abcam

ab233545

Anti-IFITM1 antibody [EPR22620-12]

Recombinant | RabMAb

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	EPR22620-12
Purification technique	Affinity purification Protein A
Concentration	0.53 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	1/2000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
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.

Target data

See full target information IFITM1

Function	IFN-induced antiviral protein which inhibits the entry of viruses to the host cell cytoplasm, permitting endocytosis, but preventing subsequent viral fusion and release of viral contents into the cytosol. Active against multiple viruses, including

influenza A virus, SARS coronaviruses (SARS-CoV and SARS-CoV-2), Marburg virus (MARV), Ebola virus (EBOV), Dengue virus (DNV), West Nile virus (WNV), human immunodeficiency virus type 1 (HIV-1) and hepatitis C virus (HCV) (PubMed:26354436, PubMed:33270927). Can inhibit: influenza virus hemagglutinin protein-mediated viral entry, MARV and EBOV GP1,2-mediated viral entry and SARS-CoV and SARS-CoV-2 S protein-mediated viral entry. Also implicated in cell adhesion and control of cell growth and migration (PubMed:33270927). Inhibits SARS-CoV-2 S protein-mediated syncytia formation (PubMed:33051876). Plays a key role in the antiproliferative action of IFN-gamma either by inhibiting the ERK activation or by arresting cell growth in G1 phase in a p53-dependent manner. Acts as a positive regulator of osteoblast differentiation. In hepatocytes, IFITM proteins act in a coordinated manner to restrict HCV infection by targeting the endocytosed HCV virion for lysosomal degradation (PubMed:26354436). IFITM2 and IFITM3 display anti-HCV activity that may complement the anti-HCV activity of IFITM1 by inhibiting the late stages of HCV entry, possibly in a coordinated manner by trapping the virion in the endosomal pathway and targeting it for degradation at the lysosome (PubMed:26354436).

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	IFITM1 also known as Interferon-Induced Transmembrane Protein 1 has a molecular weight of approximately 14 kDa. It is a transmembrane protein that plays an important role in host defense mechanisms. IFITM1 is expressed in various tissues including the respiratory tract gastrointestinal tract and the immune system where it serves in defending against pathogenic infections. The protein is usually found on the cell membrane and becomes highly expressed in response to interferon signaling.
Biological function summary	This protein inhibits viral entry by restricting the fusion of viral membranes with host cell membranes. IFITM1 does not function alone; it is part of the IFITM family which includes IFITM2 and IFITM3 each contributing to antiviral defense. The protein is strategically positioned to prevent the spread of viruses by blocking them from entering new cells which is important for managing viral propagation.
Pathways	IFITM1 engages the innate immune response pathway responding to viral infections by acting as a barrier to viral entry. It works alongside related proteins such as IFITM2 and IFITM3 within this pathway. IFITM1 is also part of the interferon pathway where its expression is upregulated in response to interferon signals. This relationship highlights its role in the immune response acting as a frontline protector against the invasion of viruses like influenza and others.
Associated diseases and disorders	IFITM1 has a significant role in the context of viral infections and certain cancers. It is linked to resistance to viral infections such as influenza showing its importance in antiviral defense. In cancer aberrant expression of IFITM1 is observed in various types including breast and colorectal cancers impacting tumor progression and metastasis. The relationship of IFITM1 with interferon signaling highlights potential therapeutic targets where modulating its activity could influence disease outcomes.

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

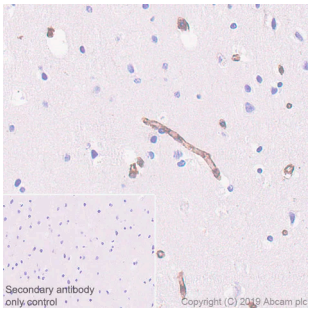
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

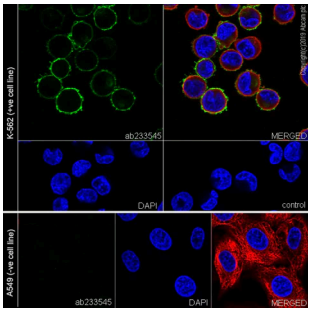
IFITM1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-IFITM1 antibody

Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling IFITM1 with ab233545 at 1/2000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on blood vessels of human cerebrum (PMID: 24603679). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is 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.

