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MAF

Catalog # PVGS1478

Product Information

Primary Accession	P01581
Species	Rat
Sequence	GTLIESLESL KNYFNSSSMD AMEGKSLLLD IWRNWQKDGN TKILESQIIS FYLRLFEVLK DNQAISNNIS VIESHLITNF FSNSKAKKDA FMSIAKFEVN NPQIQHKAVN ELIRVIHQLS PESSLRKRKR SRC
Purity	> 95% as analyzed by SDS-PAGE and HPLC.
Endotoxin Level	
Formulation	Lyophilized after extensive dialysis against PBS.
Reconstitution	Reconstituted in ddH_2O or PBS at 100 μg/ml.

Additional Information

Gene ID	25712
Other Names	Interferon gamma, IFN-gamma, Ifng
Target Background	Interferon gamma (IFN-γ), also known as Type II interferon,is a cytokine produced primarily by T-lymphocytes and natural killer cells. The active form of IFN-γ is an antiparallel dimer that interacts with the receptor IFN-γR1 and activates the IFN-γ/JAK/STAT pathway. IFN-γ signaling promotesbiological functions primarily related to antiviral and antibacterial defense, apoptosis, inflammation, and regulation of innate and acquired immune responses. While IFN-γ–induced inflammatory cascades summon a variety of immune-related cell types, such as macrophages, natural killer (NK) cells and cytotoxic T lymphocytes (CTLs), IFN-γ is also implicated in resistance to NK cell and CTL responses and in immune escape in a variety of cancers. Recombinant Rat Interferon gamma (IFN-γ) produced in E.coli is a single non-glycosylated polypeptide chain containing 134 amino acids. A fully biologically active molecule, rrIFN-γ has a molecular mass of 15.5 kDa analyzed by reducing SDS-PAGE and is obtained by chromatographic techniques at .

Protein Information

Name	Ifng
Function	Type II interferon produced by immune cells such as T-cells and NK cells that plays crucial roles in antimicrobial, antiviral, and antitumor responses by activating effector immune cells and enhancing antigen presentation.

Primarily signals through the JAK-STAT pathway after interaction with its receptor IFNGR1 to affect gene regulation. Upon IFNG binding, IFNGR1 intracellular domain opens out to allow association of downstream signaling components 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 that are able to further drive regulation of a next wave of transcription. Plays a role in class I antigen presentation pathway by inducing a replacement of catalytic proteasome subunits with immunoproteasome subunits. In turn, increases the quantity, quality, and repertoire of peptides for class I MHC loading. Increases the efficiency of peptide generation also by inducing the expression of activator PA28 that associates with the proteasome and alters its proteolytic cleavage preference. Up-regulates as well MHC II complexes on the cell surface by promoting expression of several key molecules such as cathepsins B/CTSB, H/CTSH, and L/CTSL (By similarity). Participates in the regulation of hematopoietic stem cells during development and under homeostatic conditions by affecting their development, quiescence, and differentiation (By similarity).

Cellular Location Secreted {ECO:0000250|UniProtKB:P01579}.

Tissue Location Released primarily from activated T lymphocytes.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.