

IFN-gamma Protein, Cynomolgus (HEK293, His)

Cat. No.:	HY-P701006
Synonyms:	IFN-gamma-R1; CDw119; CD119; IFNGR1; IFNGR; AVP; FLJ45734; IFN-gamma R1; IFN-gR1; type 2
Species:	Cynomolgus
Source:	HEK293
Accession:	P63309 (Q24-Q165)
Gene ID:	102128291
Molecular Weight:	25-35 kDa

PROPERTIES

Biological Activity	Immobilized Cynomolgus IFN gamma, His Tag at 0.5 µg/mL (100 µl/well) on the plate. Dose response curve for Human IFNGR1, hFc Tag with the EC ₅₀ of 39.4 ng/mL determined by ELISA.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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 like T-cells and NK cells, plays crucial roles in antimicrobial, antiviral, and antitumor responses by activating effector immune cells and enhancing antigen presentation. Its primary signaling pathway involves the JAK-STAT pathway after interaction with its receptor, IFNGR1, affecting gene regulation. Upon IFN-gamma binding, the IFNGR1 intracellular domain opens out, allowing the association of downstream signaling components JAK2, JAK1, and STAT1, resulting in STAT1 activation, nuclear translocation, and transcription of IFN-gamma-regulated genes. Many of these induced genes are transcription factors such as IRF1, capable of further driving the regulation of a subsequent wave of transcription. IFN-gamma contributes to 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 also 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. Beyond its direct immune functions, IFN-gamma participates in

the regulation of hematopoietic stem cells during development and under homeostatic conditions, influencing their development, quiescence, and differentiation. Existing as a homodimer, IFN-gamma interacts with IFNGR1 via its extracellular domain; this interaction is pivotal in promoting IFNGR1 dimerization and orchestrating the diverse and critical functions of IFN-gamma in immune responses and hematopoiesis.

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

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