
**RECOMBINANT HUMAN
IGF-1 ACF**



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RECOMBINANT HUMAN IGF-1 ACF

Catalog No. 95119

INTENDED USE

Recombinant Human IGF-1 is a carrier-free, animal component-free bioactive recombinant cytokine intended for use in cell culture applications. IGF-1 is a broad-spectrum growth factor that has been shown to play an important role in the regulation of cell proliferation, differentiation, and apoptosis, and may be involved in the development of cancer (1).

PRODUCT DESCRIPTION

1. Synonyms

Somatomedin C, mechano growth factor, IGF-1A

2. Accession Number

P05019

3. Background

Insulin-like growth factor 1 (IGF-1) is produced primarily by the liver as an endocrine hormone and in target tissues in a paracrine/autocrine fashion. IGF-1 activates the IGF-1 receptor (IGF1R) and the insulin receptor to stimulate systemic body growth and growth-promoting effects on almost every cell in the body, especially skeletal muscle, cartilage, bone, liver, kidney, nerve, skin, hematopoietic, and lung cells. IGF-1 is a potent activator of the AKT signaling pathway, which is known to be a stimulator of proliferation and an inhibitor of programmed cell death. The IGF-1 gene is located on chromosome 12. Mature human IGF-1I is 100% homologous with bovine and porcine proteins. Recombinant Human IGF-1 is a non-glycosylated protein, containing 70 amino acids, with a molecular weight of 7.7 kDa (2-4).

4. Specifications

Formulation

Recombinant Human IGF-1 is lyophilized with no additives.

Protein content and Purity

≥96% determined by reducing and non-reducing SDS-PAGE analysis.

Bioactivity

ED50 is determined by the dose-dependent proliferation of FDC-P1 cells. The ED50 is typically less than 5ng/mL.

Quality and Grade

Carrier-free. Animal component-free.

SHIPPING

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

STORAGE INSTRUCTIONS AND STABILITY

Upon receipt, store the lyophilized protein at or below -10°C in a manual defrost freezer for up to 12 months from date of receipt. Unopened vials are stable for one year from the date of receipt when stored as recommended. Reconstituted material should be apportioned in working volumes and stored at or below -10°C in manual defrost freezer. Reconstituted material is stable for 4-6 weeks when stored at or below -10°C and for 3-12 months at -80°C. Stability can be increased by adding at least 0.1% of carrier protein.

PRECAUTIONS AND WARNINGS

This product is for research or further manufacturing use only. It is not for use in diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

DIRECTIONS FOR USE

1. Reconstitution

Centrifuge vials before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile water at a concentration of 0.1 mg/mL, which can be further diluted into other aqueous solutions.

2. Optimum concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

REFERENCES

1. Sara VR, Hall K (1990) Insulin-like growth factors and their binding proteins. *Physiol. Rev.* 70: 591-614
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3. Savage MO (2013) Phenotypes, Investigation and Treatment of Primary IGF-1 Deficiency. *Endocr. Dev.* 24: 138-149
4. Esposito DL, Blakesley VA, Koval AP, Scrimgeour AG, LeRoith D (1997) Tyrosine residues in the C-terminal domain of the insulin-like growth factor-1 receptor mediate mitogenic and tumorigenic signals. *Endocrinology* 138: 2979-2988