Human IGF-I R / CD221 Protein, His Tag (MALS verified)

Catalog # IGR-H5229

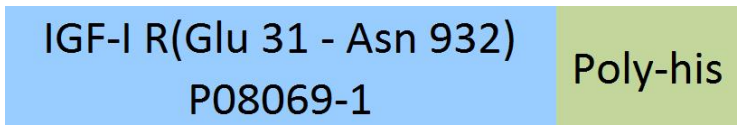
Synonym

IGF1R,IGFR,JTK13,CD221,MGC142170,MGC142172,MGC18216

Source

Human IGF-I R, His Tag(IGR-H5229) is expressed from human 293 cells (HEK293). It contains AA Glu 31 - Asn 932 (Accession # P08069-1).
Predicted N-terminus: Glu 31

Molecular Characterization



This protein carries a polyhistidine tag at the C-terminus.

This protein contains a furin convertase cleavage site, 737-RKRR-740, and will be partially processed into N (α chain) and C-terminal fragment (partial β chain) with calculated MW of 81.0 kDa and 23.8 kDa respectively. The protein migrates as 35-45 kDa (partial β chain), 110-120 kDa (α chain) and 130 kDa (α chain & partial β chain) under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>90% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

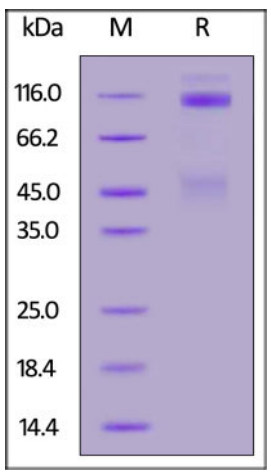
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

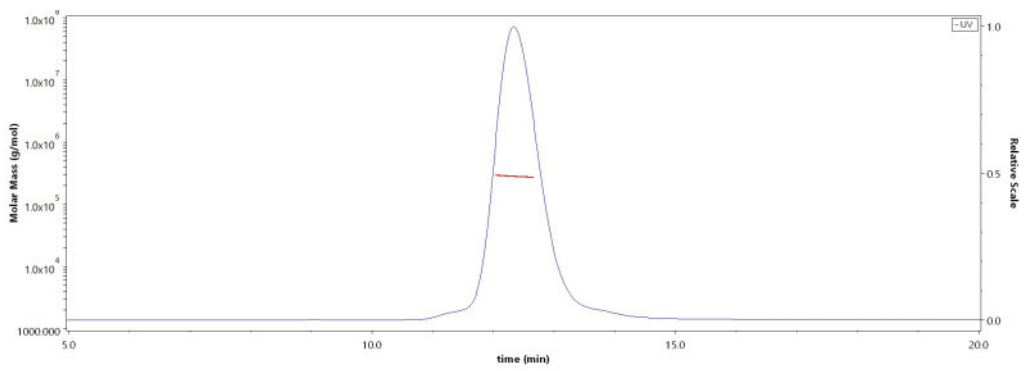
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



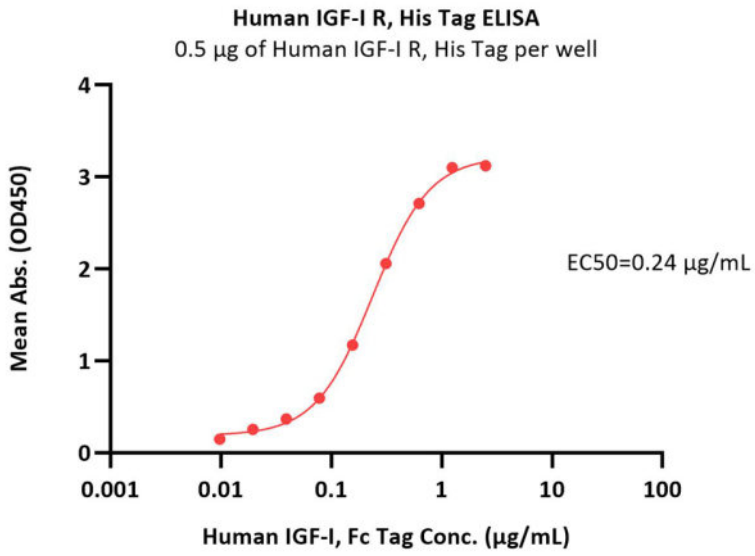
Human IGF-I R, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

SEC-MALS



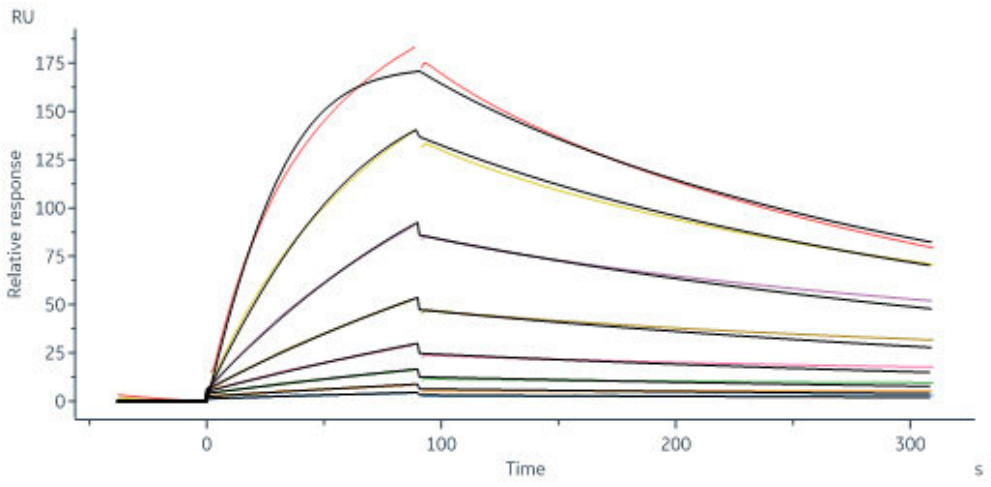
The purity of Human IGF-I R, His Tag (Cat. No. IGR-H5229) is more than 90% and the molecular weight of this protein is around 252-308 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA

