

Synonym

IGF-I,IGF1A,somatomedin C,MGF

SourceHuman IGF-I, Fc Tag(IG1-H4269) is expressed from human 293 cells (HEK293). It contains AA Gly 49 - Ala 118 (Accession # [P05019](#)).**Molecular Characterization**

Fc(Thr 106 - Lys 330) P01857	IGF-I(Gly 49 - Ala 118) P05019
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This protein carries a human IgG1 Fc tag at the N-terminus.

The protein has a calculated MW of 34.6 kDa. The protein migrates as 40 kDa under reducing (R) condition (SDS-PAGE).

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>98% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 µm filtered solution in 50 mM Tris, 100 mM Glycine, pH7.5 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

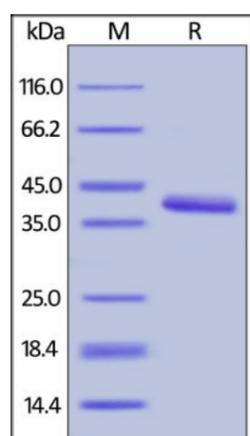
*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.***Storage**

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

Please avoid repeated freeze-thaw cycles.

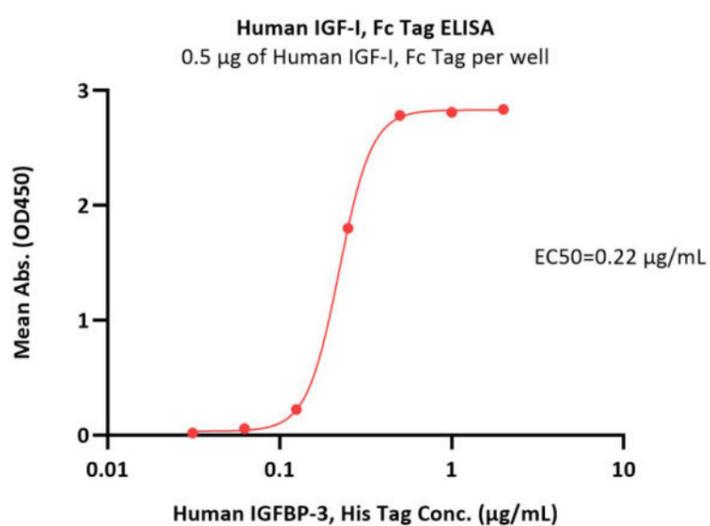
This product is stable after storage at:

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

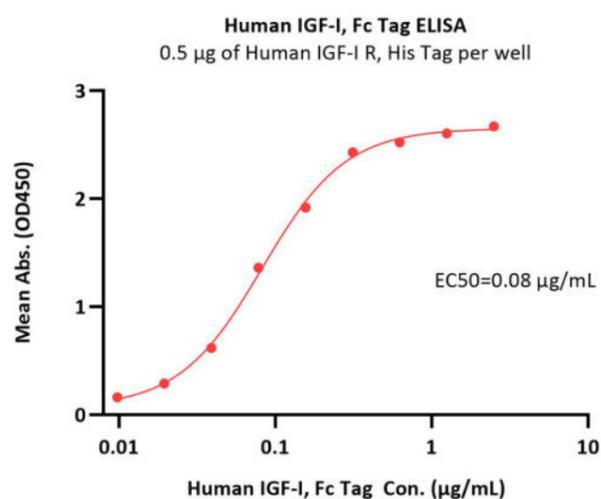
SDS-PAGE

Human IGF-I, Fc Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 98%.

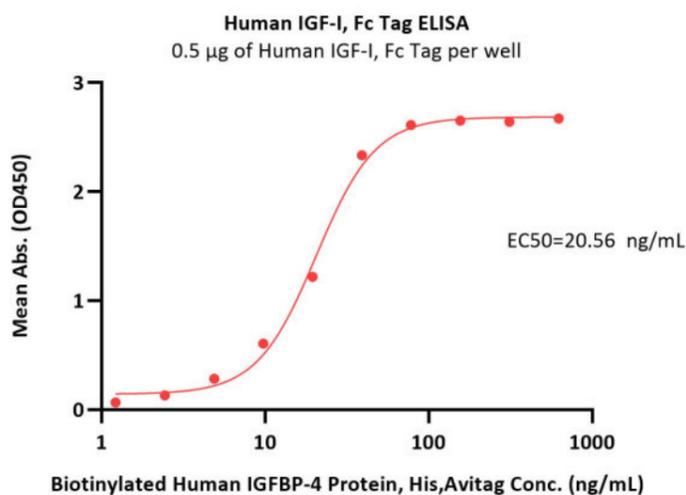
Bioactivity-ELISA



Immobilized Human IGF-I, Fc Tag (Cat. No. IG1-H4269) at 5 µg/mL (100 µL/well) can bind Human IGFBP-3, His Tag (Cat. No. IG3-H52H9) with a linear range of 0.125-1 µg/mL (QC tested).

