

Anti-IRF3 antibody [EPR2418Y] - 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	EPR2418Y
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Target data

[See full target information IRF3](#) 

Function

Key transcriptional regulator of type I interferon (IFN)-dependent immune responses which plays a critical role in the innate immune response against DNA and RNA viruses (PubMed:22394562, PubMed:24049179, PubMed:25636800, PubMed:27302953, PubMed:31340999, PubMed:36603579, PubMed:8524823, PubMed:39362857). Regulates the transcription of type I IFN genes (IFN-alpha and IFN-beta) and IFN-stimulated genes (ISG) by binding to an interferon-stimulated response element (ISRE) in their promoters (PubMed:11846977, PubMed:16846591, PubMed:16979567, PubMed:20049431, PubMed:32972995, PubMed:36603579, PubMed:8524823). Acts as a more potent activator of the IFN-beta (IFNB) gene than the IFN-alpha (IFNA) gene and plays a critical role in both the early and late phases of the IFNA/B gene induction (PubMed:16846591, PubMed:16979567, PubMed:20049431, PubMed:36603579). Found in an inactive form in the cytoplasm of uninfected cells and following viral infection, double-stranded RNA (dsRNA), or toll-like receptor (TLR) signaling, is phosphorylated by IKBKE and TBK1 kinases (PubMed:22394562, PubMed:25636800, PubMed:27302953, PubMed:36603579). This induces a conformational change, leading to its dimerization and nuclear localization and association with CREB binding protein (CREBBP) to form dsRNA-activated factor 1 (DRAF1), a complex which activates the transcription of the type I IFN and ISG genes

(PubMed:16154084, PubMed:27302953, PubMed:33440148, PubMed:36603579). Can activate distinct gene expression programs in macrophages and can induce significant apoptosis in primary macrophages (PubMed:16846591). In response to Sendai virus infection, is recruited by TOMM70:HSP90AA1 to mitochondrion and forms an apoptosis complex TOMM70:HSP90AA1:IRF3:BAX inducing apoptosis (PubMed:25609812). Key transcription factor regulating the IFN response during SARS-CoV-2 infection (PubMed:33440148).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab201809 is the carrier-free version of ab68481.

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.

Species reactivity

Rat: We have preliminary internal testing data to indicate this antibody may not react with this species. Please contact us for more information.

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	IRF3 also known as Interferon Regulatory Factor 3 acts as an important transcription factor in the immune response. It has a molecular weight of approximately 47 kDa. The IRF3 protein is mainly expressed in the cytoplasm and nucleus of various cell types including immune cells such as macrophages and dendritic cells. The protein becomes activated through phosphorylation a process frequently identified in its phosphorylated form phospho-IRF3 or p-IRF3 which facilitates its role in immune function.
Biological function summary	IRF3 participates in the regulation of type I interferon (IFN) response a fundamental antiviral defense mechanism. IRF3 when phosphorylated forms a complex with CBP/p300 which then translocates to the nucleus to drive the expression of IFN-stimulated genes. This action strengthens the innate immune response and boosts the body's ability to counteract viral infections. Its activity and regulation are significant for maintaining a balanced immune response without excessive inflammation.
Pathways	IRF3 is involved in the Toll-like receptor (TLR) and RIG-I-like receptor (RLR) signaling pathways both essential in pathogen recognition and response. Within these pathways IRF3 interacts with proteins such as MAVS and TBK1 to propagate immune signaling. The activation of IRF3 in these pathways results in the production of type I interferons and other cytokines orchestrating an effective antiviral response. These interactions highlight the protein's central role in mediating immune signaling cascades.
Associated diseases and disorders	IRF3's malfunction or deregulation can contribute to autoimmune diseases and antiviral deficiencies. Conditions such as systemic lupus erythematosus (SLE) and chronic hepatitis B infection are linked to IRF3 activity. During autoimmune responses or viral persistence the aberrant activation of IRF3 can lead to inappropriate immune responses. The connection with proteins like STAT1 in these conditions highlights the complex network IRF3 engages in facilitating its impact on disease progression and immune dysregulation.

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

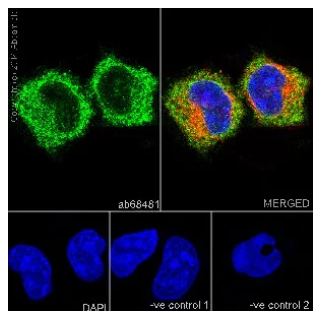
We do not recommend this combination. It is not covered by our product promise.

