abcam

ab305302

Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free)

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR27276-63
Purification technique	Affinity purification Protein A
Concentration	1.038 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information IFIT1

Function

Plays a key role in the innate immune response as part of an interferon-dependent multiprotein complex, recognizing and sequestering viral RNAs that lack host-specific 2'-O-methylation at their 5' cap. By distinguishing these RNAs from host mRNAs, inhibits their translation by competing with the translation initiation factor eIF4E (PubMed:21642987, PubMed:27240734, PubMed:39009378, PubMed:23334420, PubMed:28251928, PubMed:36285486). Could also prevent viral replication through its interaction with DNA replication origin-binding protein E1 of several viruses. Causes the translocation of E1 from the nucleus to the cytoplasm and can also inhibit its helicase activity in vitro (PubMed:19008854,

PubMed:21976647). Exhibits antiviral activity against many viruses from the Flaviviridae (West Nile virus, Dengue virus, hepatitis C virus), Coronaviridae (human 229E coronavirus, SARS-CoV-2 and SARS-CoV), Poxviridae (vaccinia virus) and Togaviridae (Sindbis virus) families (PubMed:19008854, PubMed:21976647, PubMed:28251928, PubMed:36285486).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	IFIT1 also known as Interferon-Induced Protein with Tetratricopeptide Repeats 1 is a protein that plays a significant role in antiviral defense mechanisms. It has a molecular mass of approximately 56 kDa. Researchers find IFIT1 predominantly expressed in cells stimulated by interferons. The protein detects viral single-stranded RNA which in turn helps initiate the antiviral response. You will find IFIT1 in various cell types mainly those exposed to viral infections as it is an important part of the body's innate immune system.
Biological function summary	Activities of IFIT1 focus on inhibiting viral replication and translation processes. The protein binds to viral RNAs via its distinctive sensor domains preventing infections from progressing. IFIT1 operates often as part of a larger protein complex with other IFIT family members improving its ability to intercept and inhibit viral RNA. This concerted action provides an important line of defense against diverse viral pathogens by interfering with viral protein synthesis.
Pathways	IFIT1 occupies an important place in the interferon signaling pathways particularly the Jak-STAT pathway. This pathway is critical for mounting antiviral responses when viral infections occur. Through its interactions within the pathway IFIT1 works together with related proteins like IFIT2 and IFIT3 to repel viral threats. By integrating into these pathways it contributes to amplifying the immune response promoting a robust defense system against foreign viral invaders.
Associated diseases and disorders	IFIT1 is associated mainly with viral diseases such as influenza and hepatitis C. Its role in these diseases involves preventing the communication and replication of the viruses making it a pivotal part of antiviral therapeutic research. Additionally proteins like RIG-I interact with IFIT1 during these processes to recognize viral RNA enhancing the effectiveness of the immune response. These protein partnerships drive ongoing research looking to leverage IFIT1's antiviral properties for treatment developments.

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

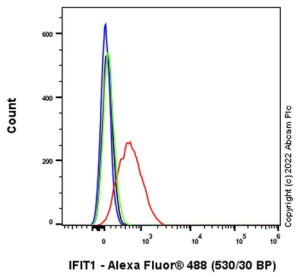
We do not recommend this combination. It is not covered by our product promise.

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.

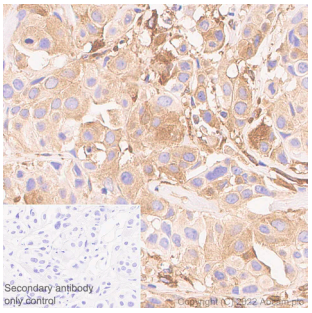
Full details and terms and conditions can be found here:
Terms & Conditions.

