IFN-gamma Protein, Ferret (HEK293, His)

Cat. No.:	HY-P74857
Synonyms:	IFG; IFI; IFNG; IFN-gamma; Immune interferon; Interferon gamma
Species:	Others
Source:	HEK293
Accession:	A4PIZ9 (M1-K166)
Gene ID:	/
Molecular Weight:	Approximately 28&23&19 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

IFN-gamma (Interferon-gamma), a type II interferon produced by immune cells such as T-cells and NK cells, assumes crucial roles in antimicrobial, antiviral, and antitumor responses by activating effector immune cells and enhancing antigen presentation. Its primary signaling occurs through the JAK-STAT pathway upon interaction with its receptor, IFNGR1, influencing gene regulation. Upon IFN-gamma binding, the IFNGR1 intracellular domain opens out, facilitating the association of downstream signaling components, including JAK2, JAK1, and STAT1, leading to STAT1 activation, nuclear translocation, and transcription of IFNG-regulated genes. Many of the induced genes are transcription factors, such as IRF1, capable of further driving the regulation of a subsequent wave of transcription. IFN-gamma also plays a role in the class I antigen presentation pathway by inducing a replacement of catalytic proteasome subunits with immunoproteasome subunits, thereby increasing the quantity, quality, and repertoire of peptides for class I MHC loading. It enhances the efficiency of peptide generation by inducing the expression of the activator PA28, which associates with the proteasome and alters its proteolytic cleavage preference. Additionally, IFN-gamma up-regulates MHC II complexes on the cell surface by promoting the expression of key molecules such as cathepsins B/CTSB, H/CTSH, and L/CTSL. Participating in the regulation of hematopoietic stem cells during development and under homeostatic conditions, IFN-gamma influences their development, quiescence, and differentiation. Existing as a homodimer, IFN-gamma interacts with IFNGR1 via its extracellular domain, a crucial interaction that promotes IFNGR1 dimerization to orchestrate its diverse and critical

	functions in immune responses and hematopoiesis.

Caution: Product has not been fully validated for medical applications. For research use only.

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