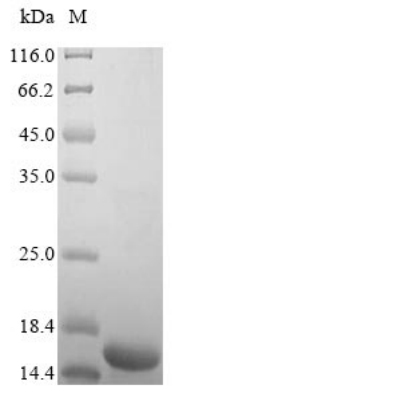
Recombinant Human Insulin-like growth factor I (IGF1)

Product Code	CSB-EP356436HU
Relevance	The insulin-like growth factors, isolated from plasma, are structurally and functionally related to insulin but have a much higher growth-promoting activity. May be a physiological regulator of [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts. Stimulates glucose transport in bone-derived osteoblastic (PyMS) cells and is effective at much lower concentrations than insulin, not only regarding glycogen and DNA synthesis but also with regard to enhancing glucose uptake. May play a role in synapse maturation. Ca2+-dependent exocytosis of IGF1 is required for sensory perception of smell in the olfactory bulb. Acts as a ligand for IGF1R. Binds to the alpha subunit of IGF1R, leading to the activation of the intrinsic tyrosine kinase activity which autophosphorylates tyrosine residues in the beta subunit thus initiatiating a cascade of down-stream signaling events leading to activation of the PI3K-AKT/PKB and the Ras-MAPK pathways. Binds to integrins ITGAV:ITGB3 and ITGA6:ITGB4. Its binding to integrins and subsequent ternary complex formation with integrins and IGFR1 are essential for IGF1 signaling. Induces the phosphorylation and activation of IGFR1, MAPK3/ERK1, MAPK1/ERK2 and AKT1
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P05019
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GPETLCGAELVDALQFVCGDRGFYFNKPTGYGSSSRRAPQTGIVDECCFRSC DLRRLEMYCAPLKPAKSA
Lead Time	3-7 business days
Research Area	Signal Transduction
Source	E.coli
Gene Names	IGF1
Protein Names	Mechano growth factor Somatomedin-C IBP1
Expression Region	49-118aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged

Mol. Weight	13.2 kDa
Protein Description	Full Length of Mature Protein

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The expression vector recombined with the recombinant DNA was transformed into the E.coli for expression. The recombinant DNA resulted from the fusion of the gene coding for the 49-118aa of the human IGF1 protein and the N-terminal 6xHis tag gene. The product was purified and isolated to get the recombinant human IGF1 protein with N-terminal 6xHis tag. The purity of this recombinant IGF1 protein reaches up to 90%. Under SDS-PAGE condition, this recombinant IGF1 protein showed a band with a molecular weight of about 15 kDa on the gel. It may be used in the research of IGF1-participating signal transduction.

IGF-1 is a gene encoding a protein named insulin-like growth factor I (abbreviated IGF1) and belongs to insulin family, which are structurally closely related to pro-insulin. IGF-1 can bind to and activate insulin receptors. The peptide family has two members, IGF-1, the adult form, and IGF-2, the major fetal form. The human IGF-1 gene consists of six exons, including two leader exons, and has two promoters. IGF1 is the major mediator of prenatal and postnatal growth. The disease involved IGF1 is called insulin-like growth factor I deficiency (IGF1 deficiency). IGF1 is produced primarily in liver and serves as an endocrine hormone mediating the action of GH in peripheral tissues such as muscle, cartilage, bone, kidney, nerves, skin, lungs, and the liver itself.

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.