

# IGF-I

Catalog # PVGS1241

## Product Information

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<b>Primary Accession Species</b>	<a href="#">P05019</a> Human
<b>Sequence</b>	Gly49-Ala118
<b>Purity</b>	> 95% as analyzed by SDS-PAGE > 95% as analyzed by HPLC
<b>Endotoxin Level</b>	
<b>Expression System</b>	E. coli
<b>Formulation</b>	Lyophilized after extensive dialysis against PBS.
<b>Reconstitution</b>	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in ddH <sub>2</sub> O up to 100 µg/ml.
<b>Storage &amp; Stability</b>	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

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<b>Gene ID</b>	3479
<b>Other Names</b>	Insulin-like growth factor 1 {ECO:0000312 HGNC:HGNC:5464}, Insulin-like growth factor I, IGF-I, Mechano growth factor, MGF, Somatomedin-C, IGF1 ( <a href="#">HGNC:5464</a> )
<b>Target Background</b>	Insulin-like growth factor I (IGF-I) also known as Somatomedin 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

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<b>Name</b>	IGF1 ( <a href="#">HGNC:5464</a> )
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**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}.

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