

# Long Arg<sup>3</sup> Insulin-like Growth Factor-I

Human, Recombinant (rHuLong-R<sup>3</sup>-IGF-I)

Expressed in *E. coli*

Cat. No. CRP0805

Lot. No. (See product label)

## PRODUCT INFORMATION

**Description:** Human Long Arg<sup>3</sup> Insulin-like Growth Factor-I (Long-R<sup>3</sup>-IGF-I) is an 83 amino acid analog of human IGF-I comprising the complete human IGF-I sequence with the substitution of an Arg for the Glu at position 3 (hence R<sup>3</sup>), and a 13 amino acid extension peptide at the N-terminus. Scientists have engineered this analog with the express purpose of increasing biological activity. Human Long-R<sup>3</sup>-IGF-I is significantly more potent than human IGF-I in vitro. The enhanced potency is due to the markedly decreased binding of human Long-R<sup>3</sup>-IGF-I to IGF binding proteins which normally inhibit the biological actions of IGFs.

**Amino-Acid Sequence:** 83 aa (The sequence of the first five N-terminal amino acids was determined and was found to be Met-Phe-Pro-Ala-Met.), non-glycosylated

**M. W. :** 9,111 Da

**Recombinant:** Expressed in *E. coli*

**Purity:** >95% as determined by SDS-PAGE and RP-HPLC.

**Formulation:** Lyophilized after extensive dialysis against acetic acid buffer.

**Specific Activity:** The ED50, calculated by the dose-dependant proliferation of murine BALB/C 3T3 cells is less than 1.0 ng/ml, corresponding to a specific activity of 1.0 x 10<sup>6</sup> IU/mg. For most in-vitro applications, Long-R<sup>3</sup>-IGF-I exerts its biological activity in the concentration range of 0.2-20 ng/ml.

**Endotoxin:** Less than 0.1ng/μg (1IEU/μg) of Long-R<sup>3</sup>-IGF-I.

**Reconstitution:** It is recommended to reconstitute the lyophilized Long-R<sup>3</sup>-IGF-I in 500mM acetic acid not less than 100μg/ml, which can then be further diluted to other aqueous solutions.

**Storage:** Lyophilized Long-R<sup>3</sup>-IGF-I although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Long-R<sup>3</sup>-IGF-I should be stored at 4°C between 2-7 days and for future use below -18°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Aliquot to avoid repeated freeze-thaw cycles.

## FOR RESEARCH USE ONLY



[PDB](#) rendering based on 1bqt.

## GENE INFORMATION

**Gene Name:** [IGF1](#)

**Gene Alias:** IBP1, IGF-IA, IGF-IB, IGFI, MGF, Somatomedin-C

**Gene Type:** protein coding

**mRNA Refseq:** [NM\\_000618.3](#)

**Protein Refseq:** [NP\\_000609.1](#)

**MIM:** [147440](#)

**GeneID:** [3479](#)

**Chromosome Location:** 12q22-q23

**Pathway:** Focal adhesion, Glioma, Long-term depression, Melanoma, Prostate cancer, mTOR signaling pathway

**Function:** growth factor activity, hormone activity, insulin-like growth factor receptor binding, prothoracicotrophic hormone activity

## REFERENCES

1. Velcheti V, Govindan R (2006). Insulin-like growth factor and lung cancer. Journal of thoracic oncology : official publication of the International Association for the Study of Lung Cancer 1 (7): 607-10.
2. Scarth J (2006). Modulation of the growth hormone-insulin-like growth factor (GH-IGF) axis by pharmaceutical, nutraceutical and environmental xenobiotics: an emerging role for xenobiotic-metabolizing enzymes and the transcription factors regulating their expression. A review". Xenobiotica 36 (2-3): 119-218.
3. Salmon W, Daughaday W (1957). A hormonally controlled serum factor which stimulates sulfate incorporation by cartilage in vitro. J Lab Clin Med 49 (6): 825-36.

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