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InnoCyto Inc.

15375 Barranca Pkwy, Suite I-103
Irvine, CA 92618
Email: info@innocyto.com
Phone: 1-949-418-7543

Recombinant Mouse IFNγ protein

Catalog Number:	670601, 670602, 670603
Size:	20 μg, 100 μg, 1 mg
Target Name:	IFNγ. Interferon-γ, Immune interferon, T cell interferon, Macrophage-activating factor (MAF), Type II inter
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile PBS, pH 7.4.
Expression Host:	HEK293
Species:	Mouse
accession number:	NP_032363.1
Sources:	A DNA sequence encoding the mouse IFNG (NP_032363.1) (Met1-Cys155) was expressed and purified.
Molecular Weight:	The recombinant mouse IFNg consists of 133 amino acids and predicts a molecular mass of 15.5 KDa. As a result of different glycosylation, it migrates as approximately 19.6 and 15.4 KDa band in SDS-PAGE under reducing conditions.
Affinity Tag:	None
Purity:	> 90 % as determined by SDS-PAGE.
Endotoxin level:	< 1.0 EU per μg protein
Protein Concentration:	Lyophilized
Storage and Handling:	Samples are stable for up to twelve months from date of receipt at -20℃ to -80℃. Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

BACKGROUND INFORMATION

Mouse interferon-gamma (IFN-γ), also known as type II interferon, is a key immunoregulatory cytokine that coordinates innate and adaptive immune responses. It is produced primarily by activated T lymphocytes, including CD4+ Th1 cells and CD8+ cytotoxic T cells, as well as natural killer (NK) cells and natural killer T cells. IFN-γ promotes macrophage activation, enhances antigen presentation, increases the expression of major histocompatibility complex (MHC) molecules, and supports Th1-type immune responses. These activities are important for controlling intracellular pathogens and facilitating immune surveillance against abnormal cells.

Mouse IFN-γ is a secreted glycoprotein belonging to the type II interferon family. It is synthesized as a precursor with a signal peptide and processed into a mature polypeptide of approximately 134 amino acids. The biologically active cytokine forms a homodimer, with each subunit adopting a predominantly alpha-helical structure. IFN-γ binds to a specific cell-surface receptor

complex composed of IFN-γ receptor 1 (IFNGR1) and IFN-γ receptor 2 (IFNGR2). Receptor engagement activates the JAK1 and JAK2 kinases and the STAT1 signaling pathway, inducing genes involved in antimicrobial defense, antigen processing, and immune regulation. Unlike some cytokines, IFN-γ does not have multiple conventional ligand partners; IFNGR1 and IFNGR2 are its receptor components.

IFN-γ is essential for host defense against intracellular bacteria, viruses, and certain parasites. However, excessive or prolonged signaling can contribute to chronic inflammation, tissue damage, and autoimmune or inflammatory diseases. Its effects are context-dependent, balancing protective immunity with the risk of immunopathology.

Therapeutically, IFN-γ signaling is being investigated for its potential to enhance antimicrobial immunity and antitumor responses. Recombinant IFN-γ has been used clinically in selected immune disorders, including chronic granulomatous disease. In cancer research, IFN-γ is important for understanding tumor immune surveillance and responses to immunotherapy, although persistent signaling can also promote adaptive tumor resistance. Mouse IFN-γ is widely used in preclinical studies of immune activation, inflammation, infection, and cancer immunology.

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