10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# IGF-I

Catalog # PVGS1241

## Product Information

| | |
|---|---|
| **Primary Accession** | P05019 |
| **Species** | Human |
| **Sequence** | Gly49-Ala118 |
| **Purity** | > 95% as analyzed by SDS-PAGE<br>> 95% as analyzed by HPLC |
| **Endotoxin Level** | |
| **Expression System** | E. coli |
| **Formulation** | Lyophilized after extensive dialysis against PBS. |
| **Reconstitution** | It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in dd$H_2O$ up to 100 g/ml. |
| **Storage & Stability** | Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles. |

## Additional Information

| | |
|---|---|
| **Gene ID** | 3479 |
| **Other Names** | Insulin-like growth factor 1 {ECO:0000312\|HGNC:HGNC:5464}, Insulin-like growth factor I, IGF-I, Mechano growth factor, MGF, Somatomedin-C, IGF1 (HGNC:5464) |
| **Target Background** | Insulin-like growth factor I (IGF-I) also known as Somatamedin C is a hormone similar in molecular structure to insulin. Human IGF-I has two isoforms (IGF-IA and IGF-IB) which are differentially expressed by various tissues. Mature human IGF-I shares 94% and 96% aa sequence identity with mouse and rat IGF-I, respectively. Both IGF-I and IGF-II (another ligand of IGF) can signal through the IGF-I receptor (IGFIR), but only IGF-II can bind the IGF-II receptor (IGFIIR/ Mannose-6-phosphate receptor). IGF-I plays an important role in childhood growth and continues to have anabolic effects in adults. |

## Protein Information

| | |
|---|---|
| **Name** | IGF1 ( HGNC:5464) |

| | |
|---|---|
| **Function** | 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 (PubMed:21076856, PubMed:24132240). Ca(2+)-dependent exocytosis of IGF1 is required for sensory perception of smell in the olfactory bulb (By similarity). 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 initiating 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 (PubMed:19578119, PubMed:22351760, PubMed:23243309, PubMed:23696648). As part of the MAPK/ERK signaling pathway, acts as a negative regulator of apoptosis in cardiomyocytes via promotion of STUB1/CHIP-mediated ubiquitination and degradation of ICER-type isoforms of CREM (By similarity). |
| **Cellular Location** | Secreted {ECO:0000250\|UniProtKB:P05017}. |

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.