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



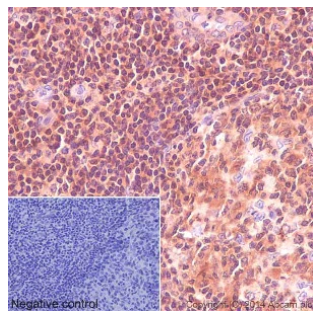
Immunocytochemistry/ Immunofluorescence - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-IRF3 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling IRF3 with [ab68481](#) at 1/100 dilution. Goat anti-rabbit IgG (Alexa Fluor® 488) ([ab150077](#)) at 1/400 dilution was used as the secondary antibody (green). The confocal image shows cytoplasmic on HeLa cells. The nuclear counter stain is DAPI (blue). Tubulin is detected with [ab7291](#) (anti-Tubulin mouse mAb) at 1/500 and [ab150120](#) (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red). The negative controls are as follows;

1. [ab68481](#) at 1/100 dilution followed by [ab150120](#) (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
2. [ab7291](#) (anti-Tubulin mouse mAb) at 1/500 dilution followed by [ab150077](#) (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/400 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab68481](#)).

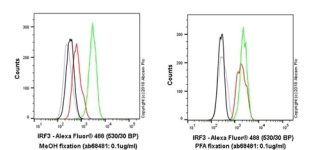


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-IRF3 antibody

Immunohistochemical analysis of paraffin-embedded Human tonsil labeling IRF3 with [ab68481](#) at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. The negative control utilised PBS instead of primary antibody. Counter stained with Hematoxylin. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab68481](#)).



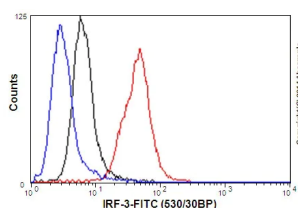
Flow Cytometry (Intracellular) - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Flow Cytometry (Intracellular) staining using rabbit Anti-IRF3 antibody

Overlay histogram showing HAP1 wildtype (green line) and HAP1-IRF3 knockout cells (red line) stained with [ab68481](#). The cells were fixed with 80% methanol (5 min) (left pannel) or 4% formaldehyde (10 min) (right pannel), and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody ([ab68481](#), 0.1µg/ml) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) presorbed ([ab150081](#)) at 1/2000 dilution for 30 min at 22°C. A rabbit IgG isotype control antibody ([ab172730](#)) was used at the same concentration and conditions as the primary antibody (HAP1 wildtype - black line, HAP1-IRF3 knockout - grey line). Unlabelled sample was also used as a control (this line is not shown for the purpose of simplicity). Acquisition of >5,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.

Note: We recommend fixing cells using MeOH instead of PFA to get optimal results.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab68481](#)).

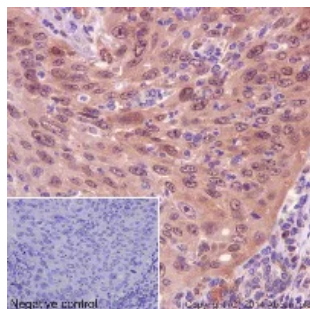


Flow Cytometry (Intracellular) - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free ([ab201809](#))

IRF3 Flow Cytometry (Intracellular) staining using rabbit Anti-IRF3 antibody

Intracellular Flow Cytometry analysis of 2% paraformaldehyde fixed U937 (Human histiocytic lymphoma cells) cells labeling IRF3 with [ab68481](#) at 1/160 dilution (red line). Secondary antibody used is a goat anti rabbit IgG (FITC) at 1/150 dilution. The isotype control is rabbit monoclonal IgG (black line). The unlabeled control is cells without incubation with primary and secondary antibodies (blue line).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab68481](#)).



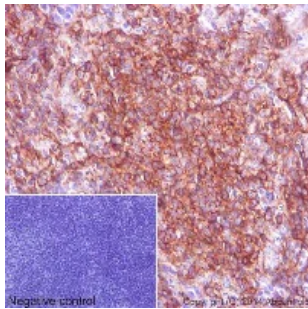
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free ([ab201809](#))

IRF3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-IRF3 antibody

Immunohistochemical analysis of paraffin-embedded Human squamous cell carcinoma of cervix labeling IRF3 with [ab68481](#) at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. The negative control utilised PBS instead of primary antibody. Counter stained with Hematoxylin.

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

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab68481](#)).

