

Animal-Free IGF-I Protein, Pig (His)

Cat. No.:	HY-P700241AF
Synonyms:	Insulin-like growth factor I; IGF-I; MGF; Somatomedin-C; IBP1
Species:	Pig
Source:	E. coli
Accession:	P16545 (G49-A118)
Gene ID:	397491
Molecular Weight:	Approximately 8.59 kDa

PROPERTIES

AA Sequence	M 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
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	<p>The IGF-I protein, sharing structural and functional similarities with insulin, surpasses its counterpart in growth-promoting activity. It potentially acts as a physiological regulator, influencing [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts. Demonstrating efficacy in stimulating glucose transport in bone-derived osteoblastic (PyMS) cells at significantly lower concentrations than insulin, IGF-I extends its impact to glycogen and DNA synthesis, as well as enhanced glucose uptake. With a potential role in synapse maturation, IGF-I is implicated in Ca(2+)-dependent exocytosis essential for sensory perception of smell in the olfactory bulb. Functioning as a ligand for IGF1R, it binds to the alpha subunit, initiating the activation of intrinsic tyrosine kinase activity, leading to a cascade of downstream signaling events, including the activation of the PI3K-AKT/PKB and Ras-MAPK pathways. Essential for IGF1 signaling, IGF-I forms crucial ternary complexes with integrins (ITGA5:ITGB3 and ITGA6:ITGB4) and IGFR1, influencing the phosphorylation and activation of IGFR1, MAPK3/ERK1, MAPK1/ERK2, and AKT1.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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