

Human IGF1 protein, His tag (active)

Cat. No. GTX00250-pro

Application	Functional Assay
Species	Human

Package
10 µg

APPLICATION

Application Note

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 100 µl were then transferred to IGFBP4-coated microtiter wells and incubated for 2h at 37°C. 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°C. Finally, add 50 µl stop solution to the wells and read at 450nm immediately. The binding activity of IGF1 and IGFBP4 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 5000 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, 10 µl 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°C. Proliferation of MCF-7 cells after incubation with IGF1 for 72h observed by inverted microscop. Cell viability was assessed by CCK-8 assay after incubation with recombinant IGF1 for 72h, and IGF1 significantly increased cell viability of MCF-7 cells.

Observed MW 40 kDa.

PROPERTIES

Form	Lyophilized powder
Buffer	Reconstitute with 20mM Tris and 150mM NaCl to 0.1-1.0mg/ml. Do not vortex. Lyophilized from 20mM Tris, 150mM NaCl, 1mM EDTA, 1mM DTT, 0.01% SKL, 5% Trehalose.
Preservative	ProClin 300
Storage	For short-term storage (1-2 weeks), store at 4°C. For long-term storage, store at -20°C or below. After reconstitution, keep as concentrated solution. Avoid freeze-thaw cycles.
Region/Sequence	N-terminal His-Tag; Gly49~Ala118 (NP_000609.1)
Expression System	E. coli
Purity	> 95%
Endotoxin	< 1 EU/µg
Conjugation	Unconjugated

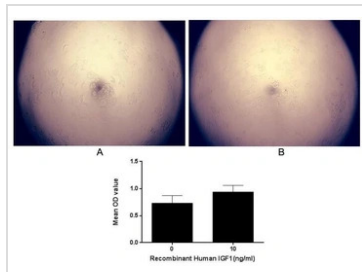


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Note

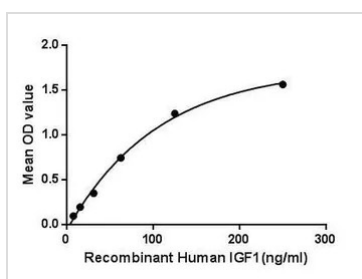
For laboratory use only. Not for any clinical, therapeutic, or diagnostic use in humans or animals. Not for animal or human consumption.

DATA IMAGES

GTX00250-pro Functional Assay Image

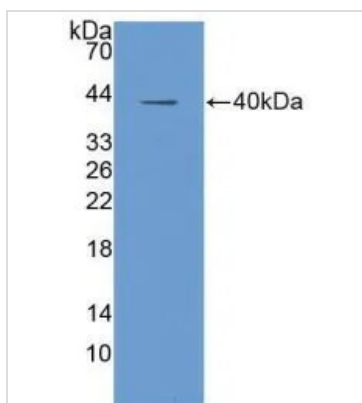
Cell proliferation effect of GTX00250-pro Human IGF1 protein (active). Cell viability was measured by Cell Counting Kit-8 (CCK-8).

(A) Unstimulated MCF-7 cells cultured in DMEM for 72hrs.

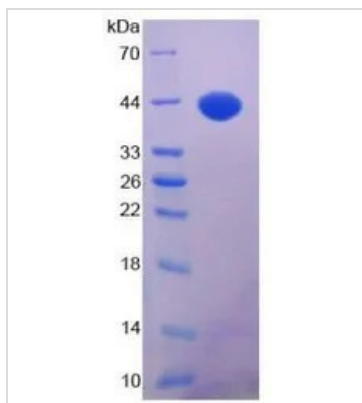
(B) MCF-7 cells cultured in DMEM, stimulated with 10 ng/ml IGF1 for 72hrs.


GTX00250-pro Functional Assay Image

Functional ELISA analysis of GTX00250-pro Human IGF1 protein (active) which can bind immobilized IGFBP4 protein.


GTX00250-pro Image

WB analysis of GTX00250-pro Human IGF1 protein (active).


GTX00250-pro Image

SDS-PAGE analysis of GTX00250-pro Human IGF1 protein (active).



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