

Product Information

INTERFERON-GAMMA (IFN- γ)

Porcine, Recombinant
Expressed in *E. coli*

Product Number **I 8654**

Product Description

Recombinant Porcine Interferon- γ (IFN- γ) is produced from a DNA sequence encoding the mature porcine IFN- γ protein.¹ Porcine IFN- γ , a 146 amino acid protein, has a predicted molecular mass of approximately 17.3 kDa. Porcine IFN- γ is highly species specific, yet shares approximately 60% amino acid sequence identity with human IFN- γ .

Interferon- γ (IFN- γ), a type II or immune interferon,² is produced primarily by T lymphocytes and natural killer cells stimulated by alloantigens, tumors, and mitogens.³ IFN- γ exerts a variety of biological effects including antiviral activity,⁴ inhibition of cell or tumor growth,⁵ and promotion of differentiation of B cells into immunoglobulin-producing cells.⁶ IFN- γ , originally characterized based on its antiviral activities, is a potent modulator of immune responses and modifies cellular processes.⁷ It functions as an activating factor, priming macrophages for non-specific tumoricidal activity.⁸ IFN- γ activates monocytes to exert enhanced cytotoxicity against tumor cells.⁹ It also boosts cytotoxicity of natural killer cells and stimulates T cell cytotoxicity. IFN- γ acts as a signal for the major histocompatibility antigen expression system.¹⁰

The species specificity of IFN- γ resides in the interaction of IFN- γ with its receptor.¹¹ The IFN- γ receptor is expressed on T cells, B cells, macrophages, polymorphonuclear leukocytes, and platelets. It is not found on erythrocytes. The receptor is also expressed on epithelial cells, endothelial cells, and many tumor cells.¹²

Reagents

Recombinant Porcine Interferon- γ (IFN- γ) is supplied as approximately 50 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline (PBS) containing 2.5 mg of bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 25 μ g/ml.

Storage/Stability

Store at -20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

Recombinant Porcine Interferon- γ (IFN- γ) is measured in an anti-viral assay using porcine PK-15 cells infected with EMC virus.

The ED₅₀ for this effect is typically 0.015 μ g/ml to 0.045 ng/ml.

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: > 97% as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/ μ g protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Vandebroek, K., et al., *Biochem. Biophys. Res. Commun.*, **180**, 1408 (1991).
2. DeMaeyer, E., and DeMaeyer-Guignard, J., *Interferons*, in *The Cytokine Handbook, 3rd Edition*, Thomson, A.W., (Ed.), p. 491 (Academic Press, San Diego, 1998).
3. Hibino, Y., et al., *J. Biol. Chem.*, **266**, 6948 (1991).
4. Vilcek, J., et al., *Lymphokines*, **11**, 1 (1985).
5. Knight, E., Jr., *Nature*, **262**, 302 (1976).

6. Opdenakker, G., et al., *Experimentsa (Basel)*, **45**, 513 (1989).
7. Fisher, O., et al., *Pharmac. Ther.*, **27**, 143 (1985).
8. Schreiber, R., et al., *Lymphokines*, **11**, 87 (1985).
9. Le, J., et al., *Cell. Immun.*, **85**, 278 (1984).
10. Pfizenmaier, K., et al., *Can. Res.*, **45**, 3503 (1985).
11. Farrar, M.A., and Schreiber, R.D., *Annu. Rev Immunol.*, **11**, 571 (1993).
12. Valente, G., et al., *Eur. J. Immunol.*, **22**, 2403 (1992).

KAA 8/01

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