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: IFNαb-R1/R2, Protein Dimer

Alternate Name(s): IFNAR1, IFNAR2, IFNAR, IFNaR, IFNAR1/R2, interferon-Alpha/Beta Receptor, interferon-α/β 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

Shipping Conditions
Product is shipped at ambient temperature.

Formulation
Lyophilized from 0.22 μm filtered solution in PBS, pH 7.4 with 10% trehalose as a protectant

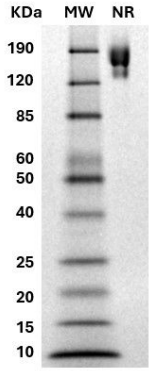
Stability & Storage
On receipt, store at -20 C or lower for long term storage.
This product is stable at:
-20 to -70 C for 12 months from date of receipt in lyophilized state.
-70 C for 3 months after reconstitution under sterile conditions.
Avoid repeated freeze-thaw cycles

Reconstitution of lyophilized product
For best performance, we strongly recommend you reconstitute the lyophilized product with deionized water to a stock solution of 500 μg/mL.
Solubilize for 20 minutes at room temperature with occasional gentle mixing. Avoid shaking or vortexing.

For 25μg product size:
Reconstitute with 50 μL sterile deionized water.

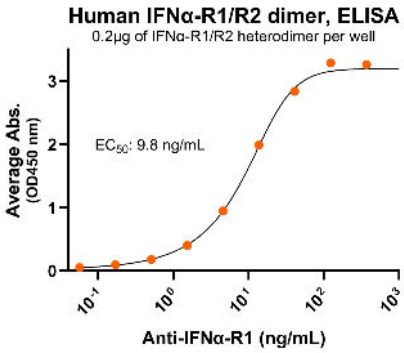
For 100μg product size:
Reconstitute with 200 μL sterile deionized water.

SDS-PAGE

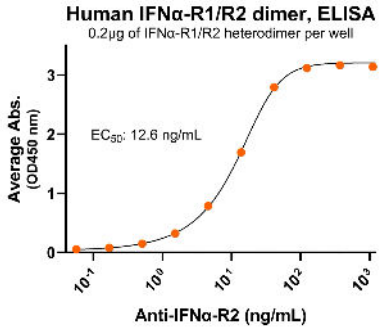


MW: Molecular Weight marker reduced condition
NR: IFNAR heterodimer under non-reducing condition
The migration range of the heterodimer under reducing conditions is 40-60 kDa and 70-120 kDa. The migration range of the heterodimer under non-reducing conditions is 120-190 kDa on SDS PAGE.

Antibody Binding

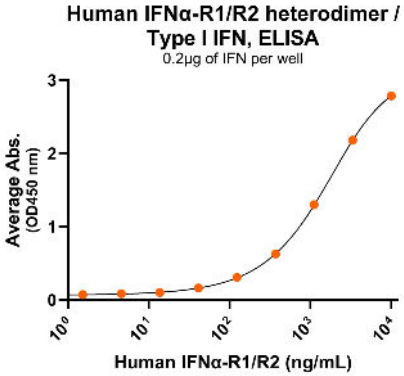


Immobilized human IFNAR heterodimer protein, His Tag (Cat. No. CSP-24025-A1B1) at 2 μg/mL (100 μL/well) can bind anti-human INFAR1 monoclonal antibody (Cat. No. CABh-24025.1) with half maximal effective concentration (EC50) range of 4.9-19.6 ng/mL (QC tested).



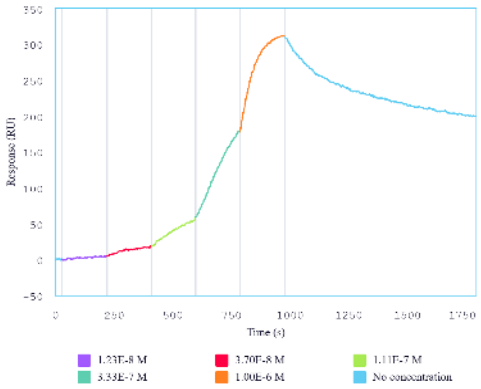
Immobilized human IFNAR heterodimer protein, His Tag (Cat. No. CSP-24025-A1B1) at 2 μg/mL (100 μL/well) can bind anti-human INFAR2 monoclonal antibody (Cat. No. CABh-24025.2) with half maximal effective concentration (EC50) range of 6.3-25.2 ng/mL (QC tested).

Ligand Binding



Immobilized Type I Interferon cytokine at 2 μg/mL (100 μL/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-α/β receptor, IFNAR, IFNaR, IFNαR), 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 IFNR2. 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-α, IFN-β 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.