab8245 observed at 36 kDa.
ab154862 Anti-TRIM56 antibody [EPR10583] was shown to specifically react with TRIM56 in wild-type A549 cells. Loss of signal was observed when knockout cell line ab267063 (knockout cell lysate ab258250) was used. Wild-type and TRIM56 knockout samples were subjected to SDS-PAGE. ab154862 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 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862) at 1/1000 dilution

Lane 1:
Wild-type A549 (Human lung carcinoma cell line) whole cell lysate at 20 µg

Lane 2:
Western blot - Human TRIM56 knockout A549 cell lysate (ab258250) at 20 µg

Lane 3:
MCF7 (Human breast adenocarcinoma cell line) whole cell lysate at 20 µg

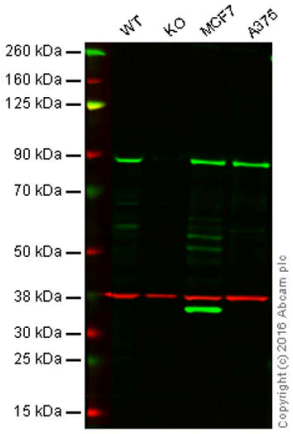
Lane 4:
A-375 (Human malignant melanoma cell line) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 81 kDa

Observed band size: 88 kDa



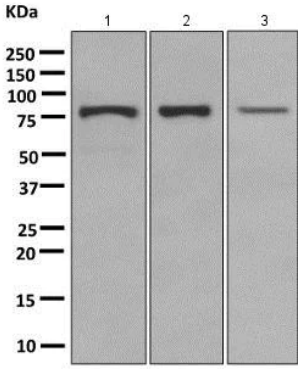
Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: TRIM56 knockout HAP1 cell lysate (20 µg)
Lane 3: MCF7 cell lysate (20 µg)
Lane 4: A375 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab154862 observed at 88 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab154862 (unpurifed) was shown to recognize TRIM56 when TRIM56 knockout samples were used, along with additional cross-reactive bands. Wild-type and TRIM56 knockout samples were subjected to SDS-PAGE. ab154862 and ab8245 (loading control to GAPDH) were both diluted 1/10000 and incubated overnight at 4°C. 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 1/10000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

Predicted band size: 81 kDa



Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

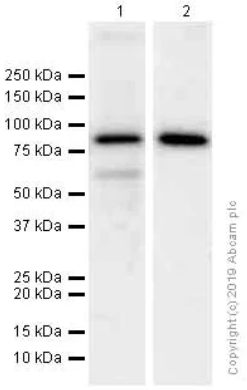
All lanes:
Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862) at 1/10000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
A375 cell lysate at 10 µg

Lane 3:
MCF7 cell lysate at 10 µg

Predicted band size: 81 kDa



Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

All lanes:
Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862) at 1/50000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 15 µg

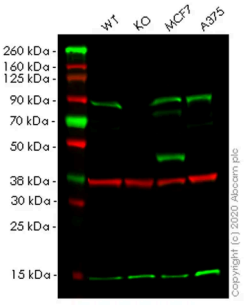
Lane 2:
A375 (Human malignant melanoma epithelial cell) whole cell lysates at 15 µg

Secondary

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

Predicted band size: 81 kDa

Observed band size: 81 kDa



Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

Lanes 1-4: Merged signal (red and green). Green - ab154862 observed at 88 kDa. Red - loading control ab8245 observed at 36 kDa.
ab154862 Anti-TRIM56 antibody [EPR10583] was shown to specifically react with TRIM56 in wild-type A549 cells. Loss of signal was observed when knockout cell line ab267062 (knockout cell lysate ab258249) was used. Wild-type and TRIM56 knockout samples were subjected to SDS-PAGE. ab154862 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 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862) at 1/1000 dilution

Lane 1:
Wild-type A549 (Human lung carcinoma cell line) whole cell lysate at 20 µg

Lane 2:
Western blot - Human TRIM56 knockout A549 cell lysate (ab258249) at 20 µg

Lane 3:
MCF7 (Human breast adenocarcinoma cell line) whole cell lysate at 20 µg

Lane 4:
A-375 (Human malignant melanoma cell line) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 81 kDa

Observed band size: 88 kDa

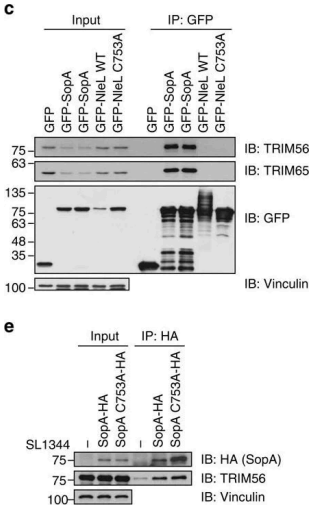


Image collected and cropped by CiteAb under a

Western blot - Anti-TRIM56 antibody [EPR10583] (ab154862)

TRIM56 western blot using anti-TRIM56 antibody [EPR10583] ab154862. Publication image and figure legend from Fiškin, E., Bhogaraju, S., et al., 2017, Nat Commun, PubMed 28084320.

ab154862 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab154862 please see the product overview.

Identification of TRIM56 and TRIM65 as SopA-interacting proteins.(a) Workflow for SILAC-coupled SopA interactome analysis from inducible HeLa Flp-In T-REx GFP-SopA-expressing cells. (b) SopA interacts with TRIM56 and TRIM65. Scatter plot of forward and reverse SILAC SopA interactome. Proteins situated in the upper left quadrant include contaminants. (c) Endogenous TRIM56 and TRIM65 specifically interact with SopA. Lysates from HEK293T cells expressing GFP, GFP-SopA or GFP-NleL constructs were subjected to anti-GFP IP, followed by SDS–PAGE and immunoblot. (d) Bacterially translocated SopA interacts with TRIM56/65. Scatter plot of forward and reverse SILAC interactome experiments from Salmonella-infected HeLa cells. Proteins situated in the upper left

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quadrant include contaminants. (e) Endogenous TRIM56 interacts with bacterially secreted SopA during infection. Lysates from HeLa cells infected with SL1344 WT, SopA–HA or catalytic-dead SopA C753A-HA-expressing strains were subjected to anti-HA IP, followed by SDS–PAGE and immunoblot.

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