

Insulin-like Growth Factor-1 (IGF-1)

recombinant, Human
expressed in E.Coli

Catalog Number

GR 005-010 (10ug)

GR 005-050 (50ug)

GR 005-200 (200ug)



Storage Temperature -5 ~ -20°C

Precautions

For *In Vitro* Use Only

Product Description

Insulin-like Growth Factor-1 (IGF-1) is a hormone consisting of 70 amino acids showing a similar molecular structure to insulin and plays a crucial role in growth and development. It is mainly produced by the liver, but also by other tissues, including muscles, bones, and cartilage.

The primary function of IGF-1 is to promote cell growth and division, particularly in bone, muscle, and cartilage tissues. IGF-1 plays roles by binding to the IGF-1 receptor (IGF-1R) on the surface of cells, which triggers a cascade of signaling events that activate various intracellular pathways, such as the PI3K/AKT and MAPK/ERK pathways. These pathways regulate cellular processes such as protein synthesis, cell proliferation, and differentiation.

IGF-1 is regulated by growth hormone (GH), which is produced by the pituitary gland. GH stimulates the liver to produce IGF-1, which is released into the bloodstream and circulates to target tissues.

Product Information

Alternative Names :

Insulin like growth factor 1, IGF1, IGF-I, IGF1A, IGFI, MGF, IGF

Species : Human

Source : E. Coli

Predicted Molecular Mass : 7.7 kDa

Amino Acid Sequence :

GPETLCGAELVDALQFVCGDRGFYFNKPTGYGS
SSRRAPQTGIVDECCFRSCDLRRLEMY
CAPLKPAKSA

Formulation :

Lyophilized from a sterile-filtered aqueous solution containing 20mM Sodium Phosphate, pH 7.0.

Product Specifications

Biological activity :

The $EC_{50} \leq 2.0$ ng/mL as determined by a cell proliferation assay using BALB/ 3T3 cells.

Purity :

$\geq 95\%$ purity by SDS-PAGE

Endotoxin :

≤ 0.5 EU/mg protein by LAL(Limulus ameobocyte lysate) analysis method.

Preparation and Storage

Storage :

Store at -5 °C to -20 °C.

Stability :

Stable as supplied for 12 months from date of receipt.

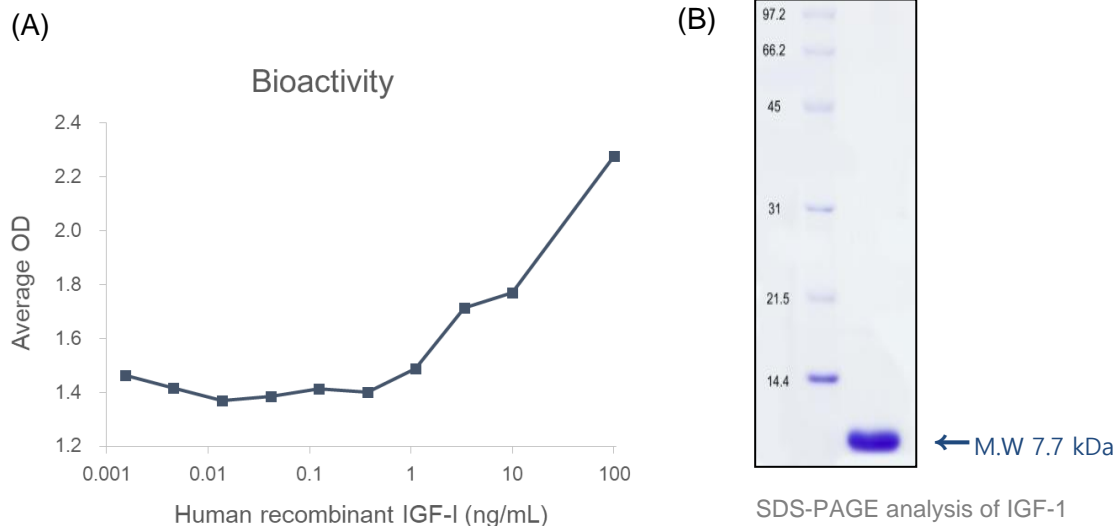
Preparation :

Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex

DATA

(A) The biological activity of Human Recombinant IGF-1 was tested by its ability to promote the proliferation of BALB/c 3T3 cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the under example is 1.85 ng/mL.

(B) Human Recombinant IGF-1 was resolved with SDS-PAGE under and visualized by Coomassie Blue staining. Human Recombinant IGF-1 has a predicted molecular mass of 7.7 kDa.



References

- Rinderknecht E, Humbel RE. *J Biol Chem.* 1978 Apr 25;253(8):2769-76.
- Peruzzi F, Prisco M, Dews M, Salomoni P, Grassilli E, Romano G, Calabretta B, Baserga R. *Mol Cell Biol.* 1999 Oct;19(10):7203-15. doi: 10.1128/MCB.19.10.7203.
- Scarth JP. *Xenobiotica.* 2006 Feb-Mar;36(2-3):119-218. doi: 10.1080/00498250600621627.