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LR3-IGF-I
Catalog # PVGS1341

Specification

LR3-IGF-I - Product Information

Primary Accession P05019
Species
Human

Sequence
Leu53-Ala118, expressed with additional N-terminal sequence (MFPAMPLSSLFVNGPRT)

Purity
> 95% as analyzed by SDS-PAGE

Endotoxin Level
< 1 EU/ µg of protein by gel clotting method

Biological Activity
ED₅₀ < 10.0 ng/ml, measured by the dose-dependantproliferation of CHO cells, corresponding to a specific activity of > 1.0 × 10⁵ units/mg.

Expression System
E. coli

Formulation **Lyophilized after extensive dialysis against 50 mM acetic acid.**

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 10 mM HCl up to 1mg/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.

LR3-IGF-I - 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
IGF-1 is a well-characterized basic peptide secreted by the liver that circulates in the blood. It has

growth-regulating, insulin-like, mitogenic activities. IGF-1 is a growth factor that has a major, but not absolute, dependence on somatotropin. It is believed to be mainly active in adults in contrast to IGF-2, which is also a major fetal growth factor. Human Long R3 Insulin-like Growth Factor-1 (rhLR3IGF-1) contains an 83 amino acid analog of human IGF-I. Compared to the complete human IGF-I sequence, an addition of the rhLR3IGF-1 includes the substitution of an Arg for the Glu at position 3 (hence R3)and a13 amino acid extension peptide at the N-terminus. An enhanced potency is due to the markedly decreased binding of human Long-R3-IGF-I to IGF binding proteins which normally inhibit the biological actions of IGFs.

LR3-IGF-I - 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}.

LR3-IGF-I - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LR3-IGF-I - Images

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