8 product images



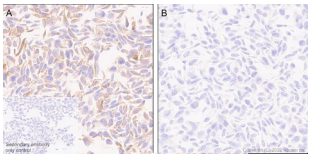
Flow Cytometry (Intracellular) - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) treated with 10ng/ml human IFN alpha 1 for 16 hours (Red) / Untreated control (Green) cells labeling IFIT1 with ab305301 at 1/500 dilution (0.1ug) (Red) and Green (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



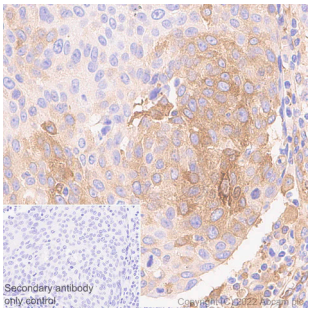
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded human breast cancer tissue labeling IFIT1 with ab305301 at 1/2000 (0.261 ug/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Cytoplasmic staining on human breast cancer (PMID: 23528130). The section was incubated with ab305301 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 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.



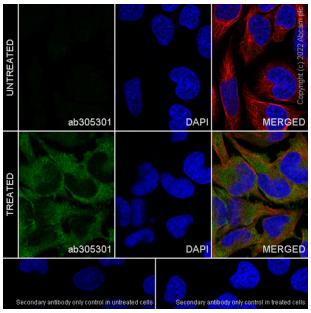
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded HeLa cell pellet labeling IFIT1 with ab305301 at 1/2000 (0.261 ug/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Cytoplasmic staining on HeLa cell pellet treated with IFN-alpha 1(10ng/ml) for 16 hours, no staining on HeLa cell pellet (untreated). The section was incubated with ab305301 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 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.



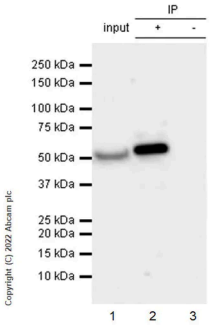
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue labeling IFIT1 with ab305301 at 1/2000 (0.261 ug/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Cytoplasmic staining on human lung carcinoma (PMID: 35280763). The section was incubated with ab305301 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 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-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labeling IFIT1 with ab305301 at 1/50 (10.44 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 weak cytoplasmic staining in HeLa cell line, and the expression increased after treatment with IFN alpha 1 (10 ng/ml) for 16 hours. The 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 dilution (2.5 ug/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.



Immunoprecipitation - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. IFIT1 was immunoprecipitated from 0.35 mg HeLa (human cervical adenocarcinoma epithelial cell) treated with 10ng/ml IFN alpha 1 for 16h whole cell lysate 10 ug with ab305301 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab305301 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HeLa treated with 10ng/ml IFN alpha 1 for 16h whole cell lysate 10 ug Lane 2: ab305301 IP in HeLa treated with 10ng/ml IFN alpha 1 for 16h whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab305301 in HeLa whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 41 seconds.
All lanes:
Immunoprecipitation - Anti-IFIT1 antibody [EPR27276-63] (ab305301) at 1/1000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) treated with 10ng/ml IFN alpha 1 for 16h whole cell lysate 10 µg

Lane 2:
HeLa treated with 10ng/ml IFN alpha 1 for 16h whole cell lysate

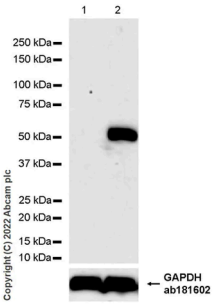
Secondary

All lanes:

Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 56 kDa

Exposure time: 41s



Western blot - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 180 seconds
All lanes:
Western blot - Anti-IFIT1 antibody [EPR27276-63] (ab305301) at 1/1000 dilution

Lane 1:
Untreated HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate 20 µg

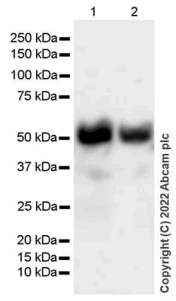
Lane 2:
HeLa treated with /ml IFN alpha 1 for 16h whole cell lysate 20 µg

Secondary

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

Observed band size: 56 kDa

Exposure time: 180s



Western blot - Anti-IFIT1 antibody [EPR27276-63] (BSA and Azide free) (ab305302)

This data was developed using ab305301, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 26 seconds
All lanes:
Western blot - Anti-IFIT1 antibody [EPR27276-63] (ab305301) at 1/1000 dilution

Lane 1:
Human tonsil tissue lysate 40 µg

Lane 2:
Human testis tissue lysate 40 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 56 kDa

Exposure time: 26s

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