

# Cytokines

## Rat Recombinant IFN-gamma



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Catalog # 78114  
78114.1

### Interferon-gamma

10 µg  
50 µg

## Product Description

Interferon-gamma (IFN- $\gamma$ ) is the only member of the type II class of interferons. It binds to a heterodimeric receptor complex, consisting of IFN- $\gamma$  receptors 1 and 2, and initiates signal transduction via the JAK/STAT pathway, which culminates in the transcription and activation of many genes that control a diverse array of immunological functions (De Weerd & Nguyen; Krause et al.). IFN- $\gamma$  is produced by T and NK cells, and in smaller amounts by dendritic cells and macrophages. IFN- $\gamma$  release assays, which rely on T cells releasing IFN- $\gamma$  when exposed to specific antigens, are used in diagnosis of diseases including tuberculosis. IFN- $\gamma$  is controlled by cytokines secreted in response to infection, such as interleukin (IL) 12 and IL-18 (Schroder). IFN- $\gamma$  stimulates the antimicrobial and antitumor activity of macrophages, NK cells, and neutrophils (Billiau & Matthys) by promoting the activation of microbial effector functions including production of reactive oxygen species, NO intermediates, and complement (Schroder). IFN- $\gamma$  enhances MHC class I and II expression in dendritic cells and mononuclear phagocytes, as well as the production of IL-12 by dendritic cells (Schroder).

## Product Information

**Alternative Names:** Immune interferon, Interferon- $\gamma$ , MAF, Type II interferon, T cell interferon  
**Accession Number:** P01581  
**Amino Acid Sequence:** GTLIESLES LKNYFNSSSMD AMEGKSLLLD IWRNWQK DGN TKILESQIIS FYLRLFEVLK DNQAISNNIS VIESHLITNF FSNSKAKKDA FMSIAKFEVN NPQIQHKAVN ELIRVIHQLS PESSLRKRKR SRC  
**Predicted Molecular Mass:** 15.4 kDa  
**Species:** Rat  
**Cross Reactivity:** Human, Mouse  
**Formulation:** Lyophilized after dialysis against phosphate-buffered saline.  
**Source:** E. coli

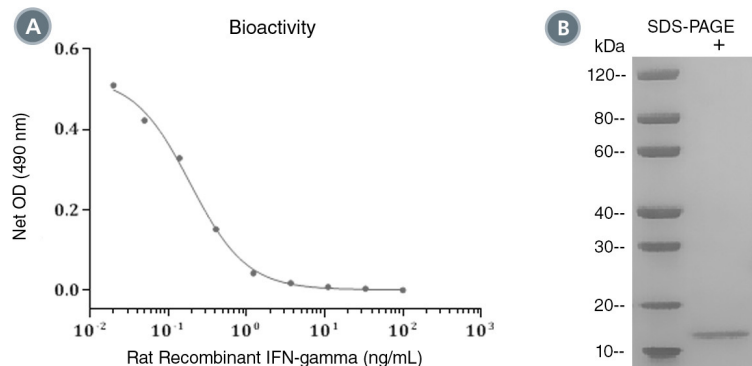
## Specifications

**Activity:** The specific activity is  $\geq 2.0 \times 10^6$  units/mg ( $EC_{50} \leq 0.5$  ng/mL) as determined by cytotoxicity assay of WEHI-279 cells.  
**Purity:**  $\geq 95\%$   
**Endotoxin Level:** Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is  $\leq 0.2$  EU/µg protein.

## Preparation and Storage

**Storage:** Store at  $-80^\circ\text{C}$ .  
**Stability:** Stable as supplied for 12 months from date of receipt.  
**Preparation:** Centrifuge vial before opening. Resuspend the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at  $2 - 8^\circ\text{C}$  for up to 1 week or at  $-20^\circ\text{C}$  to  $-80^\circ\text{C}$  for up to 3 months. Avoid repeated freeze-thaw cycles.

## Data



(A) The biological activity of Rat Recombinant IFN-gamma was tested by its ability to inhibit cell growth of WEHI-279 cells. Cell proliferation was measured using a fluorometric assay method. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC<sub>50</sub> in the above example is less than 0.5 ng/mL.

(B) 2 µg of Rat Recombinant IFN-gamma was resolved with SDS-PAGE under reducing (+) conditions and visualized by Coomassie Blue staining.

## Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at [www.stemcell.com/cytokines](http://www.stemcell.com/cytokines) or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

## References

- Billiau A & Matthys P. (2009) Interferon-gamma: a historical perspective. *Cytokine Growth Factor Rev* 20(2): 97–113.
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- De Weerd N & Nguyen T (2012). The interferons and their receptors -distribution and regulation. *Immunol Cell Biol.* 1–9.
- Krause CD et al. (2000) Signaling by covalent heterodimers of interferon-gamma. Evidence for one-sided signaling in the active tetrameric receptor complex. *J Biol Chem.* 275(30): 22995–3004.

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