

IGF-I/IGF-1 Protein, Human (HEK293, hFc)

Cat. No.:	HY-P73136
Synonyms:	Insulin-like growth factor I; IGF-I; MGF; Somatomedin-C; IBP1
Species:	Human
Source:	HEK293
Accession:	P05019-1 (G49-A118)
Gene ID:	3479
Molecular Weight:	35-40 kDa

PROPERTIES

AA Sequence	G P E T L C G A E L V D A L Q F V C G D R G F Y F N K P T G Y G S S S R R A P Q T G I V D E C C F R S C D L R R L E M Y C A P L K P A K S A
Biological Activity	Human IGFBP-3, His Tag captured on CM5 Chip via anti-his antibody can bind Human IGFI, hFc Tag with an affinity constant of 1.21 nM as determined in SPR assay
Appearance	Lyophilized powder.
Formulation	Lyophilized from 0.22 µm filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>The LR3 IGF-I/IGF-1 protein, structurally and functionally akin to insulin, boasts significantly heightened growth-promoting activity compared to its counterpart. Positioned as a potential physiological regulator, LR3 IGF-I may govern [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts, demonstrating effective stimulation of glucose transport in bone-derived osteoblastic (PyMS) cells even at markedly lower concentrations than insulin. Its multifaceted roles extend to potential involvement in synapse maturation and the Ca(2+)-dependent exocytosis essential for sensory perception of smell in the olfactory bulb. Operating as a ligand for IGF1R, LR3 IGF-I binds to the alpha subunit, initiating the activation of intrinsic tyrosine kinase activity, autophosphorylating tyrosine residues in the beta subunit. This activation</p>
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triggers a cascade of downstream signaling events leading to the activation of the PI3K-AKT/PKB and Ras-MAPK pathways. Further, LR3 IGF-I forms crucial ternary complexes with integrins (ITGAV:ITGB3 and ITGA6:ITGB4) and IGFR1, essential for comprehensive IGF1 signaling, influencing the phosphorylation and activation of IGFR1, MAPK3/ERK1, MAPK1/ERK2, and AKT1. It also exhibits diverse molecular interactions, including with SH2D3C isoform 2.

Caution: Product has not been fully validated for medical applications. For research use only.

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