

Technical Data Sheet

Recombinant Mouse IFN- γ

Product Information

Material Number:	554587
Size:	10 μ g
Concentration:	200 μ g/ml
Reactivity:	QC Testing: Mouse
Storage Buffer:	Frozen aqueous buffered solution containing BSA and glycerol.

Description

Interferon- γ (IFN- γ) is a potent multifunctional cytokine which is secreted by activated NK cells and CD4+TCR $\alpha\beta$ +, CD8+TCR $\alpha\beta$ +, and TCR $\gamma\delta$ + T cells and exerts its biological effects through specific binding to a single class of high affinity receptors. In addition to its antiviral effects, IFN- γ can upregulate a number of lymphoid cell functions including the antimicrobial and antitumor responses of macrophages, NK cells, and neutrophils. IFN- γ can exert strong regulatory influences on the proliferation, differentiation, and effector responses of B cell and T cell subsets. These influences can involve the capacity of IFN- γ to boost MHC class I and II expression by antigen-presenting cells as well as direct effects on B cells and T cells themselves. Under reduced SDS-PAGE conditions, recombinant mouse IFN- γ is a differentially glycosylated protein with a molecular mass of approximately 17 kD. Recombinant mouse IFN- γ is supplied as a frozen liquid comprised of 0.22 μ m sterile-filtered aqueous buffered solution, glycerol and bovine serum albumin, with no preservatives. Recombinant mouse IFN- γ is \geq 95% pure as determined by SDS-PAGE, and an absorbance assay based on the Beers-Lambert law. The endotoxin level is \leq 0.1 ng per μ g of mouse IFN- γ , as measured in a chromogenic LAL assay.

Preparation and Storage

Store product at -80°C prior to use or for long term storage of stock solutions.

Rapidly thaw and quick-spin product prior to use.

Avoid multiple freeze-thaws of product.

This preparation contains no preservatives, thus it should be handled under aseptic conditions.

Application Notes

Application

ELISA Standard	Routinely Tested
Bioassay	Tested During Development

Recommended Assay Procedure:

Upon initial thawing, recombinant mouse IFN- γ (Cat. No. 554587) should be aliquoted into polypropylene microtubes and frozen at -80°C for future use. Alternatively, the product can be diluted in sterile neutral buffer containing not less than 1 - 10 mg/mL carrier protein, such as human or bovine albumin, aliquoted and stored at -80°C. For *in vitro* biological assay use, carrier protein concentrations of 1 - 2 mg/mL are recommended. For use as an ELISA standard, carrier protein concentrations of 5 - 10 mg/mL are recommended. Failure to add carrier protein or store at indicated temperatures may result in a loss of activity. The product should not be diluted to less than 50 μ g/mL for long term storage. Carrier proteins should be pre-screened for possible effects in each investigator's experimental system. Carrier proteins may have an undesired influence on experimental results due to toxicity, high endotoxin levels or possible blocking activity.

ELISA Standard: Recombinant mouse IFN- γ (Cat. No. 554587) can be useful as a quantitative standard for measuring mouse IFN- γ protein levels using sandwich ELISA with the purified R4-6A2 antibody (Cat. No. 551216) as a capture antibody and biotinylated XMG1.2 antibody (Cat. No. 554410) as the detection antibody. To obtain linear standard curves, investigators may want to consider using doubling dilutions of recombinant mouse IFN- γ standard from 4,000 - 30 pg/mL to be included in each ELISA plate. For measuring mouse IFN- γ in serum or plasma, investigators are highly encouraged to use the BD OptEIA™ Mouse IFN- γ ELISA Set (Cat. No. 551866) or BD OptEIA™ Mouse IFN- γ Kit (Cat. No. 558258).

Bioassay: Investigators are advised that the Bioassay application is not routinely tested for this material and are highly encouraged to both titrate this material and include appropriate controls in relevant experiments. An activity range of 0.3 - 3.3 x 10⁸ units/mg, encompassing an ED50 = 30 - 300 pg/mL, has previously been reported using L929 as indicator cells for proliferation, with a unit defined as the amount of material needed to stimulate a half-maximal response at cytokine saturation.

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Suggested Companion Products

<u>Catalog Number</u>	<u>Name</u>	<u>Size</u>	<u>Clone</u>
551216	Purified Rat Anti-Mouse IFN- γ	1.0 mg	R4-6A2
554410	Biotin Rat Anti-Mouse IFN- γ	0.5 mg	XMG1.2
551866	Mouse IFN- γ (AN-18) ELISA Set	20 plates	B27
558258	Mouse IFN- γ ELISA Kit II	2 plates	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Farrar MA, Schreiber RD. The molecular cell biology of interferon-gamma and its receptor. *Annu Rev Immunol.* 1993; 11:571-611. (Biology)
Gray PW, Goeddel DV. Cloning and expression of murine immune interferon cDNA. *Proc Natl Acad Sci U S A.* 1983; 80(19):5842-5846. (Biology)
Vogel S, Friedman R, Hogan M. Measurement of antiviral activity induced by interferons a, b, and g.. In: Coligan JE, Kruisbeek AM, Margulies DH, Shevach EM, Strober W, ed. *Current Protocols in Immunology.* New York: John Wiley & Sons; 2007:6.9.1-6.9.15. (Methodology: Bioassay)

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