

Animal-Free IGF-I/IGF-1 Protein, Mouse (His)

Cat. No.:	HY-P70698AF
Synonyms:	rMuIGF-1; IGF-IA; Somatamedin C; MGF; IGF-I
Species:	Mouse
Source:	E. coli
Accession:	P05017 (G49-A118)
Gene ID:	16000
Molecular Weight:	Approximately 8.61 kDa

PROPERTIES

AA Sequence	M G P E T L C G A E L V D A L Q F V C G P R G F Y F N K P T G Y G S S I 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 T K A A
Biological Activity	Measure by its ability to induce MCF-7 cells proliferation. The ED ₅₀ for this effect is <2 ng/mL. The specific activity of recombinant mouse IGF-I is > 5 x 10 ⁵ IU/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 8.0.
Endotoxin Level	<0.1 EU per 1 µg of the protein by the 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	The IGF-I/IGF-1 protein, akin to insulin in structure and function, demonstrates significantly heightened growth-promoting activity. As a physiological regulator, it may govern [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts, effectively stimulating glucose transport in bone-derived osteoblastic (PyMS) cells at markedly lower concentrations than insulin. Additionally, IGF-I may contribute to synapse maturation and Ca ²⁺ -dependent exocytosis, crucial for sensory perception of smell in the olfactory bulb. Acting as a ligand for IGF1R, it binds to the alpha subunit, triggering the activation of intrinsic tyrosine kinase activity, which leads to autophosphorylation of tyrosine residues in the beta subunit. This initiation sets off a cascade of downstream signaling events, activating the PI3K-AKT/PKB and Ras-MAPK pathways. IGF-I also forms essential ternary complexes with integrins (ITGA6:ITGB3 and ITGA6:ITGB4) and IGFR1 for
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comprehensive IGF1 signaling, influencing the phosphorylation and activation of IGF1R, MAPK3/ERK1, MAPK1/ERK2, and AKT1. Moreover, it interacts with SH2D3C isoform 2, highlighting its diverse molecular engagements.

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

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