abcam

ab23637

Anti-Interferon gamma antibody [XMG1.2]

Key facts

Isotype	IgG1
Host species	Rat
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Mouse Ifng. Database link P01580
Clone number	XMG1.2
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Expected

Species	Mouse
Dilution info	-
Notes	Membrane permeablisation is required for this application. ab18407 - Rat monoclonal IgG1, is suitable for use as an isotype control with this antibody.

ELISA

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
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:11585387, PubMed:8456301). Primarily signals through the JAK-STAT pathway after interaction with its receptor IFNGR1 to affect gene regulation. 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. Plays a role in class I antigen presentation pathway by inducing a replacement of catalytic proteasome subunits with immunoproteasome subunits. In turn, increases the quantity, quality, and repertoire of peptides for class I MHC loading. 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. 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 (By similarity). Participates in the regulation of hematopoietic stem cells during development and under homeostatic conditions by affecting their development, quiescence, and differentiation (PubMed:20535209, PubMed:25078851).

Storage

Shipped at conditions	Blue Ice
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

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.

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