abcam

ab154821

# Anti-TRIM56 antibody [EPR10582]

Recombinant | RabMAb | KO Validated

## 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** | EPR10582 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.566 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### WB

#### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 - 1/10000 |
| **Notes** | - |

### IHC-P

**Not recommended**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

**Tested**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/50 - 1/100 |
| **Notes** | - |

## Flow Cyt (Intra)

**Tested**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

# 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**

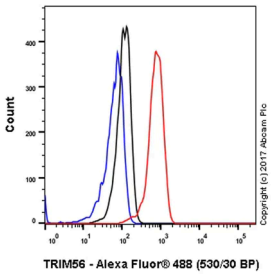
We do not recommend this combination. It is not covered by our product promise.

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.

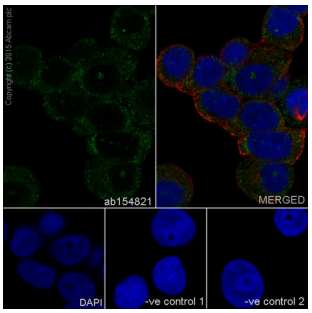
## 8 product images




### Flow Cytometry (Intracellular) - Anti-TRIM56 antibody [EPR10582] (ab154821)

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

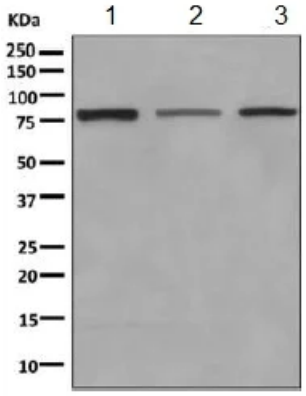
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling TRIM56 with purified ab154821 at 1/50 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) (ab172730) was used as the isotype control, Cell without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.




### Immunocytochemistry/ Immunofluorescence - Anti-TRIM56 antibody [EPR10582] (ab154821)

TRIM56 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TRIM56 antibody

ab154821 staining TRIM56 in MCF-7 (human breast carcinoma) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody. ab7291 and ab150120 were used as counterstains for primary antibody ab154821 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.
**Negative control 1**: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
**Negative control 2:** Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)




## Western blot - Anti-TRIM56 antibody [EPR10582] (ab154821)

TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

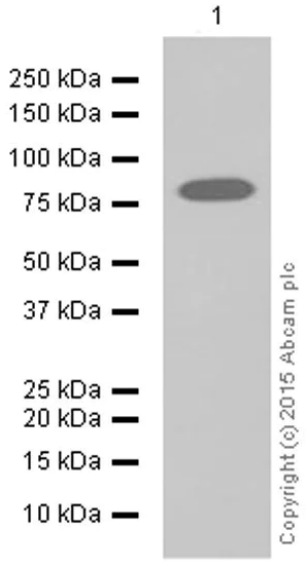
All lanes:
Western blot - Anti-TRIM56 antibody [EPR10582] (ab154821) at 1/1000 dilution

Lane 1:
MCF 7 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
A375 cell lysate at 10 µg

Predicted band size: 81 kDa




## Western blot - Anti-TRIM56 antibody [EPR10582] (ab154821)

TRIM56 Western blot staining of MCF-7 (human breast carcinoma) whole cell lysates using rabbit Anti-TRIM56 antibody

All lanes:
Western blot - Anti-TRIM56 antibody [EPR10582] (ab154821) at 1/1000 dilution

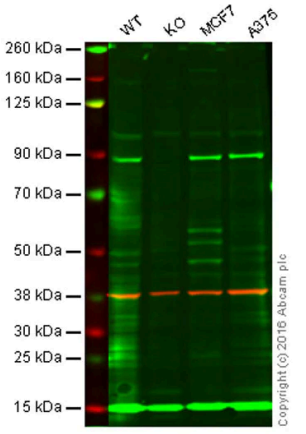
All lanes:
MCF-7 (human breast carcinoma) whole cell lysates at 10 µg

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 [EPR10582] (ab154821)

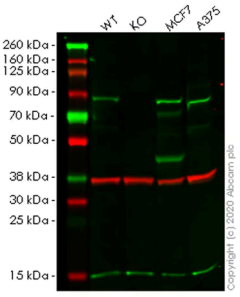
TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

**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 - ab154821 observed at 88 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab154821 was shown to specifically react with TRIM56 when TRIM56 knockout samples were used. Wild-type and TRIM56 knockout samples were subjected to SDS-PAGE. ab154821 and ab8245 (loading control to GAPDH) were diluted 1/1000 and 1/10000 respectively and incubated overnight at 4°C. Blots were developed withGoat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) andGoat 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 [EPR10582] (ab154821)

Predicted band size: 81 kDa




## Western blot - Anti-TRIM56 antibody [EPR10582] (ab154821)

TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

**Lanes 1-4:** Merged signal (red and green). Green - ab154821 observed at 88 kDa. Red - loading control ab8245 observed at 36 kDa.
ab154821 Anti-TRIM56 antibody [EPR10582] 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. ab154821 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 [EPR10582] (ab154821) 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

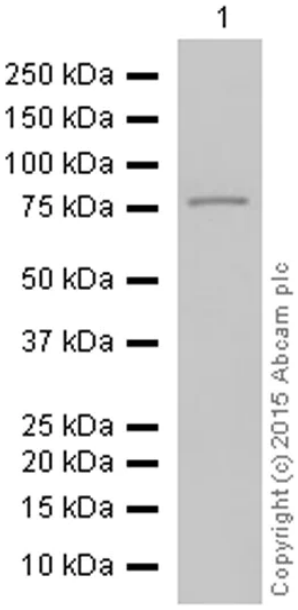
Lane 4:
A-375 (Human malignant melanoma cell line) whole cell lysate at 20 µg

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 [EPR10582] (ab154821)

All lanes:
Western blot - Anti-TRIM56 antibody [EPR10582] (ab154821) at 1/5000 dilution

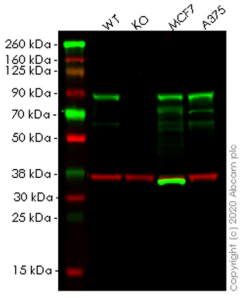
All lanes:
A549 (human lung carcinoma) whole cell lysates at 20 µg

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 [EPR10582] (ab154821)

TRIM56 Western blot staining using rabbit Anti-TRIM56 antibody

**Lanes 1-4:** Merged signal (red and green). Green - ab154821 observed at 88 kDa. Red - loading control ab8245 observed at 36 kDa.
ab154821 Anti-TRIM56 antibody [EPR10582] 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. ab154821 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 [EPR10582] (ab154821) 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)

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

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