

PRODUCT INFORMATION



IFN- γ (mouse, recombinant)

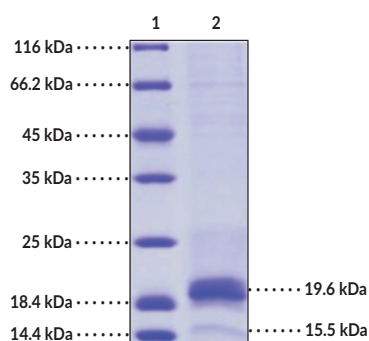
Item No. 32078

Overview and Properties

Synonyms: IFNG, Interferon- γ , Type II Interferon
Source: Active recombinant mouse IFN- γ expressed in HEK293 cells
Amino Acids: 23-155
Uniprot No.: P01580
Molecular Weight: 15.5 kDa
Storage: -80°C (as supplied)
Stability: ≥ 1 year
Purity: $\geq 87\%$ estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: < 1.0 EU/ μ g, determined by the LAL endotoxin assay
Bioactivity: See figures for details

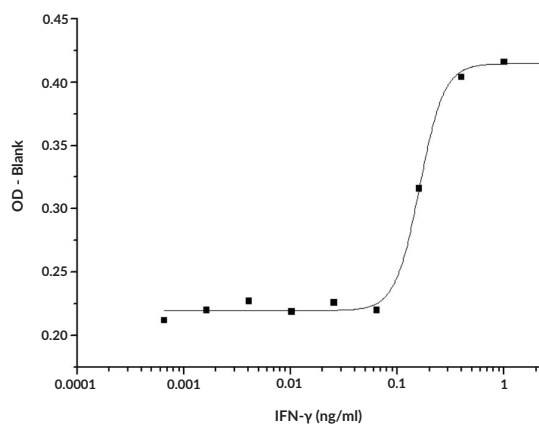
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: IFN- γ

SDS-PAGE Analysis of IFN- γ . This protein has a calculated molecular weight of 15.5 kDa. It has an apparent molecular weight of approximately 19.6 and 15.4 kDa by SDS-PAGE under reducing conditions.



Antiviral Assay in L929 Cells. IFN- γ activity measured in L929 cells infected with vesicular stomatitis virus. The EC_{50} value for this effect is 0.05-0.3 ng/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Interferon γ (IFN- γ) is a cytokine and type II interferon with roles in innate and adaptive immunity.¹ It is initially produced by natural killer (NK) and natural killer T (NKT) cells as part of the innate immune response to pathogens, and then by CD4⁺ T helper (Th1) cells and CD8⁺ cytotoxic effector T cells as adaptive antigen-specific immunity is developed.^{1,2} IFN- γ production is induced in response to pathogen-induced secretion of IL-12 and IL-18 by macrophages and is inhibited by IL-4, IL-10, TGF- β , and various glucocorticoids. It facilitates amplification of antigen presentation, the production of reactive oxygen species (ROS), and the induction of antiviral and antibacterial responses by binding to the interferon γ receptor extracellular domain IFNGR1 (Item No. 32006) to induce signal transduction and gene transcription.^{1,3} In addition to its role in infectious disease, IFN- γ enhances the antigenicity of tumor cells, making them more susceptible to IFN- γ -stimulated immune effector cells.⁴ It induces tumor cell apoptosis and necroptosis and inhibits tumor angiogenesis *in vitro* and *in vivo*. However, IFN- γ -induced removal of highly antigenic tumor cells can leave behind a population with reduced immunogenicity that can evade immune detection and enhance metastasis. Knockdown of *Ifny* improves insulin resistance in a mouse model of high-fat diet-induced obesity and increases susceptibility to various pathogens in mice.^{1,5} Cayman's IFN- γ (mouse, recombinant) protein can be used for ELISA and cell-based assay applications. This protein consists of 133 amino acids, has a calculated molecular weight of 15.5 kDa, and a predicted N-terminus of His23 after signal peptide cleavage.

References

1. Schroder, K., Hertzog, P.J., Ravasi, T., *et al.* Interferon- γ : An overview of signals, mechanisms and functions. *J. Leukoc. Biol.* **75**(2), 163-189 (2004).
2. Schoenborn, J.R. and Wilson, C.B. Regulation of interferon- γ during innate and adaptive immune responses. *Adv. Immunol.* **96**, 41-101 (2007).
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4. Zaidi, M.R. The interferon-gamma paradox in cancer. *J. Interferon. Cytokine Res.* **39**(1), 30-38 (2019).
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
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[734] 971-3335
FAX: [734] 971-3640
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