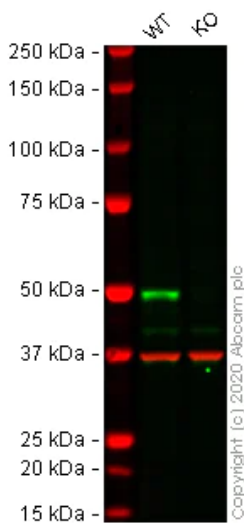


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-IRF3 antibody

Immunohistochemical analysis of paraffin-embedded Mouse spleen labeling IRF3 with ab68481 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. The negative control utilised PBS instead of primary antibody. Counter stained with Hematoxylin. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab68481](#)).



Western blot - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Western blot staining using rabbit Anti-IRF3 antibody

This data was developed using the same antibody clone in a different buffer formulation ([ab68481](#)).

Lanes 1 - 2: Merged signal (red and green). Green - [ab68481](#) observed at 50 kDa. Red - loading control [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

[ab68481](#) was shown to react with IRF3 in wild-type A549 cells in western blot with loss of signal observed in IRF3 knockout cell line [ab267097](#) (IRF3 knockout cell lysate [ab256953](#)). Wild-type and IRF3 knockout A549 cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with [ab68481](#) and [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ([ab216776](#)) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-IRF3 antibody [EPR2418Y] ([ab68481](#)) at 1/1000 dilution

Lane 1:

Wild-type A549 cell lysate at 20 µg

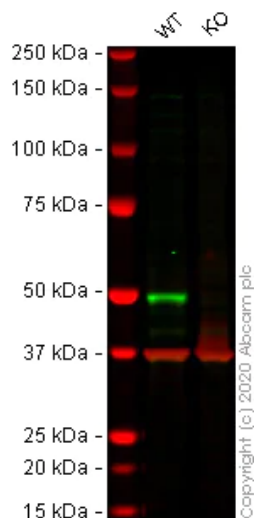
Lane 2:

Western blot - Human IRF3 knockout A549 cell lysate ([ab256953](#)) at 20 µg

Performed under reducing conditions.

Predicted band size: 47 kDa

Observed band size: 50 kDa



Western blot - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Western blot staining using rabbit Anti-IRF3 antibody

This data was developed using the same antibody clone in a different buffer formulation ([ab68481](#)).

Lanes 1 - 2: Merged signal (red and green). Green - [ab68481](#) observed at 50 kDa. Red - loading control [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

[ab68481](#) was shown to react with IRF3 in wild-type A549 cells in western blot with loss of signal observed in IRF3 knockout cell line [ab267098](#) (IRF3 knockout cell lysate [ab256954](#)). Wild-type and IRF3 knockout A549 cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with [ab68481](#) and [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ([ab216776](#)) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-IRF3 antibody [EPR2418Y] ([ab68481](#)) at 1/1000 dilution

Lane 1:

Wild-type A549 cell lysate at 20 µg

Lane 2:

IRF3 knockout A549 cell lysate at 20 µg

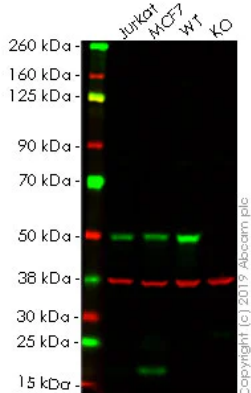
Lane 2:

Western blot - Human IRF3 knockout A549 cell line ([ab267098](#))

Performed under reducing conditions.

Predicted band size: 47 kDa

Observed band size: 50 kDa



Western blot - Anti-IRF3 antibody [EPR2418Y] - BSA and Azide free (ab201809)

IRF3 Western blot staining using rabbit Anti-IRF3 antibody

This data was developed using the same antibody clone in a different buffer formulation ([ab68481](#)).

Lanes 1 - 4: Merged signal (red and green). Green - [ab68481](#) observed at 50 kDa. Red - loading control, [ab8245](#) observed at 37 kDa.

[ab68481](#) was shown to react with IRF3 in wild-type HeLa cells. Loss of signal was observed when knockout cell line [ab255345](#) (knockout cell lysate [ab263784](#)) was used. Wild-type and IRF3 knockout samples were subjected to SDS-PAGE. [ab68481](#) 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-IRF3 antibody [EPR2418Y] ([ab68481](#)) at 1/1000 dilution

Lane 1:

Jurkat cell lysate at 20 µg

Lane 2:

MCF7 cell lysate at 20 µg

Lane 2:

Western blot - Human IRF3 knockout HeLa cell line ([ab255345](#))

Lane 3:

Wild-type HeLa cell lysate at 20 µg

Lane 4:

IRF3 knockout HeLa cell lysate at 20 µg

Secondary

All lanes:

Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 47 kDa

Observed band size: 37 kDa, 51 kDa

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