



Bioactive, Recombinant Human IL-6R α /gp130 Protein Heterodimer, His and Strep Tag
Product Code: CSP-25249-A1B6
For Research Use Only (RUO)

Protein Name
IL6R / gp130

Expression Host
HEK293T

Alternate Name(s)

Cluster of Differentiation 126, CD126, IL6R, IL-6R-1, IL-6RA, IL6Q, IL6RA, IL6RQ, gp80, Interleukin 6 Cytokine Family Signal Transducer, IL6ST, Cluster of Differentiation 130, CD130, CDW130, GP130, Interleukin-6 receptor subunit beta, IL6Rb, IL-6RB, IL-6R beta, IL6 β , interleukin 6 signal transducer

Purity

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

Protein Construct

IL-6R heterodimer protein contains an IL-6R α extracellular domain (UniProt# P08887, amino acids Leu20-Pro365) and gp130 extracellular domain (UniProt# P40189, amino acids Glu23-Glu619) fused with a proprietary dimer motif followed by a His tag at the IL-6R α C-terminus and a Strep tag at the gp130 C-terminus. Expressed in HEK293T cell line.

Amino Acid Range

AA: L20-P365 ; BA: E23-E619

SDS-Page Molecular Weight

122 kDa. The migration range of the heterodimer protein with glycosylation under non-reducing condition is ~190 kDa and under reducing condition ~120 for IL-6R α chain and ~85 kDa for gp130 (IL-6R β) chain on SDS PAGE.

Formulation

0.22 μ m filtered PBS, pH 7.4

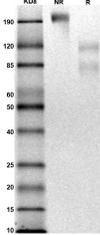
Shipping Conditions

Frozen Dry Ice

Stability & Storage

-80 $^{\circ}$ C

SDS-PAGE

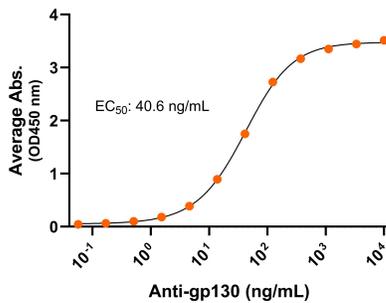


MW: Molecular Weight marker reduced condition
 NR: IL-6R α /gp130 heterodimer under non-reduced condition
 R: IL-6R α /gp130 heterodimer under reduced condition

The migration range of the heterodimer protein with glycosylation under non-reducing condition is ~190 kDa and under reducing condition ~120 for IL-6R α chain and ~85 kDa for gp130 (IL-6R β) chain on SDS PAGE.

Bioactivity – Antibody Binding

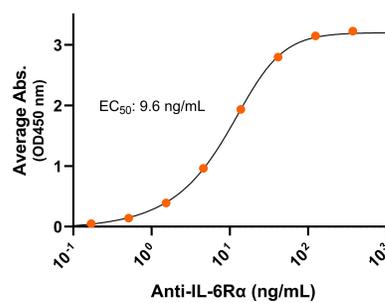
Human IL-6R α -His/gp130-Strep Heterodimer, ELISA
 0.2 μ g of IL-6R α /gp130 protein heterodimer per well



Immobilized human IL-6R α /gp130 protein heterodimer, His and Strep-tag (CSP-25249-A1B6) at 2 μ g/mL (100 μ L/well) can bind anti-human gp130 monoclonal antibody with half maximal effective concentration (EC50) range of 20.3-81.2 ng/mL (QC tested).

Bioactivity – Antibody Binding

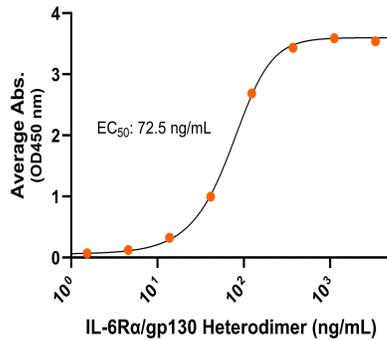
Human IL-6R α -His/gp130-Strep Heterodimer, ELISA
 0.2 μ g of IL-6R α /gp130 protein heterodimer per well



Immobilized human IL-6R α /gp130 protein heterodimer, His and Strep-tag (CSP-25249-A1B6) at 2 μ g/mL (100 μ L/well) can bind anti-human IL-6R α monoclonal antibody with half maximal effective concentration (EC50) range of 4.8-19.2 ng/mL (QC tested).

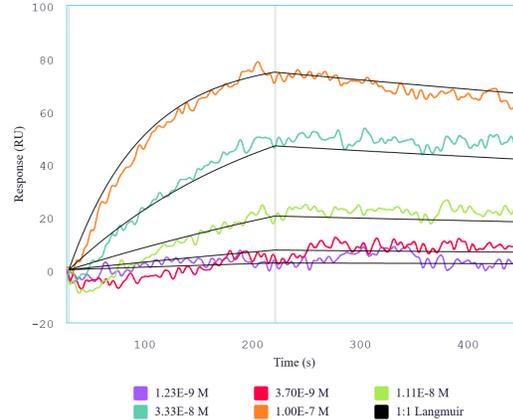
Bioactivity – Ligand Binding

Human IL-6R α -His/gp130-Strep Heterodimer / IL-6, ELISA
 0.2 μ g of IL-6 protein per well



Immobilized human IL-6 at 2 μ g/mL (100 μ L/well) can bind human IL-6R α /gp130 protein heterodimer, His and Strep-tag (CSP-25249-A1B6) with half maximal effective concentration (EC50) range of 36.3-145.1 ng/mL (QC tested).

Bioactivity – SPR



Immobilized human IL-6 can bind human IL-6R α /gp130 protein heterodimer, His and Strep-tag (CSP-25249-A1B6) with a KD of 0.7-2.6 nM as determined by SPR.

Background

Human interleukin 6 receptor (IL-6R) is a heterodimer consisting of IL-6R α and gp130 (IL-6R β). Both IL-6R α and gp130 are Type 1 transmembrane proteins. IL-6R α is Type 1 cytokine receptor and gp130 is a member of the class of tall cytokine receptors. IL-6R α contains an extracellular domain with an Ig-like domain, cytokine binding module (CBM) domains, and a long flexible stalk region followed by a transmembrane domain and intracellular domains. The extracellular domain of gp130 includes an N-terminal immunoglobulin-like (Ig-like) domain (D1), a cytokine-binding homology region (CHR, D2D3), and three membrane-proximal fibronectin type III domains (FNIII, D4 to D6). IL-6R α binding to its ligand interleukin 6 (IL-6) results in homodimerization and subsequent association with gp130 homodimer resulting in higher order complexes. The interaction between IL-6 cytokine and IL-6R is crucial for immune responses, inflammation, and hematopoiesis. Dysregulation of IL-6R is implicated in many cancers and autoimmune diseases, therefore, a recombinant protein mimicking the IL-6R heterodimer conformation can be critical for immunology research and therapeutic discovery.