## biotechne

## Recombinant Human IFN-y

Catalog Number: 285-IF/CF

### **R**DSYSTEMS

DESCRIPTION	
Source	<i>E. coli</i> -derived human IFN-gamma protein Gln24-Gln166 with an N-terminal Met Accession # CAA31639
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	16.9 kDa

SPECIFICATIONS	
SDS-PAGE	17 kDa, reducing conditions
Activity	Measured in anti-viral assays using HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. Meager, A. (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. <i>et al.</i> (eds): IRL Press. 129. The ED <sub>50</sub> 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. 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.	
	<ul> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> </ul>	
	1 month, 2 to 8 °C under sterile conditions after reconstitution.	

• 3 months, -20 to -70 °C under sterile conditions after reconstitution.



## SDS-PAGE



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#### Recombinant Human IFNgamma Protein 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.

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### BACKGROUND

Interferon- $\gamma$  (IFN- $\gamma$ ), 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- $\gamma$  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- $\gamma$ , 59%-64% with bovine, canine, equine, feline, and porcine IFN- $\gamma$ , and 37%-43% with cotton rat, mouse, and rat IFN- $\gamma$ . IFN- $\gamma$  dimers bind to IFN- $\gamma$  RI ( $\alpha$  subunits) which then interact with IFN- $\gamma$  RII ( $\beta$  subunits) to form the functional receptor complex of two  $\alpha$  and two  $\beta$  subunits. Inclusion of IFN- $\gamma$  RII increases the binding affinity for ligand and the efficiency of signal transduction (4, 5). IFN- $\gamma$  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- $\gamma$  functions as an anti-inflammatory mediator by promoting the development of multiple aspects of atherosclerosis (7).

#### References:

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