### DESCRIPTION

**Source**  
E. coli-derived human IFN-gamma protein  
Gln24-Gln166 with an N-terminal Met  
Accession # CAA31639

**N-terminal Sequence Analysis**  
Predicted Molecular Mass 16.9 kDa

### SPECIFICATIONS

**SDS-PAGE**  
17 kDa, reducing conditions

**Activity**  
The ED50 for this effect is 0.15-0.75 ng/mL.

**Endotoxin Level**  
<0.01 EU per 1 μg of the protein by the LAL method.

**Purity**  
>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation**  
Lyophilized from a 0.2 μm filtered solution in Sodium Succinate, Mannitol and Tween® 80 with BSA as a carrier protein. See Certificate of Analysis for details.

### PREPARATION AND STORAGE

**Reconstitution**  
Reconstitute at 0.2 mg/mL in sterile, deionized water.

**Shipping**  
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**  
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.  
- 12 months from date of receipt. -20 to -70 °C as supplied.  
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.  
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

### DATA

**SEC-MALS**  
Recombinant Human IFN-γ Protein SEC-MALS. Recombinant Human IFN-gamma (Catalog # 285-IF) has a molecular weight (MW) of 34.9 kDa as analyzed by SEC-MALS, suggesting that this protein is a homodimer. MW may differ from predicted MW due to post-translational modifications (PTMs) present (i.e. Glycosylation).

**SDS-PAGE**  
1 μg/lane of Recombinant Human IFN-γ was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 17 kDa.

**Bioactivity**  
Recombinant Human IFN-γ demonstrates anti-viral activity in HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. The activity is over 2-fold greater than the top competitor's IFN-γ.
Interferon-γ (IFN-γ), also known as type II or immune interferon, exerts a wide range of immunoregulatory activities and is considered to be the prototype proinflammatory cytokine (1, 2). Mature human IFN-γ exists as a non-covalently linked homodimer of 20-25 kDa variably glycosylated subunits (3). It shares 90% amino acid (aa) sequence identity with rhesus IFN-γ, 59%-64% with bovine, canine, equine, feline, and porcine IFN-γ, and 37%-43% with cotton rat, mouse, and rat IFN-γ. IFN-γ dimers bind to IFN-γ RI (α subunits) which then interact with IFN-γ RII (β subunits) to form the functional receptor complex of two α and two β subunits. Inclusion of IFN-γ RII increases the binding affinity for ligand and the efficiency of signal transduction (4, 5). IFN-γ is produced by a variety of immune cells under inflammatory conditions, notably by T cells and NK cells (6). It plays a key role in host defense by promoting the development and activation of Th1 cells, chemoattraction and activation of monocytes and macrophages, up-regulation of antigen presentation molecules, and immunoglobulin class switching in B cells. It also exhibits antiviral, antiproliferative, and apoptotic effects (6, 7). In addition, IFN-γ functions as an anti-inflammatory mediator by promoting the development of regulatory T cells and inhibiting Th17 cell differentiation (8, 9). The pleiotropic effects of IFN-γ contribute to the development of multiple aspects of atherosclerosis (7).

References: