

Store at
-20°CHuman Interferon- γ (hIFN- γ)

#80385

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Molecular Wt.	Source	Purity
17 kDa	Human Recombinant Protein expressed in <i>E. coli</i>	> 95%

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, increasing expression of class I and class II MHC, 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. 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 in 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).

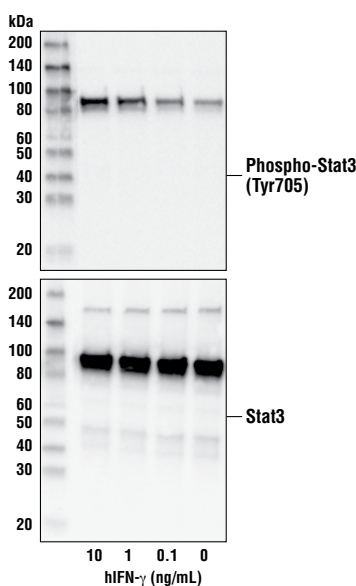
Background References:

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

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 hIFN- γ .

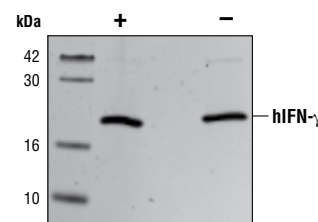
Directions For Use: Working concentration of hIFN- γ generally ranges from 0.1-10 ng/ml.

Activity: 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.

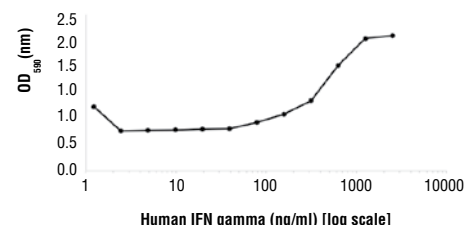


Western blot analysis of extracts from HeLa cells, untreated or treated with hIFN- γ for 20 minutes, using Phospho-Stat3 (Tyr705) (D3A7) XP[®] Rabbit mAb #9145 (upper) and Stat3 (124H6) Mouse mAb #9139 (lower).

Storage: Recombinant human IFN- γ is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/ml which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long term storage.



The purity of recombinant hIFN- γ was determined by SDS-PAGE of 1.5 μ g reduced (+) and non-reduced (-) recombinant hIFN- γ and staining overnight with Coomassie Blue.



The bioactivity of recombinant hIFN- γ was determined in a virus protection assay. A549 cells were pretreated with increasing concentrations of hIFN- γ (started at 2.5 ng/ml). Cells were then inoculated with encephalomyocarditis virus (EMCV). The OD₅₉₅ was determined for the surviving cells.

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