

**Product Name: Bioactive, Human IFN-alpha/beta receptor R1/R2 Heterodimer, His Tag**

**Product Code: CSP-24025-A1B1**

**FOR RESEARCH USE ONLY (RUO)**

**Protein Name:** IFN $\alpha$ -R1/R2, Protein Dimer

**Alternate Name(s):** IFNAR1, IFNAR2, IFNAR, IFNaR, IFNAR1/R2, interferon-Alpha/Beta Receptor, interferon- $\alpha/\beta$  receptor

**Expression Host**  
HEK293T

**Amino Acid Range**  
I27-K243 ; K28-K436

**Protein Construct**

IFNAR (IFNAR1/R2) heterodimer protein contains IFNAR1 and IFNAR2 extracellular domains (UniProt# P17181 and UniProt# P48551) fused with a proprietary dimer motif followed by a His tag at each C-termini. Expressed in HEK293T cell line.

**SDS-Page Molecular Weight**

87 kDa. The migration range of the heterodimer under reducing conditions is 40-60 kDa and 70-120 kDa. The migration range of the heterodimer under non-reducing conditions is 120-190 kDa on SDS PAGE.

**Purity**

Greater than 90% dimer form as determined by SDS-PAGE under non-reducing condition

**Formulation**

0.22 $\mu$ m filtered PBS, pH 7.4

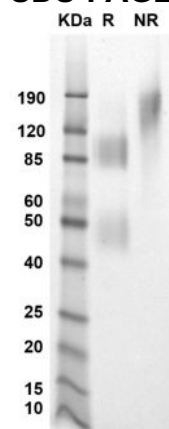
**Stability & Storage**

-80 $^{\circ}$ C

**Shipping Conditions**

Frozen Dry Ice

**SDS-PAGE**



MW: Molecular Weight marker reduced condition

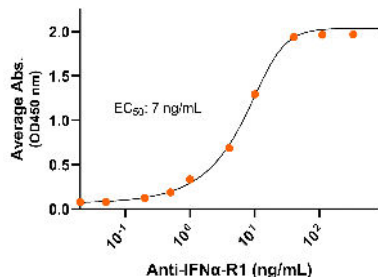
R: IFNAR heterodimer under reducing condition

NR: IFNAR heterodimer under non-reducing condition

The migration range of the heterodimer under reducing conditions is 40-60 kDa and 70-120 kDa. The migration range of the heterodimer under non-reducing conditions is 120-190 kDa on SDS PAGE.

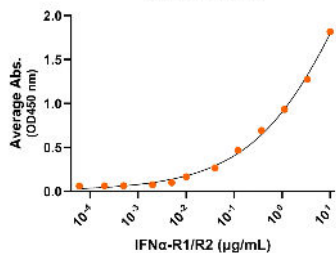
## Antibody Binding

**Human IFN $\alpha$ -R1/R2 heterodimer, ELISA**  
0.2  $\mu$ g of IFN $\alpha$ -R1 heterodimer per well



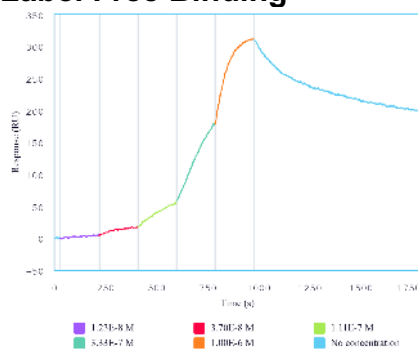
Immobilized human IFNAR heterodimer protein, His Tag (Cat. No. CSP-24025-A1B1) at 2  $\mu$ g/mL (100  $\mu$ L/well) can bind anti-human INFAR1 monoclonal antibody with half maximal effective concentration (EC50) range of 3.5-14 ng/mL (QC tested).

**Human IFN $\alpha$ -R1/R2 heterodimer /Type I IFN, ELISA**  
0.2  $\mu$ g of IFN per well



Immobilized Type I Interferon cytokine at 2  $\mu$ g/mL (100  $\mu$ L/well) can bind human IFNAR heterodimer protein, His Tag (Cat. No. CSP-24025-A1B1) (QC tested).

## Label Free Binding



Immobilized human IFNAR heterodimer protein, His tag (Cat. No. CSP-24025-A1B1) can bind human Type I Interferon cytokine with a KD of 33.5-134 nM as determined by LSPR (Nicoya Alto).

## Background

The interferon-alpha/beta receptor (interferon- $\alpha/\beta$  receptor, IFNAR, IFNaR, IFN $\alpha$ R), also known as Type 1 Interferon Receptor, is primarily located on the cell plasma membrane. IFNAR is a heterodimeric cell surface receptor complex composed of two subunits, IFNAR1 and IFNAR2. Each subunit of IFNAR contains an N-terminal ligand binding domain containing two (IFNAR2) or four (IFNAR1) fibronectin type II-like subdomains, a transmembrane domain, and a cytoplasmic domain. IFNAR1 and IFNAR2 association is essential for recognizing type I interferon (IFN) cytokines such as IFN- $\alpha$ , IFN- $\beta$  and others. The extracellular domains (ECDs) of IFNAR1 and IFNAR2 are specifically responsible for binding Type 1 interferons. Type 1 interferon interaction with both IFNAR1 and IFNAR2 is essential for stabilizing the receptor-ligand binding and facilitating downstream signaling. Upon binding to type I IFNs, IFNAR activates the JAK-STAT, MAPK, PI3K, and Akt signaling pathways. As Type 1 interferon signaling plays important roles in immune responses, dysregulation of IFNAR activated pathways has been associated with various diseases, such as neurodegenerative diseases, autoimmune disorders and cancer. IFNAR is an emerging therapeutic target for various types of diseases involving modulation of Type I interferon signaling. Our recombinant IFNAR1/R2 protein features the IFNAR heterodimer of IFNAR1 and IFNAR2.