abcam

ab280574

Anti-Interferon gamma antibody [EPR23991-53] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR23991-53
Purification technique	Affinity purification Protein A
Concentration	1.024 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information IFNG

Function	Type II interferon produced by immune cells such as T-cells and NK cells that plays crucial roles in antimicrobial, antiviral, and antitumor responses by activating effector immune cells and enhancing antigen presentation (PubMed:16914093, PubMed:8666937). Primarily signals through the JAK-STAT pathway after interaction with its receptor IFNGR1 to affect gene regulation (PubMed:8349687). Upon IFNG binding, IFNGR1 intracellular domain opens out to allow association of downstream signaling components JAK2, JAK1 and STAT1, leading to STAT1 activation, nuclear translocation and transcription of IFNG-regulated genes. Many of the induced genes are transcription factors such as IRF1 that are able to further drive regulation of a next wave of transcription (PubMed:16914093). Plays a role in class I antigen presentation pathway by inducing a replacement of catalytic proteasome subunits with immunoproteasome subunits (PubMed:8666937). In turn, increases the quantity, quality, and repertoire of peptides for class I MHC loading (PubMed:8163024). Increases the efficiency of peptide generation also by inducing the expression of activator PA28 that associates with the proteasome and alters its proteolytic cleavage preference (PubMed:11112687). Up-regulates as well MHC II complexes on the cell surface by promoting expression of several key molecules such as cathepsins B/CTSB, H/CTSH, and L/CTSL (PubMed:7729559). Participates in the regulation of hematopoietic stem cells during development and under homeostatic conditions by affecting their development, quiescence, and differentiation (By similarity).

Storage

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

Notes

ab280574 is the carrier-free version of ab267369.

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	Interferon gamma (IFN-γ) also known as type II interferon is a cytokine that plays an important role in immune response. IFN-γ has a molecular weight of about 17 kDa and is produced by T cells and natural killer (NK) cells. IFN-γ binds to the interferon gamma receptor initiating a signaling cascade that activates various genes involved in immune functions. It is expressed mainly in activated immune cells within lymphoid tissues and inflamed sites during immune responses.
Biological function summary	This cytokine is significant in promoting macrophage activation enhancing the antigen presentation process and boosting the antimicrobial activity of phagocytes. IFN-γ is not part of a larger protein complex but works as a homodimer in signal transduction. Its production heightens the Th1 immune response by stimulating the differentiation of naïve T cells into Th1 cells which is essential for effective cellular immunity.
Pathways	IFN-γ is integrally involved in the JAK-STAT signaling pathway alongside another critical cytokine Interleukin-12. This pathway further amplifies the immune response by regulating the expression of genes associated with cellular defense mechanisms. IFN-γ also interacts with the NF-kB pathway influencing inflammation and the activation of further immune responses. These interactions show a network of cooperativity with proteins like STAT1 and NF-kB essential for executing its biological roles.
Associated diseases and disorders	IFN-γ is linked to autoimmune diseases such as rheumatoid arthritis and multiple sclerosis where its elevated levels can exacerbate inflammatory processes. It connects to other proteins like TNF-alpha in promoting the inflammatory cascade. Moreover lower levels of IFN-γ are associated with a heightened risk of infections like tuberculosis demonstrating its vital role in pathogen defense. Therefore understanding IFN-γ and its interactions can be key in developing therapeutic approaches against these conditions.

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.

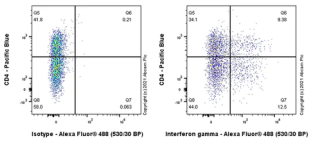
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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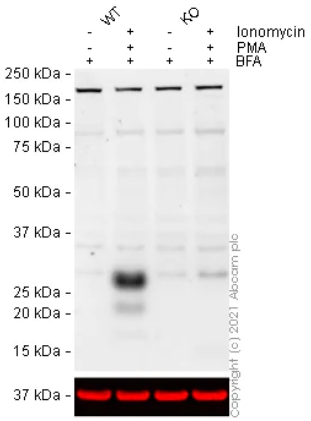
3 product images



Flow Cytometry (Intracellular) - Anti-Interferon gamma antibody [EPR23991-53] - BSA and Azide free (ab280574)

Interferon gamma Flow Cytometry (Intracellular) staining using rabbit Anti-Interferon gamma antibody

This data was developed using ab267369, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of 2% paraformaldehyde fixed 0.1% Tween-20 permeabilized Human peripheral blood mononuclear cell (PBMC) treated with cell stimulation cocktail (80nM PMA+1.34uM Ionomycin+10.6uM Brefeldin A+2uM Monensin) for 6 hours cells labelling Interferon gamma with ab267369 at 1/500 dilution (0.1ug)/ Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody. Cells were stained with anti-CD4 conjugated to Pacific blue. Fixed with 2% PFA for 10 min followed by intracellularly staining with rabbit IgG or ab267369.