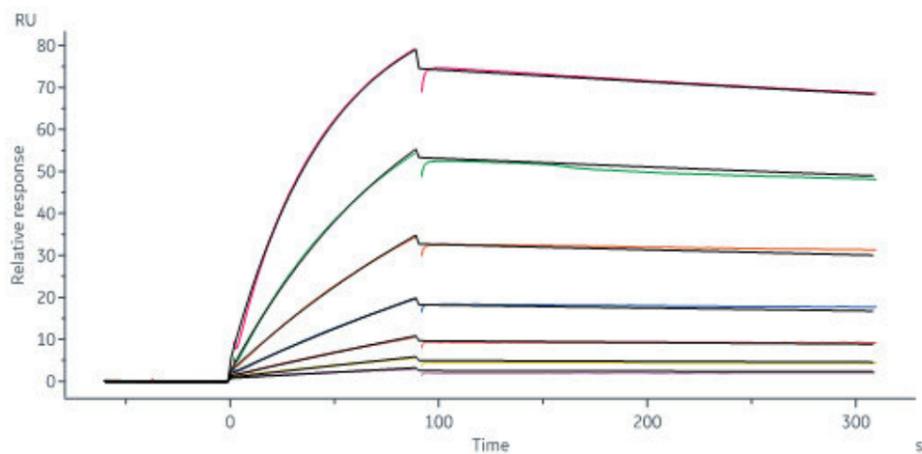


Immobilized Human IGF-I R, His Tag (Cat. No. IGR-H5229) at 5 µg/mL (100 µL/well) can bind Human IGF-I, Fc Tag (Cat. No. IG1-H4269) with a linear range of 0.039-0.313 µg/mL (Routinely tested).



Immobilized Human IGF-I, Fc Tag (Cat. No. IG1-H4269) at 5 µg/mL (100 µL/well) can bind Biotinylated Human IGFBP-4 Protein, His,Avitag (Cat. No. IG4-H82E3) with a linear range of 2-40 ng/mL (Routinely tested).

Bioactivity-SPR



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 (Cat. No. IG1-H4269) with an affinity constant of 0.189 µM as determined in a SPR assay (Biacore 8K) (Routinely tested).

Background

Insulin-like growth factor 1 (IGF-1) is also known as somatomedin C, IGF1A, IGFI, sulfation factor, and is a hormone similar in molecular structure to insulin. It plays an important role in childhood growth and continues to have anabolic effects in adults. A synthetic analog of IGF-1, mecasermin is used for the treatment of growth failure. IGF-1 consists of 70 amino acids in a single chain with three intramolecular disulfide bridges. IGF-1 has a molecular weight of 7649 daltons. IGF-1 is produced primarily by the liver as an endocrine hormone as well as in target tissues in a paracrine/autocrine fashion. IGF-1 binds to at least two cell surface receptors: the Insulin-like growth factor 1 receptor, abbreviated as "IGF1R", and the insulin receptor. The IGF-1 receptor seems to be the "physiologic" receptor - it binds IGF-1 at significantly higher affinity than the IGF-1 that is bound to the insulin receptor. Like the insulin receptor, the IGF-1 receptor is a receptor tyrosine kinase - meaning it signals by causing the addition of a phosphate molecule on particular tyrosines. Its primary action is mediated by binding to its specific receptor IGF1R, present on many cell types in many tissues. Binding to the IGF1R, a receptor tyrosine kinase, initiates intracellular signaling; IGF-1 is one of the most potent natural activators of the AKT signaling pathway, a stimulator of cell growth and proliferation, and a potent inhibitor of programmed cell death. Insulin-like growth factor 1 has been shown to bind and interact with all the IGF-1 Binding Proteins (IGFBPs), of which there are six (IGFBP1-6). Specific references are provided for interactions with IGFBP3, IGFBP4 and IGFBP7.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.