

Cytokines

Human Recombinant IFN-gamma

Interferon-gamma



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Catalog #	78020.1	50 µg
	78020	100 µg
	78020.2	1000 µg

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.).

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 LSPAAGTKGR KRSQMLFRGR RASQ
Predicted Molecular Mass:	17 kDa
Species:	Human
Cross Reactivity:	Mouse, Monkey
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	E. coli

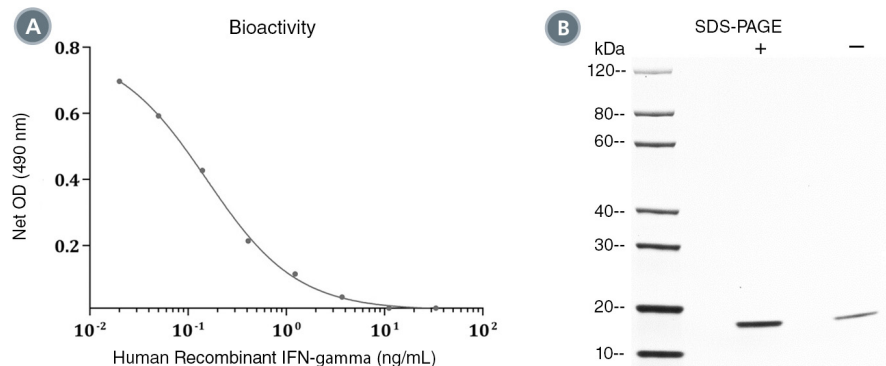
Specifications

Activity:	The specific activity is $> 2 \times 10^7$ units/mg ($EC_{50} < 0.05$ ng/mL) as determined by a cytotoxicity assay using HT-29 cells.
Purity:	$> 95\%$
Endotoxin Level:	Measured by kinetic limulus amoebocyte lysate (LAL) analysis and is < 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C .
Stability:	Stable as supplied for 12 months from date of receipt.
Reconstitution:	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°C to -80°C for up to 2 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant IFN-gamma was tested by its ability to promote the cytotoxicity of HT-29 (HTB-38) cells. Cytotoxicity was measured using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which cell death is at 50% of maximum. The EC₅₀ for this effect is 0.035 ng/mL.

(B) 2 µg of Human Recombinant IFN-gamma was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IFN-gamma has a predicted molecular mass of 17 kDa.

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 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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