IFN-gamma R1/CD119 Protein, Rat (HEK293, Fc)

Cat. No.:	HY-P75824
Synonyms:	Interferon gamma receptor 1; IFN-gamma-R1; IFN-gamma-R-alpha; CD119; IFNGR1
Species:	Rat
Source:	HEK293
Accession:	Q6P6T3 (A17-S241)
Gene ID:	116465
Molecular Weight:	65-90 kDa

PROPERTIES

AA Sequence	A L M S T E D P K P P S V P A P T N V L I T S Y D L N P V V H W K H Q N V S Q A A V F T V Q V K M Y P D N W T D A C T N I A H H Y C N I Y K H I S Y P D S S A W A R V K A K V G Q R E S A Y A Q S E E F I M C R K G K V G P P G L D I G R K E D Q L I V H I F H P K V N V S Q E T M F G D G N T C Y T F D Y T V F V K H Y R S G E I L H T E H S V L K E D C S E T L C E L N I S V S T L N S N Y C V S V V G K S S F W Q V N T E T S K D A C I P F L H D D R E E S
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human IFN-gamma at 5 μg/mL (100 μL/well) can bind Rat IFN-gamma R1. The ED_{50} for this effect is 0.1293 μg/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
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. 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 R1 (CD119), one of the subunit of IFN-gamma receptor, is a receptor for IFN-gamma. IFN-gamma R1 is constitutively expressed on the surface of almost all cells[1]. IFN-gamma R1 can associate with IFN-gamma R2 to form a functional receptor. Upon binding with IFN-gamma, IFNγR1 and

IFNγR2 oligomerize and transphosphorylate[1]. Then, JAK1 and JAK2 are phosphorylated and activated, and STAT1 is recruited to the receptor complex. The phosphorylation of IFNγR1 creates a docking site for STAT1 and leads to the phosphorylation of STAT1. Phosphorylated STAT1 translocates to the nucleus, where it regulates the expression of IFN-responsive genes (e.g. CD54). IFN-gamma R1 deficiencies are associated with immune responses mediated by IFN-γ, and increased susceptibility to infections. IFN-gamma R1 signaling pathway is important in activating cancer cell death and inhibiting cancer progression[3]

The sequence of amino acids in IFNAR1 differs in different species. Rat IFN-gamma R1 shares 73.5% aa sequence identity with mouse. Rat IFN-gamma R1 shares 49.89% aa sequence identity with human.IFN-gamma R1 plays a critical role in antimicrobial, antiviral, and antitumor responses[2].

REFERENCES

[1]. Castro F, et al. Interferon-Gamma at the Crossroads of Tumor Immune Surveillance or Evasion. Front Immunol. 2018 May 4;9:847.

[2]. van de Vosse E, et al. IFN-γR1 defects: Mutation update and description of the IFNGR1 variation database. Hum Mutat. 2017 Oct;38(10):1286-1296.

[3]. Ding H, et al. Role of interferon-gamma (IFN-γ) and IFN-γ receptor 1/2 (IFNγR1/2) in regulation of immunity, infection, and cancer development: IFN-γ-dependent or independent pathway. Biomed Pharmacother. 2022 Nov;155:113683.

[4]. Goto Y, et al. Contribution of the exosome-associated form of secreted endoplasmic reticulum aminopeptidase 1 to exosome-mediated macrophage activation. Biochim Biophys Acta Mol Cell Res. 2018 Jun;1865(6):874-888.

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