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## Recombinant Human Long Arg<sup>3</sup> Insulin-like Growth Factor-I (Long-R<sup>3</sup>-IGF-I)

(Media Grade)

(Cat. No.: C023)

### Background:

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.

### Description:

Recombinant Human Long-R<sup>3</sup>-IGF-I produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 83 amino acids and having a molecular mass of 9111 Dalton.

### Quality Control:

**Biological activity:** The ED<sub>50</sub>, 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.

**Purity:** Greater than 85% as determined by

(a) Analysis by RP-HPLC.

(b) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel..

**Amino-Acid Sequence:** The sequence of the first five N-terminal amino acids was determined and was found to be Met-Phe-Pro-Ala-Met.

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

**Formulation:** Long-R<sup>3</sup>-IGF-I was lyophilized after extensive dialysis against acetic acid buffer.

**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).

**Please avoid freeze-thaw cycles.**

**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.

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