Human IGF1 / IGF-I Protein

Catalog Number: 10598-HNAE

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

IGF-1; IGF-I; IGF1A; IGFI; IGF-I; MGF

Protein Construction:

A DNA sequence encoding the human IGF1 (P05019-1) (Gly49-Ala118) was expressed.

Source: Human

Expression Host: E. coli

QC Testing

Purity: ≥ 95 % as determined by SDS-PAGE. ≥ 90 % as determined by SEC-HPLC.

Bio Activity:

1.Immobilized Recombinant Human IGF1 / IGF-I Protein (Cat: 10598-HNAE) at 2 μg/mL (100 μL/well) can bind Recombinant Human IGFBP4 Protein (His Tag) (Cat: 10967-H08H), the EC50 is 40-130 ng/mL.
2. Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. The ED50 for this effect is typically 3.5-14 ng/mL.
3.Human breast cancer organoids were cultured with FGF7(Cat#10210-H07E), RSPO1(Cat#11083-HNAS), IGF1(Cat#10598-HNAE), EGF(Cat#50482-MNCH), NRG1 Beta 1(Cat#11609-H01H), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.
4.Human breast organoids were cultured with IGF1(Cat#10598-HNAE), NRG1 Beta 1(Cat#11609-H01H). (Routinely tested). Data provided by D1 Medical Technology.
5.Human ovarian organoids were cultured with IGF1(Cat#10598-HNAE), NRG1 Beta 1(Cat#11609-H01H), RSPO1(Cat#11083-HNAS), EGF(Cat#50482-MNCH), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.
6.Western blot analysis of extracts from serum-starved MCF7, untreated (line A); treated with IGF-1 (Cat# 10598-HNAE) (100 ng/mL, 30 min; +) (line B); treated with IGF-1 and lambda-phosphatase (line C) using Phospho-S6K1 (Thr389) rabbit monoclonal Antibody (Cat# 110396-R0001) at 1:5000 dilution(upper), or Anti-RPS6KB1 rabbit polyclonal antibody (Cat# 10099-T38) (lower) at 1:5000 dilution (Routinely tested).

Endotoxin:

<10 EU per mg protein.

Predicted N terminal: Gly 49

Molecular Mass:

The recombinant human IGF1 consists of 71 amino acids and has a calculated molecular mass of 7.8 KDa.

Formulation:

Lyophilized from sterile 30% Acetonitrile, 0.1% TFA

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Stability & Storage:
Samples are stable for twelve months from date of receipt at -20℃ to -80℃.

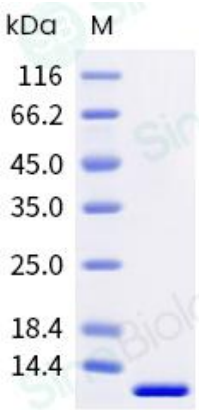
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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.

References

1.Jansen M., *et al.*,(1983), Sequence of cDNA encoding human insulin-like growth factor I precursor. Nature 306:609-611. 2.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. 3.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.