Active Insulin Like Growth Factor 1 (IGF1)

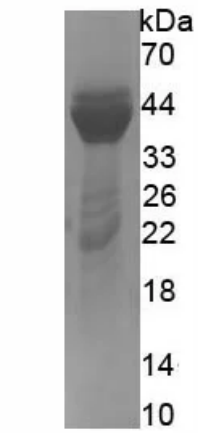
Catalog#:PXH12078

概述（Summary）

别称（Alternative Names）	IGFI; IGF1A; IBP1; MGF; Somatomedin C; Mechano Growth Gactor
纯度（Purity）	Greater than 95% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Gly49-Ala118】
Accession #	P05019
表达宿主（Host）	-
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	37.7 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of 20mM Tris, 150mM NaCl, pH8.0, containing 1mM EDTA, 1mM DTT, 0.01% SKL, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.2-1.0 mg/mL. Do not vortex.
背景介绍（References）	The insulin-like growth factors, isolated from plasma, are structurally and functionally related to insulin but have a much higher growth-promoting activity. May be a physiological regulator of [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts. Stimulates glucose transport in bone-derived osteoblastic (PyMS) cells and is effective at much lower concentrations than insulin, not only regarding glycogen and DNA synthesis but also with regard to enhancing glucose uptake. May play a role in synapse maturation. Ca(2+)-dependent exocytosis of IGF1 is required for sensory perception of smell in the olfactory bulb. Acts as a ligand for IGF1R. Binds to the alpha subunit of IGF1R,

leading to the activation of the intrinsic tyrosine kinase activity which autophosphorylates tyrosine residues in the beta subunit thus initiatiating a cascade of down-stream signaling events leading to activation of the PI3K-AKT/PKB and the Ras-MAPK pathways. Binds to integrins ITGAV:ITGB3 and ITGA6:ITGB4. Its binding to integrins and subsequent ternary complex formation with integrins and IGFR1 are essential for IGF1 signaling. Induces the phosphorylation and activation of IGFR1, MAPK3/ERK1, MAPK1/ERK2 and AKT1.

电泳图（SDS-PAGE image）



Greater than 95% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

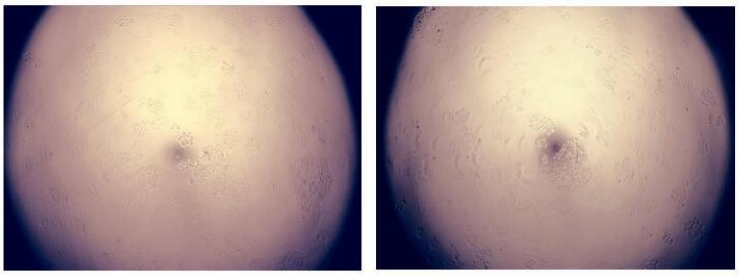
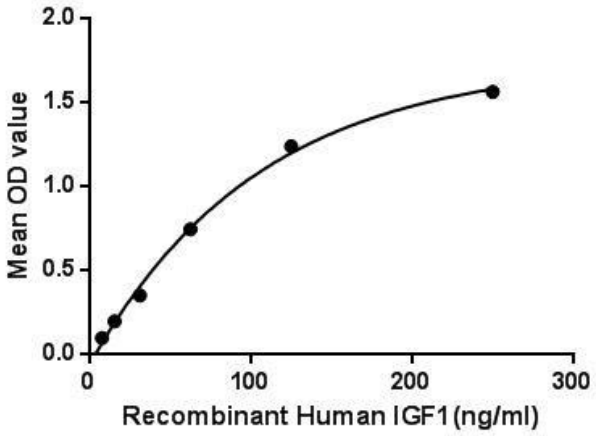


Figure. The binding activity of IGF1 with IGFBP4. Insulin-like growth factor 1 (IGF1), also called somatomedin C is a hormone similar in molecular structure to insulin. It plays an important role in childhood growth and continues to have anabolic effects in adults. A synthetic analog of IGF1, mecasermin, is used for the treatment of growth failure. IGF1 consists of 70 amino acids in a single chain with three intramolecular disulfide bridges. IGF1 has a molecular weight of 7,649 Daltons. Besides, Insulin Like Growth Factor Binding Protein 4 (IGFBP4) has been identified as an interactor of IGF1, thus a binding ELISA assay was conducted to detect the interaction of recombinant human IGF1 and recombinant human IGFBP4. Briefly, IGF1 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100µL were then transferred to IGFBP4-coated microtiter wells and incubated for 2h at 37℃. Wells were washed with PBST and incubated for 1h with anti-VDR pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody, wells were aspirated and washed 3 times. With the addition of substrate

solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50μL stop solution to the wells and read at 450nm immediately. The binding activity of IGF1 and IGFBP4 was shown in Figure 1, and this effect was in a dose dependent manner. To measure the effect of IGF1 on cell proliferation, breast cancer MCF-7 cells were seeded into triplicate wells of 96-well plates at a density of 5,000 cells/well and allowed to attach, replaced with serum-free overnight, then the medium was replaced with 1% serum standard DMEM prior to the addition of various concentrations of recombinant human IGF1. After incubated for 96h, cells were observed by inverted microscope and cell proliferation was measured by Cell Counting Kit-8 (CCK-8). Briefly, 10μL of CCK-8 solution was added to each well of the plate, then the absorbance at 450nm was measured using a microplate reader after incubating the plate for 1-4 hours at 37℃. Proliferation of MCF-7 cells after incubation with IGF1 for 72h observed by inverted microscope was shown in Figure 2. Cell viability was assessed by CCK-8 assay after incubation with recombinant IGF1 for 72h. The result was shown in Figure 3. It was obvious that IGF1 significantly increased cell viability of MCF-7 cells. (A) MCF-7 cells cultured in DMEM, stimulated with 10ng/mL IGF1 for 72h; (B) Unstimulated MCF7 cells cultured in DMEM for 72h. Figure. Cell proliferation of MCF-7 cells after stimulated with IGF1. Figure. Cell proliferation of MCF-7 cells after stimulated with IGF1.



注意事项（Note）

For Research Use Only , Not for Diagnostic Use.