

Human Interferon- γ (hIFN- γ)

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MW (kDa):	UniProt ID:	Entrez-Gene Id:
17	#P01579	3458

Background

IFN- γ plays key roles in both the innate and adaptive immune response. IFN- γ activates the cytotoxic activity of innate immune cells such as macrophages and NK cells (1,2). IFN- γ production by NK cells and antigen-presenting cells (APCs) promotes the cell mediated adaptive immunity by inducing IFN- γ production by T lymphocytes, increased class I and class II MHC expression, and enhancing peptide antigen presentation (1). The anti-viral activity of IFN- γ is due to its induction of PKR and other regulatory proteins. Binding of IFN- γ to the IFNGR1/IFNGR2 complex promotes dimerization of the receptor complexes to form (IFNGR1/IFNGR2)₂-IFN- γ dimer. Binding induces a conformational change in receptor intracellular domains and signaling involves Jak1, Jak2 and Stat1 (3). The critical role of IFN- γ in amplification of immune surveillance and function is supported by increased susceptibility to pathogen infection by IFN- γ or IFNGR knockout mice and in humans with inactivating mutations in IFNGR1 or IFNGR2. IFN- γ also appears to have a role in atherosclerosis (4).

Endotoxin

Less than 0.01 ng endotoxin/1 μ g hIFN- γ .

Purity

>96% as determined by SDS-PAGE of 6 μ g reduced (+) and non-reduced (-) recombinant hIFN- γ . All lots are greater than 96% pure.

Source / Purification

Recombinant human IFN- γ was expressed in *E. coli* and is supplied in a lyophilized form. A greater than 95% purity was determined by SDS-PAGE. Endotoxin levels are less than or equal to 1 EU / 1 μ g hIFG-II.

Bioactivity

The bioactivity of hIFN- γ was determined in a virus protection assay. The ED₅₀ of each lot is between 0.30-1.2 ng/ml.

Background References

- Schroder, K. et al. (2004) *J Leukoc Biol* 75, 163-89.
- Martinez, F.O. et al. (2009) *Annu Rev Immunol* 27, 451-83.
- Kotenko, S.V. et al. (1995) *J Biol Chem* 270, 20915-21.
- McLaren, J.E. and Ramji, D.P. (2009) *Cytokine Growth Factor Rev* 20, 125-35.

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