

IFN- γ
Catalog # PVGS1658**Specification**

IFN- γ - Product Information

Primary Accession [P01581](#)
Species
Rat

Sequence
Gln23-Cys156

Purity
> 97% as analyzed by SDS-PAGE
> 97% as analyzed by HPLC

Endotoxin Level
< 0.1 EU/ μ g of protein by LAL method

Biological Activity
The ED₅₀ as determined by an anti-viral assay using murine L929 cells infected with encephalomyocarditis (EMC) virus is less than 0.1 ng/ml, corresponding to a specific activity of 1.0×10^7 IU/mg.

Expression System
E. coli

Theoretical Molecular Weight
15.5 kDa

Formulation **Lyophilized from a 0.2 μ m filtered solution in 1 \times PBS, pH 7.4, 1 mM DTT, 5 % Trehalose and 0.05 % Tween-80.**

Reconstitution
It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in 10 mM HAc to a concentration of 0.1-1.0 mg/ml.

Storage & Stability
Upon receiving, this product remains stable for up to 6 months at -20°C or -70°C. Upon reconstitution, the product should be stable for up to 1 week at 2-8°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles.

IFN- γ - Additional Information

Gene ID 25712

Other Names
Interferon gamma, IFN-gamma, Ifng

Target Background

Interferon-gamma (IFN- γ), also known as Type II interferon or immune interferon, is a cytokine produced primarily by T-lymphocytes and natural killer cells. The protein shares no significant homology with IFN- β or the various IFN- α family proteins. Mature IFN- γ exists as noncovalently-linked homodimers. It shares high sequence identity with mouse IFN- γ (86 %). IFN- γ was originally characterized based on its antiviral activities. The protein also exerts antiproliferative, immunoregulatory and proinflammatory activities and is thus important in host defense mechanisms. IFN- γ induces the production of cytokines, upregulates the expression of class I and II MHC antigens, Fc receptor and leukocyte adhesion molecules. It modulates macrophage effector functions, influences isotype switching and potentiates the secretion of immunoglobulins by B cells. Additionally, IFN- γ augments TH1 cell expansion and may be required for TH1 cell differentiation.

IFN- γ - Protein Information

Name 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. 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 (By similarity).

Cellular Location

Secreted {ECO:0000250|UniProtKB:P01579}.

Tissue Location

Released primarily from activated T lymphocytes.

IFN- γ - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

IFN- γ - Images

