Data Sheet (Cat.No.TMPY-04942)

TargetMol

IGF1 LR3 Protein, Human, Recombinant

General Information

Synonyms:	IGF-I;insulin-like growth factor 1 (somatomedin C);IGF-1;IGF1A;IGFI;MGF;IGF-I
Protein Construction:	A DNA sequence encoding the human IGF1 (P05019-1) (Gly49-Ala118, with mutation Glu 51 Arg) was expressed with a 13 amino acids (MFPAMPLSSLFVN) at its N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	P. pastoris (Yeast)
Accession:	P05019-1
Molecular Weight:	9.1 kDa (predicted)

QC Testing

Biological Activity:	Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. The ED50 for this effect is typically 1.5-6 ng/mL.
Purity:	> 95% as determined by SDS-PAGE.
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

IGF I, also known as Mechano Growth Factor, somatomedin-C, IGF-I, and IGF1, is a secreted protein that belongs to the insulin family. The insulin family, comprised of insulin, relaxin, insulin-like growth factors I and II (IGF-I and IGF-II), and possibly the beta-subunit of 7S nerve growth factor, represents a group of structurally related polypeptides whose biological functions have diverged. The IGFs, or somatomedins, constitute a class of

polypeptides that have a key role in pre-adolescent mammalian growth. IGF-I expression is regulated by GH and mediates postnatal growth, while IGF-II appears to be induced by placental lactogen during prenatal development. IGF1 / IGF-I may be a physiological regulator of [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts. IGF1 / IGF-I stimulates glucose transport in rat bone-derived osteoblastic (PyMS) cells and is effective at much lower concentrations than insulin, not only regarding glycogen and DNA synthesis but also about enhancing glucose uptake. Defects in IGF1 / IGF-I are the cause of insulin-like growth factor I deficiency (IGF1 deficiency) which is an autosomal recessive disorder characterized by growth retardation, sensorineural deafness, and mental retardation.

Reference

Jansen M., et al.,(1983), Sequence of cDNA encoding human insulin-like growth factor I precursor. Nature 306:609-611.

de Pagter-Holthuizen P., et al., (1986), Organization of the human genes for insulin-like growth factors I and II. FEBS Lett. 195:179-184.

le Bouc Y., et al.,(1986), Complete characterization of the human IGF-I nucleotide sequence isolated from a newly constructed adult liver cDNA library.FEBS Lett. 196:108-112.

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