

Cytokines

Rat Recombinant IFN-gamma



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Interferon-gamma

Catalog # 78114
78114.1

10 µg
50 µg

Product Description

Interferon-gamma (IFN- γ) is the only member of the type II class of interferons. It binds to a heterodimeric receptor complex, consisting of IFN- γ 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- γ is produced by T and NK cells, and in smaller amounts by dendritic cells and macrophages. IFN- γ release assays, which rely on T cells releasing IFN- γ when exposed to specific antigens, are used in diagnosis of diseases including tuberculosis. IFN- γ is controlled by cytokines secreted in response to infection, such as interleukin (IL) 12 and IL-18 (Schroder). IFN- γ 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- γ 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- γ , MAF, Type II interferon, T cell interferon
Accession Number: P01581
Amino Acid Sequence: GTLIESLESL KNYFNSSSMD AMEGKSLLLD IWRNWQKDGN 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

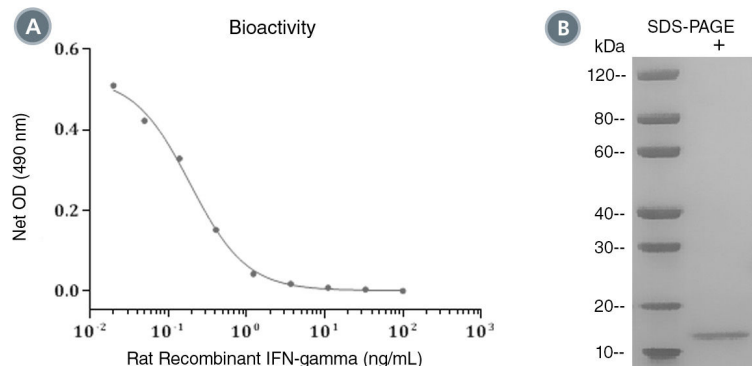
Specifications

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

Preparation and Storage

Storage: Store at -80°C .
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. As a general guide, do not store at $2 - 8^\circ\text{C}$ for more than 1 week or at -20°C for more than 2 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. Inhibition of cell proliferation was measured using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which cell proliferation inhibition is at 50% of maximum. The EC₅₀ 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. Rat Recombinant IFN-gamma has a predicted molecular mass of 15.4 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

- Billiau A & Matthys P. (2009) Interferon-gamma: a historical perspective. *Cytokine Growth Factor Rev* 20(2): 97–113.
- Schroder K. (2004). Interferon- γ : an overview of signals, mechanisms and functions. *J Leukoc Biol* (75): 163–89.
- De Weerd N & Nguyen T (2012). The interferons and their receptors -distribution and regulation. *Immunol Cell Bio* 90(5): 483–91.
- 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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