abcam

ab314899

Anti-Zinc finger antiviral protein antibody [EPR28538-63]

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	EPR28538-63
Purification technique	Affinity purification Protein A
Concentration	0.506 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

Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Rat, Mouse
Dilution info	-
Notes	-

Target data

See full target information ZC3HAV1

Function	Antiviral protein which inhibits the replication of viruses by recruiting the cellular RNA degradation machineries to degrade the viral mRNAs. Binds to a ZAP-responsive element (ZRE) present in the target viral mRNA, recruits cellular poly(A)-specific ribonuclease PARN to remove the poly(A) tail, and the 3'-5' exoribonuclease complex exosome to degrade the RNA body from the 3'-end. It also recruits the decapping complex DCP1-DCP2 through RNA helicase p72 (DDX17) to remove the cap structure of the viral mRNA to initiate its degradation from the 5'-end. Its target viruses belong to families which include retroviridae, including human immunodeficiency virus type 1, filoviridae: ebola virus (EBOV) and marburg virus (MARV), togaviridae: sindbis virus (SINV) and Ross river virus (RRV). Specifically targets the multiply spliced but not unspliced or singly spliced HIV-1 mRNAs for degradation. Isoform 1. Exhibits stronger antiviral activity than isoform 2 against MuLV expression and Semliki forest virus infection (PubMed:18225958). Increased antiviral activity may be due to more efficient targeting to endocytic membranes through S-farnesylation (By similarity). Similarly to isoform 2, prevents HIV-1 infection (PubMed:21876179). Isoform 2. Positive regulator of RIGI signaling during the innate antiviral immune response. Associates with RIGI to promote its oligomerization and ATPase activity stimulation, leading to robust activation of IRF3 and NF-kappa-B transcription factors and eventually to the expression of type I IFNs and IFN stimulated genes (ISGs) (PubMed:21102435). Similarly to isoform 1, prevents HIV-1 infection (PubMed:21876179).

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	Zinc finger antiviral protein (ZAP) also known as zinc antiviral is a cellular protein that plays an important role in antiviral defense. ZAP recognizes and binds to the CpG dinucleotide-rich regions of viral RNA targeting them for degradation and preventing viral replication. This protein has a molecular mass of around 100 kDa and is encoded by the ZC3HAV1 gene. ZAP predominantly expresses in the cytoplasm of various cells notably in immune cells where it carries out its antiviral function against a wide range of viruses.
Biological function summary	Zinc finger antiviral protein serves a critical role in the innate immune response. ZAP is part of a complex involving several cofactors that facilitate its antiviral activity. This protein collaborates with TRIM25 and AGO2 to recruit RNA degradation machinery targeting viral mRNA for decay. ZAP's interactions highlight its importance in the cellular response to viral infection making it an attractive target for developing antiviral therapies.
Pathways	Zinc finger antiviral protein is integral to the interferon signaling and viral RNA degradation pathways. Interferon signaling initiates the expression of ZAP linking it with other interferon-stimulated genes to enhance the antiviral response. Within the RNA degradation pathway ZAP coordinates with proteins like TRIM25 augmenting the destruction of viral genetic material. These pathways highlight the protein's role in suppressing viral replication and promoting cell survival during infections.
Associated diseases and disorders	Zinc finger antiviral protein plays a significant role in conditions associated with viral infections and autoimmune disorders. ZAP confers protection against diseases like Hepatitis B and C by inhibiting viral RNA. Apart from infectious diseases ZAP interacts with proteins like HRAS and IRF3 suggesting its involvement in autoimmune conditions where viral components trigger immune responses.

This relationship opens possibilities for therapeutic intervention by modulating ZAP activity in disease contexts.

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

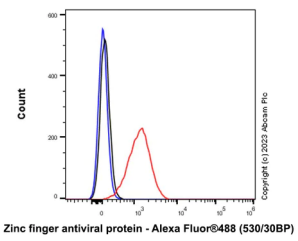
We do not recommend this combination. It is not covered by our product promise.

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.

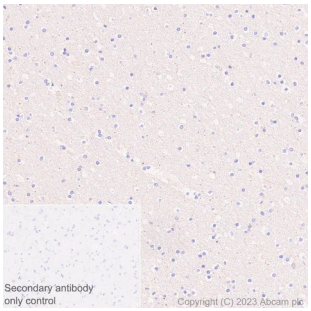
Full details and terms and conditions can be found here:
Terms & Conditions.