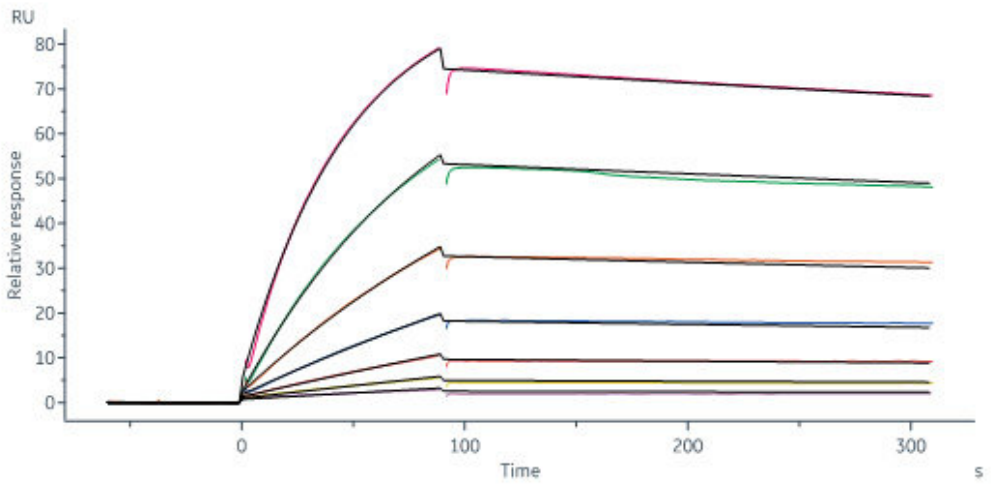


Immobilized Human IGF-I R, His Tag (Cat. No. IGR-H5229) at 5 μg/mL (100 μL/well) can bind Human IGF-I, Fc Tag with a linear range of 0.01-0.625 μg/mL (QC tested).

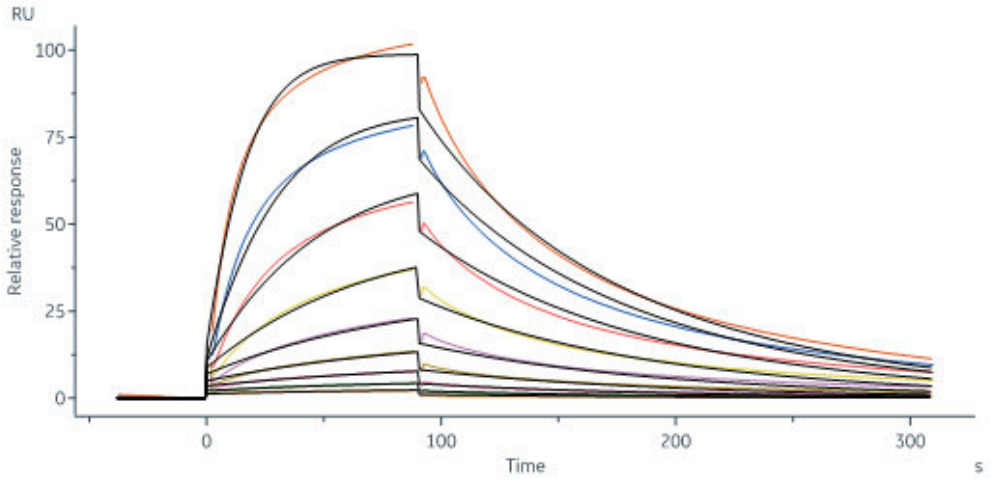
Bioactivity-SPR



Human IGF-I R, His Tag (Cat. No. IGR-H5229) immobilized on CM5 Chip can bind Biotinylated Human IGF-I, His,Avitag (Cat. No.IG1-H82Q6) with an affinity constant of 68 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).



Human IGF-I R, His Tag (Cat. No. IGR-H5229) captured on CM5 chip via anti-His antibody can bind Human IGF-I, Fc Tag with an affinity constant of 0.189 μM as determined in a SPR assay (Biacore 8K) (Routinely tested).



Human IGF-I R, His Tag (Cat. No. IGR-H5229) immobilized on CM5 Chip can bind Biotinylated Human IGF-II, His,Avitag with an affinity constant of 51.2 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).

Background

The Insulin-like Growth Factor 1 Receptor (IGF1) is also known as CD221, JTK13. and is a transmembrane receptor that is activated by IGF-1 and by the related growth factor IGF-2. It belongs to the large class of tyrosine kinase receptors. This receptor mediates the effects of IGF-1, which is a polypeptide protein hormone similar in molecular structure to insulin. IGF1R is make up of two alpha subunits and two beta subunits ,the Both the α and β subunits are synthesized from a single mRNA precursor. The precursor is then glycosylated, proteolytically cleaved, and crosslinked by cysteine bonds to form a functional transmembrane αβ chain.The α chains are located extracellularly while the β subunit spans the membrane and are responsible for intracellular signal transduction upon ligand stimulation. IGF1R have a binding site for ATP, which is used to provide the phosphates for autophosphorylation. There is a 60% homology between IGF1R and the insulin receptor. In response to ligand binding, the α chains induce the tyrosine autophosphorylation of the β chains. This event triggers a cascade of intracellular signaling that, while somewhat cell type specific, often promotes cell survival and cell proliferation.

Clinical and Translational Updates