IFNAR1 Protein, Human (HEK293, His-Avi)

Cat. No.:	HY-P78457
Synonyms:	AVP; IFN-alpha/beta R1; IFN-alpha-REC; IFNAR; IFNAR1; IFN-aR1; IFNBR; IFNbR1; IFN-R-1; CRF2-1; IFRC ; IFN-alpha/β R1
Species:	Human
Source:	HEK293
Accession:	P17181 (K28-K436)
Gene ID:	3454
Molecular Weight:	74-95 kDa

PROPERTIES

Biological Activity	Immobilized Human IFNAR1, His Tag at 1μg/ml (100μl/Well) on the plate. Dose response curve for Anti-IFNAR1 Antibody, hFc Tag with the EC_{50} of 0.12μg/ml determined by ELISA.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
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.
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

IFNAR1, one of the subunit of IFN-α/β receptor, is a type I IFN receptor. IFNAR1 is expressed on peripheral blood B cells and monocytes, and mediates differentiation and activation of these cells[4].
IFNAR1 forms the heterodimeric receptor (IFN-α/β receptor) together with IFNAR2. IFNAR1 interacts with tyrosine kinase 2 (Tyk2), and the interaction is able to stabilize IFNAR1 on the plasma membrane[1]. Besides, IFNAR1 associates with TYK2 and initiates type I IFN-induced STAT signaling, but the activation needs IFNAR2 as a platform[2]. IFN-α/-β can induce association of the IFNAR1 and IFNAR2, which makes JAK1 and TYK2 form a functional signaling unit[1]. Upon activation by these IFNs, IFNAR1 and IFNAR2 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].
Human IFNAR1 consists of extracellular domain (K28-K436), helical domain (I437-A457), and cytoplasmic domain (K458-V557). The sequence of amino acids in IFNAR1 differs in different species. Human IFNAR1 shares <50% aa sequence identity

with mouse.
IFNAR1 mediates IFN-induced STAT signaling by interacting with tyrosine kinase 2 (Tyk2)[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.

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