Product Name: Bioactive, Human PRLR Protein Dimer, His-Avi Tag

Product Code: CSP-24089-03

FOR RESEARCH USE ONLY (RUO)

Protein Name: PRLR, Protein Dimer

Alternate Name(s): prolactin R, PRL-R

Expression Host
HEK293T

Amino Acid Range
Q25-D234

Protein Construct
PRLR dimer protein contains a PRLR extracellular domain (UniProt# P16471) fused with a proprietary dimer motif followed by a tandem His-Avi tag at the C-terminus. Expressed in HEK293T cell line.

SDS-Page Molecular Weight
69 kDa. The migration range of the dimer protein with glycosylation under non-reducing condition is 120-190 kDa on SDS PAGE.

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

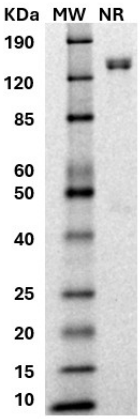
Shipping Conditions
Product is shipped at ambient temperature.

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

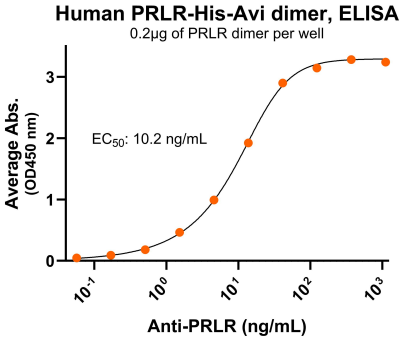
Reconstitution of lyophilized product
For best performance, we strongly recommend you reconstitute the lyophilized product with deionized water to a stock solution of 500 μg/mL.
Solubilize for 20 minutes at room temperature with occasional gentle mixing. Avoid shaking or vortexing.
For 25μg product size:
Reconstitute with 50 μL sterile deionized water.
For 100μg product size:
Reconstitute with 200 μL sterile deionized water.

SDS-PAGE



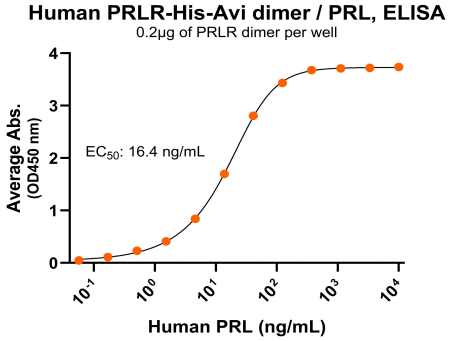
MW: Molecular Weight marker reduced condition
NR: PRLR dimer under non-reduced condition
The migration range of the dimer protein with glycosylation under non-reducing condition is 120-190 kDa on SDS PAGE.

Antibody Binding



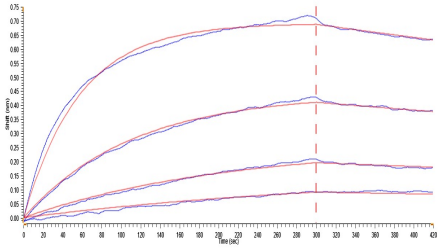
Immobilized human PRLR dimer protein, His-Avi tag (Cat. No. CSP-24089-03) at 2 μg/mL (100 μL/well) can bind anti-human PRLR monoclonal antibody, with half maximal effective concentration (EC50) range of 5.1-20.4 ng/mL (QC tested).

Ligand Binding



Immobilized human PRLR dimer protein, His-Avi tag (Cat. No. CSP-24089-03) at 2 μg/mL (100 μL/well) can bind human PRL, with half maximal effective concentration (EC50) range of 8.2-32.8 ng/mL (QC tested).

Label Free Binding



Human PRL, mouse Fc tag on an Anti-Mouse IgG Fc probe can bind human PRLR dimer protein His-Avi tag (Cat. No. CSP-24089-03) with a KD of 5.3-21 nM as determined by BLI.

Background

Human prolactin receptor (PRLR), also known as PRL-R, is a class 1 cytokine receptor glycoprotein that binds prolactin (PRL) as well as growth hormone (GH) and human placental lactogen (hPL). PRLR contains an extracellular domain with a cytokine homology module formed by two fibronectin type III domains, D1 and D2, followed by a transmembrane domain and cytoplasmic domain. PRLR is expressed on cells in mammary glands, pituitary gland, and other tissues. PRLR exists as a monomer and can form dimers. PRLR dimerization is a critical mechanism in PRL signaling, influencing numerous physiological and pathological processes. PRLR pathological dimerization, including constitutive or ligand-independent PRLR dimers sustain abnormal signaling, contributes to cancer, hyperprolactinemia, and immune dysfunction. Dysregulation of PRLR can promote tumor activity and positively regulate the proliferation of malignant cells in breast cancer. PRLR is an attractive therapeutic target for PRLR related diseases including breast cancer, hyperprolactinemia, and metabolic disorders. The recombinant dimeric protein mimicking the PRLR structural dynamics may offer better immunogen and antigen to develop precision-targeted therapeutics with fewer side effects.