9 product images



Flow Cytometry (Intracellular) - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling Zinc finger antiviral protein with ab314899 at 1/500 dilution (0.1 ug)/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, ab150081) at 1/5000 dilution was used as the secondary antibody.



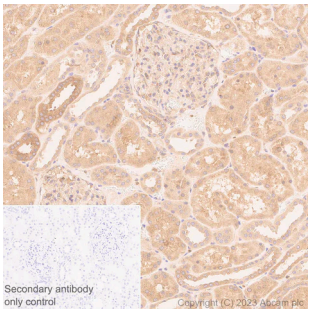
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

Zinc finger antiviral protein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum using rabbit Anti-Zinc finger antiviral protein antibody

Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling Zinc finger antiviral protein with ab314899 at 1/100 (5.06 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Low expression: weak staining on human cerebrum (PMID: 12215647). The section was incubated with ab314899 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.

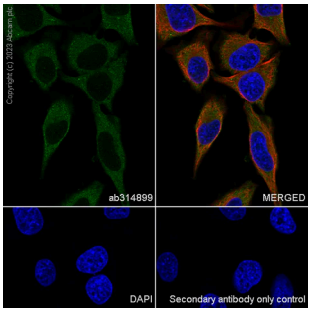


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling Zinc finger antiviral protein with ab314899 at 1/100 (5.06 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human kidney. The section was incubated with ab314899 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).

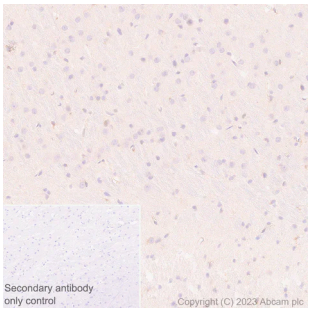
Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunocytochemistry/ Immunofluorescence - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling Zinc finger antiviral protein with ab314899 at 1/50 (10.12 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 cytoplasmic staining in HeLa cell line. 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 (Red). 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

Zinc finger antiviral protein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebrum using rabbit Anti-Zinc finger antiviral protein antibody

Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue labeling Zinc finger antiviral protein with ab314899 at 1/100 (5.06 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Low expression: weak staining on rat cerebrum. The section was incubated with ab314899 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.

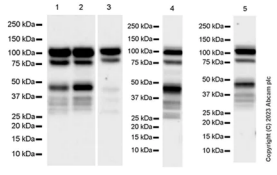


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

Immunohistochemical analysis of paraffin-embedded rat liver tissue labeling Zinc finger antiviral protein with ab314899 at 1/100 (5.06 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on rat liver. The section was incubated with ab314899 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.



Western blot - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

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

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

The molecular weight observed is consistent with what has been described in the literature (PMID: 29182509).

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

Exposure time: Lanes 1-3: 81 seconds; Lanes 4-5: 59 seconds.

All lanes:
Western blot - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899) at 1/1000 dilution

Lane 1:

HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 3:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate at 20 µg

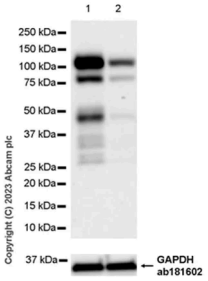
Lane 4:
A431 (human epidermoid carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
HCT 116 (human colorectal carcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

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

Observed band size: 101 kDa, 78 kDa, 40 kDa



Western blot - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

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

The molecular weight observed is consistent with what has been described in the literature (PMID: 29182509).

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899) at 1/1000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

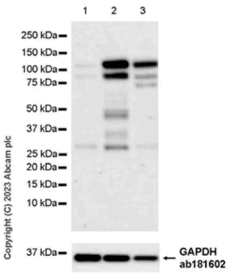
Lane 2:
HeLa transfected with siRNA specifically targeting ZC3HAV1 whole cell lysate at 20 µg

Secondary

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

Observed band size: 101 kDa, 78 kDa, 40 kDa, 36 kDa

Exposure time: 81s



Western blot - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899)

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

Low expression: brain (PMID: 12215647).

The molecular weight observed is consistent with what has been described in the literature (PMID: 29182509).

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Zinc finger antiviral protein antibody [EPR28538-63] (ab314899) at 1/1000 dilution

Lane 1:
Rat brain tissue lysate at 20 µg

Lane 2:
Rat liver tissue lysate at 20 µg

Lane 3:
Rat testis tissue lysate at 20 µg

Secondary

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

Observed band size: 101 kDa, 78 kDa, 40 kDa, 36 kDa

Exposure time: 180s

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