

Cytokines

Human Recombinant IFN-gamma, ACF

Interferon-gamma, animal component-free

Catalog #	78141	20 µg
	78141.1	100 µg
	78141.2	500 µg
	78141.3	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 and 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, and complement (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.). This product is animal component-free.

Product Information

Alternative Names:	Interferon gamma, Type II interferon
Accession Number:	P01579
Amino Acid Sequence:	MQDPYVKEAE NLKKYFNAGH SDVADNGTLF LGILKNWKEE SDRKIMQSQI VSFYFKLFKN FKDDQSIQKS VETIKEDMNV KFFNSNKKKR DDFEKLTNYS VTDLNVQRKA IHELIQVMAE LSPAAKTGKR KRSQMLFQGR RASQ
Predicted Molecular Mass:	16.9 kDa
Species:	Human
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate and sodium chloride, pH 7.5
Source:	<i>E. coli</i>

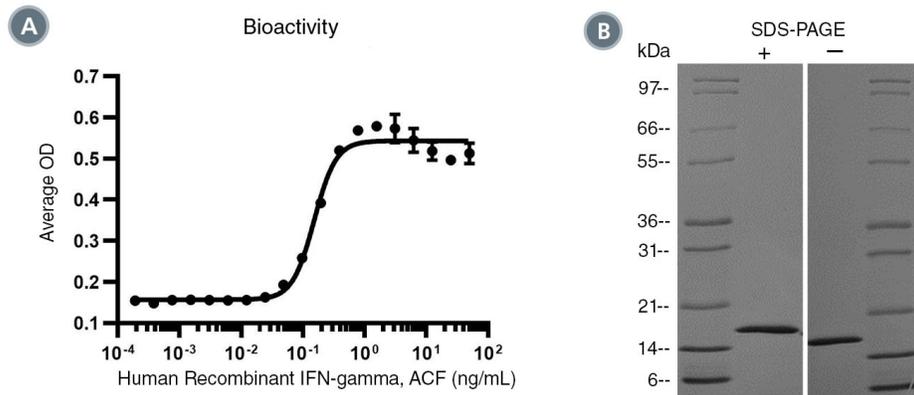
Specifications

Activity:	The specific activity is ≤ 0.7 ng/mL ($\geq 1.4 \times 10^6$ units/mg) as determined by an alkaline phosphatase assay using HEK-Blue™ IFN-gamma cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte 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. Bring vial and sterile water to room temperature (15 - 25°C). 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. Let solution sit for 1 minute at room temperature (15 - 25°C). If precipitate is observed, centrifuge at 16,000 x g for 1 minute. Remove supernatant and transfer to a new tube, taking care not to disturb the pellet. Discard the pellet. A 10% overfill has been added to compensate for any loss of protein in the precipitate. 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 Human Recombinant IFN-gamma, ACF was tested by its ability to induce alkaline phosphatase activity in HEK-Blue™ IFN-gamma-responsive indicator cells. The EC50 is defined as the effective concentration of the ligand at which alkaline phosphatase activity is at 50% of maximum. The EC50 in the above example is 0.153 ng/mL.

(B) 1 µg of Human Recombinant IFN-gamma, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IFN-gamma, ACF has a predicted molecular mass of 16.9 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.
- de Weerd NA & Nguyen T. (2012) The interferons and their receptors--distribution and regulation. *Immunol Cell Biol* 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.
- Schroder K et al. (2004) Interferon-gamma: an overview of signals, mechanisms and functions. *J Leukoc Biol* 75(2): 163–89.

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