The section was incubated with ab233545 for 10 mins at room temperature.

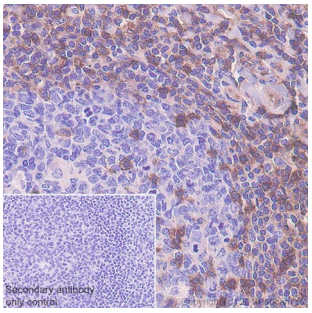
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunocytochemistry/ Immunofluorescence - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

IFITM1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-IFITM1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized K562 (human chronic myelogenous leukemia cell line from bone marrow) or A549 (human lung carcinoma cell line) cells labeling IFITM1 with ab233545 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous staining in K-562 cells. **Negative control**: A549 (PMID: 25105503). The nuclear cpounter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).
PBS only control: Use PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

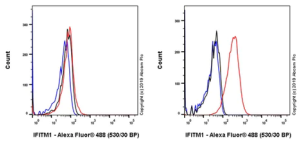
IFITM1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-IFITM1 antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling IFITM1 with ab233545 at 1/2000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on lymphocytes of human tonsil is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is 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.

The section was incubated with ab233545 for 10 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

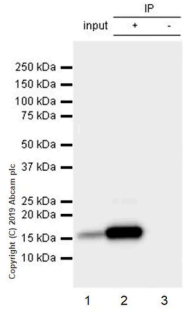


Flow Cytometry (Intracellular) - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

IFITM1 Flow Cytometry (Intracellular) staining using rabbit Anti-IFITM1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-fixed K562 (human chronic myelogenous leukemia cell line from bone marrow) (Right) or A549 (human lung carcinoma cell line) (Left) cells labeling IFITM1 with ab233545 at 1/500 (red) compared with a Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue).
Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.

Negative control: A549 (PMID: 25105503).



Immunoprecipitation - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

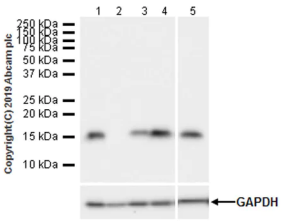
IFITM1 was immunoprecipitated from 0.35 mg of K562 (human chronic myelogenous leukemia cell line from bone marrow) whole cell lysate with ab233545 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab233545 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used as secondary antibody at 1/5000 dilution.
Lane 1: K562 whole cell lysate 10 µg (Input).
Lane 2: ab233545 IP in K562 whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab233545 in K562 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds.

All lanes:
Immunoprecipitation - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

Predicted band size: 13 kDa

Observed band size: 17 kDa



Western blot - Anti-IFITM1 antibody [EPR22620-12] (ab233545)

Blocking and dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 25105503) IFN-α induce the expression of IFITM1(PMID: 27852071).

Negative control: A549 (PMID: 25105503).

All lanes:
Western blot - Anti-IFITM1 antibody [EPR22620-12] (ab233545) at 1/2000 dilution

Lane 1:
K562 (human chronic myelogenous leukemia cell line from bone marrow) whole cell lysate at 20 µg

Lane 2:
A549 (human lung carcinoma cell line) whole cell lysate at 20 µg

Lane 3:
Untreated HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 4:
HeLa, treated with 10ng/ml hIFN-α for 16 hours, whole cell lysate at 20 µg

Lane 5:
TF-1 (human bone marrow erythroleukemia cell line) whole cell lysate at 20 µg

Secondary

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

Predicted band size: 13 kDa

Observed band size: 17 kDa

Exposure time: 8s

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