Western blot - Anti-Interferon gamma antibody [EPR23991-53] - BSA and Azide free (ab280574)

Interferon gamma Western blot staining using rabbit Anti-Interferon gamma antibody

Western blot: Anti-Interferon gamma antibody [EPR23991-53] staining at 1/1000 dilution; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab267369 was shown to bind specifically to Interferon gamma. A band was observed at 28 kDa in treated wild-type Jurkat cell lysates with no signal observed at this size in treated IFNG knockout cell line ab273746 (knockout cell lysate ab275521). To generate this image, wild-type and IFNG knockout Jurkat cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween$^{Â®}$ 20 (TBS-T) before incubation with primary antibodies overnight at 4 Â°C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were HRP conjugated Goat anti-Rabbit (H+L) secondary antibody () and Goat anti-Mouse IgG H&L (IRDye$^{Â®}$ 680RD) preabsorbed (ab216776) at 1/20000 dilution. Blot was developed with an ultra-high sensitivity ECL reagent.
All lanes:
Western blot - Anti-Interferon gamma antibody [EPR23991-53] (ab267369) at 1/1000 dilution

Lane 1:
Wild-type Jurkat Vehicle control: PMA (0 ng/mL, 6 h) and ionomycin (0 µg/mL, 6 h), BFA (5 µg/ml, last 5 h) cell lysate at 20 µg

Lane 2:
Wild-type Jurkat Treated: PMA (25 ng/mL, 6 h) and ionomycin (1 µg/mL, 6 h), BFA (5 g/ml, last 5 h) cell lysate at 20 µg

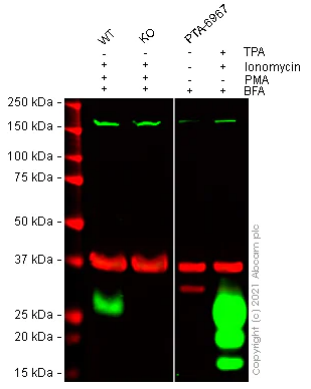
Lane 3:
IFNG knockout Jurkat Vehicle control: PMA (0 ng/mL, 6 h) and ionomycin (0 µg/mL, 6 h), BFA (5 µg/ml, last 5 h) cell lysate at 20 µg

Lane 4:
IFNG knockout Jurkat Treated: PMA (25 ng/mL, 6 h) and ionomycin (1 µg/mL, 6 h), BFA (5 µg/ml, last 5 h) cell lysate at 40 µg

Performed under reducing conditions.

Predicted band size: 19 kDa

Observed band size: 28 kDa



Western blot - Anti-Interferon gamma antibody [EPR23991-53] - BSA and Azide free (ab280574)

Interferon gamma Western blot staining using rabbit Anti-Interferon gamma antibody

False colour image of Western blot: Anti-Interferon gamma antibody [EPR23991-53] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab267369 was shown to bind specifically to Interferon gamma. A band was observed at 28 kDa in wild-type Jurkat cell lysates with no signal observed at this size in IFNG knockout cell line ab273746 (knockout cell lysate ab275521). To generate this image, wild-type and IFNG knockout Jurkat cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tweenï¿½ 20 (TBS-T) before incubation with primary antibodies overnight at 4 ï¿½C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDyeï¿½ 800CW) preabsorbed

(ab216773) and Goat anti-Mouse IgG H&L (IRDye$^{ï¿½}$ 680RD) preabsorbed (ab216776) at 1/20000 dilution.
All lanes:
Western blot - Anti-Interferon gamma antibody [EPR23991-53] (ab267369) at 1/1000 dilution

Lane 1:
Wild-type Jurkat Treated: PMA (25 ng/mL, 6 h) and ionomycin (1 µg/mL, 6 h), BFA (5 µg/ml, last 5 h) cell lysate at 40 µg

Lane 2:
IFNG knockout Jurkat Treated: PMA (25 ng/mL, 6 h) and ionomycin (1 µg/mL, 6 h), BFA (5 µg/ml, last 5 h) cell lysate at 40 µg

Lane 3:
PTA-6967 Vehicle control + Brefeldin A (5 ug/ml, 6 h) cell lysate at 10 µg

Lane 4:
PTA-6967 Treated TPA (80 nM, 5 h), Ionomycin ab120116 (3 µM, 5 h) + Brefeldin A (5 µg/mL, 3 h) cell lysate at 10 µg

Performed under reducing conditions.

Predicted band size: 19 kDa

Observed band size: 28 kDa

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