

IFN-alpha/beta R2 Protein, Human (217a.a, HEK293, His)

Cat. No.:	HY-P72613
Synonyms:	Interferon alpha/beta receptor 2; IFN-R-2; Interferon alpha binding protein; IFNAR2; IFNABR; IFNARB
Species:	Human
Source:	HEK293
Accession:	P48551 (I27-K243)
Gene ID:	3455
Molecular Weight:	33-50 kDa

PROPERTIES

AA Sequence	<pre> I S Y D S P D Y T D 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 P T H Y T L L Y T I M S K P E D L K V V K N C A N T T R S F C D L T D E W R S T H E A Y V T V L E G F S G N T T L F S C S H N F W L A I D M S F E P P E F E I V G F T N H I N V M 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 E 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 L E H S D E Q A V I K S P L K C T L L P P G Q E S E S A E S A K </pre>
Biological Activity	<p>1. Immobilized Human IFNA2 at 10 µg/mL (100 µL/well) can bind IFNAR2. The ED₅₀ for this effect is 568.9 ng/mL.</p> <p>2. Measured by its ability to inhibit rh IFNβ mediated protection of WISH Human amnion cells infected with vesicular stomatitis virus (VSV) to viral lysis. The EC₅₀ for this effect is typically 1-4 µg/mL.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4 or 50 mM Tris-HCL, 300 mM NaCL, 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-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] .
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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

- [1]. Zanin N, et al. Interferon Receptor Trafficking and Signaling: Journey to the Cross Roads. *Front Immunol.* 2021 Jan 20;11:615603.
- [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.
- [5]. Duncan CJ, et al. Human IFNAR2 deficiency: Lessons for antiviral immunity. *Sci Transl Med.* 2015 Sep 30;7(307):307ra154.
- [6]. Hurtado-Guerrero I, et al. Immunomodulatory and Antiproliferative Activities of Recombinant Soluble IFNAR2 without IFN- β Mediation. *J Clin Med.* 2020 Mar 31;9(4):959.

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

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