

Store at  
-20°C

# Mouse Interferon- $\gamma$ (mIFN- $\gamma$ )



#39127

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**For Research Use Only. Not For Use In Diagnostic Procedures.****Molecular Wt.**  
16 kDa**Source**  
Mouse Interferon- $\gamma$   
expressed in *E. coli***Purity**  
> 95%

**Background:** IFN- $\gamma$  plays key roles in both the innate and adaptive immune response. IFN- $\gamma$  activates the cytotoxic activity of innate immune cells such as macrophages and NK cells (1,2). IFN- $\gamma$  production by NK cells and antigen-presenting cells (APCs) promotes cell-mediated adaptive immunity by inducing IFN- $\gamma$  production by T lymphocytes, increased class I and class II MHC expression, and enhancing peptide antigen presentation (1). The anti-viral activity of IFN- $\gamma$  is due to its induction of PKR and other regulatory proteins. Binding of IFN- $\gamma$  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- $\gamma$  in amplification of immune surveillance and function is supported by increased susceptibility to pathogen infection by IFN- $\gamma$  or IFNGR knockout mice, and in humans with inactivating mutations in IFNGR1 or IFNGR2. IFN- $\gamma$  also appears to have a role in atherosclerosis (4).

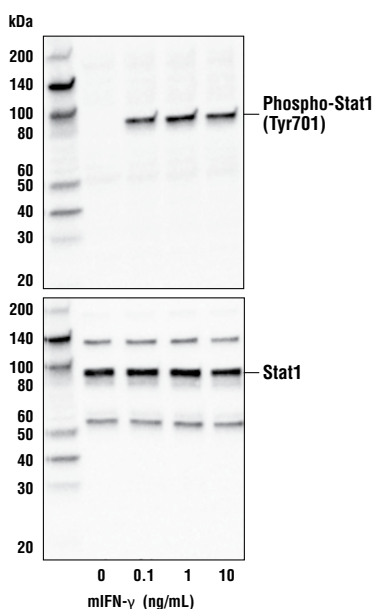
**Background References:**

- (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 mouse IFN- $\gamma$  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  $\mu$ g mIFN- $\gamma$ .

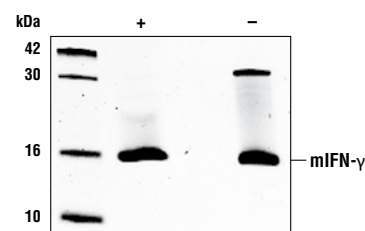
**Directions For Use:** Working concentration of mIFN- $\gamma$  generally ranges from 0.1-10 ng/ml.

**Activity:** The bioactivity of mIFN- $\gamma$  was determined in a virus protection assay. The biological activity of each lot is greater than or equal to  $1.0 \times 10^7$  units/mg.

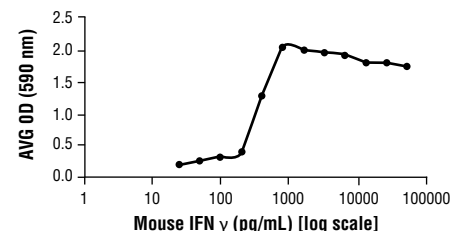


Western blot analysis of extracts from L-929 cells, untreated or treated with mIFN- $\gamma$  for 20 minutes, using Phospho-Stat1 (Tyr701) (D4A7) Rabbit mAb #7649 (upper) and Stat1 Antibody #9172 (lower).

**Storage:** Recombinant mouse IFN- $\gamma$  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 mIFN- $\gamma$  was determined by SDS-PAGE of 1  $\mu$ g reduced (+) and non-reduced (-) recombinant mIFN- $\gamma$  and staining overnight with Coomassie Blue.



The bioactivity of recombinant mIFN- $\gamma$  was determined in a virus protection assay. L-929 cells were pretreated with increasing concentrations of mIFN- $\gamma$  (started at 25 pg/ml). Cells were then inoculated with encephalomyocarditis virus (EMCV). The  $OD_{590}$  was determined for the surviving cells.

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**Applications:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species** enclosed in parentheses are predicted to react based on 100% homology.