IFN-alpha/beta R2 Protein, Cynomolgus (HEK293, His)

Cat. No.:	HY-P77392
Synonyms:	Interferon alpha/beta receptor 2; IFN-R-2; Interferon alpha binding protein; IFNAR2; IFNABR; IFNARB
Species:	Cynomolgus
Source:	HEK293
Accession:	XP_005548871 (I27-K243)
Gene ID:	102140083
Molecular Weight:	Approximately 40-55 kDa due to the glycosylation

PROPERTIES

AA Sequence	I S H D L P D Y T S E S C T F K I S L R N F R S I L S W E L K N H S I V A T H Y K L L Y T I M S K P E D L K I V K N C A N T T R S F C D L T D E W R S I H E A Y V T S L E G F S G N T T L F N C S H N F W L D I D M S F E P P E F E I V G F T N H I N V I V K F P S I V E E E L Q F D L S L V I E E Q S E G I V K K H K P T I K G N M S G N F T Y I I D K L I P N T N Y C V S V Y F D H N D E Q A V I K S P L K C T L L Q P G Q E S E S A E S A K
Biological Activity	Immobilized Recombinant Cynomolgus IFN-alpha 2 at 2.5 μg/mL (100 μL/well) can bind Biotinylated Recombinant Cynomolgus IFN-alpha/beta R2. The ED_{50} for this effect is 55.7 ng/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-alpha/beta R2, one of the subunit of IFN-α/β receptor, is a type I IFN receptor. IFN-alpha/beta R2 is expressed on peripheral blood B cells and monocytes, and mediates differentiation and activation of these cells[4]. IFN-alpha/beta R2 forms the heterodimeric receptor (IFN-α/β receptor) together with IFNAR1. IFNs such as IFN-α/-β can

induce association of the IFNAR1 and IFN-alpha/beta R2, which makes JAK1 and TYK2 form a functional signaling unit[1]. Upon activation by these IFNs, IFNAR1 and IFN-alpha/beta R2 undergo a conformational change to promote a cascade of downstream signaling events. The signaling events includes the phosphorylation of Tyk2 and JAK1, the signal transducers and activators of transcription STAT1 and STAT2, and the formation of the IFN-stimulated gene factor 3 (ISGF3) complex which consists of phosphorylated STAT1 and STAT2 and IRF9[3]. IFNAR2 is critical for anti-viral immunity[5].
Human IFN-alpha/beta R2 consists of extracellular domain (I27-K243), helical domain (I244-L264), and cytoplasmic domain (K265-R515). The sequence of amino acids in IFN-alpha/beta R2 differs in different species. Human IFN-alpha/beta R2 shares <50% aa sequence identity with mouse.
IFN-alpha/beta R2 mediates IFN-induced tyrosine phosphorylation of the IFNARs and STAT proteins, and activates the JAK-STAT signaling cascade[1]

REFERENCES

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[2]. Shemesh M, et al. IFNAR1 and IFNAR2 play distinct roles in initiating type I interferon-induced JAK-STAT signaling and activating STATs. Sci Signal. 2021 Nov 23;14(710):eabe4627.

[3]. Jun Zou, et al. Chapter 7 - Antiviral Immunity: Origin and Evolution in Vertebrates. The Evolution of the Immune System. 2016,Pages 173-204.

[4]. Pogue SL, et al. The receptor for type I IFNs is highly expressed on peripheral blood B cells and monocytes and mediates a distinct profile of differentiation and activation of these cells. J Interferon Cytokine Res. 2004 Feb;24(2):131-9.

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