

IFN-y

Catalog # PVGS1156

### **Specification**

#### IFN-y - Product Information

Primary Accession **Species** Human P01579

**Sequence** 

Gln24-Gln166, expressed with an N-terminal Met

**Purity** 

> 95% as analyzed by SDS-PAGE

**Endotoxin Level** 

< 1 EU/  $\mu g$  of protein by gel clotting method

**Biological Activity** 

ED<sub>50</sub> < 0.05 ng/ml, measured by cytotoxicity assay using HT-29 cells.

**Expression System** 

E. coli

Formulation

Lyophilized after extensive dialysis against PBS.

# 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 ddH<sub>2</sub>O or PBS up to 100 µg/ml.

# Storage & Stability

Upon receiving, this product remains stable for up to 6 months at lower than -70 $^{\circ}$ C. Upon reconstitution, the product should be stable for up to 1 week at 4 $^{\circ}$ C or up to 3 months at -20 $^{\circ}$ C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

#### IFN-γ - Additional Information

**Gene ID 3458** 

**Other Names** 

Interferon gamma, IFN-gamma, Immune interferon, IFNG

### **Target Background**

Human Interferon gamma (hIFN- $\gamma$ ) is amacrophage-activating factor and the lone member of Interferon type II. The active form of IFN- $\gamma$  is an antiparallel dimer that interacts with the receptor IFN- $\gamma$ R1 and sets off IFN- $\gamma$ /JAK/STAT pathway. IFN- $\gamma$  signaling does diverse biological functions primarily related to host defense and immune regulation, including antiviral and antibacterial defense, apoptosis, inflammation, and innate and acquired immunity. While IFN- $\gamma$ -induced



inflammatory cascade summons a variety of immune-related cell types, such as macrophages, natural killer (NK) cells and cytotoxic T lymphocytes (CTLs), IFN- $\gamma$  is also implicated in resistance to NK cell and CTL responses and in immune escape in a variety of cancers.

### IFN-y - 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 (PubMed:<a href="http://www.uniprot.org/citations/16914093" target="\_blank">16914093</a>, PubMed:<a href="http://www.uniprot.org/citations/8666937" target="\_blank">8666937</a>). Primarily signals through the JAK-STAT pathway after interaction with its receptor IFNGR1 to affect gene regulation (PubMed:<a

href="http://www.uniprot.org/citations/8349687" target="\_blank">8349687</a>). 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:<a href="http://www.uniprot.org/citations/16914093" target="\_blank">16914093</a>). Plays a role in class I antigen presentation pathway by inducing a replacement of catalytic proteasome subunits with immunoproteasome subunits (PubMed:<a

href="http://www.uniprot.org/citations/8666937" target="\_blank">8666937</a>). In turn, increases the quantity, quality, and repertoire of peptides for class I MHC loading (PubMed:<a href="http://www.uniprot.org/citations/8163024" target="\_blank">8163024</a>). 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:<a href="http://www.uniprot.org/citations/11112687" target="\_blank">11112687</a>). 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:<a

href="http://www.uniprot.org/citations/7729559" target="\_blank">7729559</a>). 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.

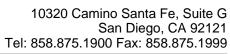
### **Tissue Location**

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 Cytomety
- Cell Culture





IFN-γ - Images