Cytokines

Mouse Recombinant IFN-gamma

Interferon-gamma

Catalog #	78021.1	20 µg
	78021	100 µg
	78021.2	1000 µg

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Product Description

Interferon-gamma (IFN-γ), also known as type II interferon, is produced by T and NK cells, and in smaller amounts by dendritic cells and macrophages. IFN-γ is controlled by cytokines such as IL-12 and IL-18 secreted in response to infection (Schroder et al.). IFN-γ binds to a receptor complex and initiates signal transduction via the JAK/STAT pathway; this 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 stimulates the antimicrobial and anti-tumor activity of macrophages, NK cells, and neutrophils (Billiau & Matthys) by promoting the activation of microbial effector functions such as production of reactive oxygen species, NO intermediates, complement, etc. (Schroder et al.). 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. In B cells, IFN-γ stimulates survival and growth in both mouse and human cells, and redirects B cells from proliferation towards differentiation. IFN-γ favors the development of Th1 vs Th2 cells and stimulates monocyte differentiation and function (Schroder et al.).

Product Information

Alternative Names:	Interferon gamma, Type II interferon
Accession Number:	P01580
Amino Acid Sequence:	MHGTVIESLE SLNNYFNSSG IDVEEKSLFL DIWRNWQKDG DMKILQSQII SFYLRLFEVL KDNQAISNNI SVIESHLITT FFSNSKAKKD AFMSIAKFEV NNPQVQRQAF NELIRVVHQL LPESSLRKRK RSRC
Predicted Molecular Mass:	15.7 kDa
Species:	Mouse
Cross Reactivity:	Human, Rat
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate and sodium chloride, pH 7.5.
Source:	E. coli

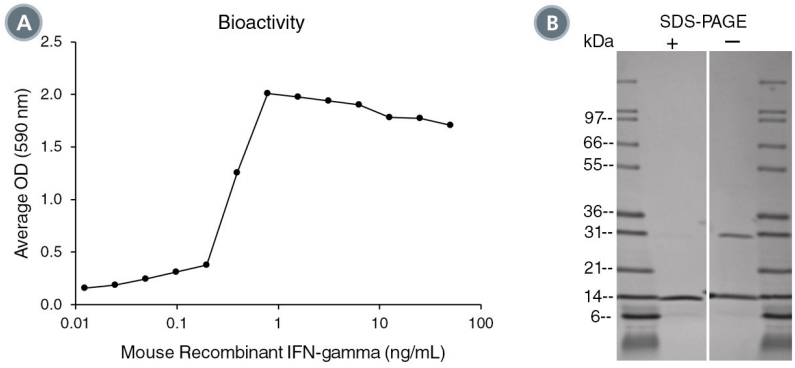
Specifications

Activity:	The specific activity is ≥ 1 x 10^7 units/mg after normalizing to an internal standard as determined in a viral challenge assay using encephalomyocarditis (EMC) virus on L929 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -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. Upon reconstitution, a small amount of precipitate can be expected. A 10% overfill has been added to compensate for this loss. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse Recombinant IFN-gamma was measured with L929 cells exposed to the EMC virus in a cytopathic effect (CPE) assay. Cell survival was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the cytokine at which cell survival is at 50% of maximum. The EC50 in the above graph is 0.22 ng/mL. When normalized to an internal standard, the specific activity in the above example is 4.3 x 10^7 units/mg.
(B) 1 µg of Mouse Recombinant IFN-gamma was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant IFN-gamma has a predicted molecular mass of 15.7 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.
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.
Schroder K et al. (2004) Interferon-gamma: an overview of signals, mechanisms and functions. J Leukoc Biol 75(2): 163–89.
de Weerd NA & Nguyen T. (2012) The interferons and their receptors--distribution and regulation. Immunol Cell Biol 90(5): 483–91.