

Recombinant Murine Insulin-Like Growth Factor 1 (rm IGF-1)

Synonyms: Somatomedin C, IGFA

Introduction: The somatomedins, or insulin-like growth factors (IGFs), comprise a family of peptides that play important roles in mammalian growth and development. IGF-1 mediates many of the growth-promoting effects of growth hormone (GH; MIM 139250). Early studies showed that growth hormone did not directly stimulate the incorporation of sulfate into cartilage, but rather acted through a serum factor, termed 'sulfation factor', which later became known as 'somatomedin' (Daughaday et al., 1972). Three main somatomedins have been characterized: somatomedin C (IGF1), somatomedin A (IGF2; MIM 147470) and somatomedin B (MIM 193190) (Rotwein, 1986; Rosenfeld, 2003).

Description: Recombinant murine IGF-1 produced in *E.Coli* is a single, non-glycosylated, polypeptide chain containing 70 amino acids and having a molecular mass of 7600 Dalton. rm IGF-I is purified by proprietary chromatographic techniques.

Source: *Escherichia Coli*.

Physical Appearance: Sterile filtered white lyophilized (freeze-dried) powder.

Formulation: Lyophilized with no additives.

The sample size of 1µg contains Trehalose 5% (w/vol) for better recovery

Solubility: It is recommended to reconstitute the lyophilized rm IGF-1 in sterile H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Stability: Lyophilized rm IGF-1, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rm IGF-1 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.

Purity: Greater than 98.0% as determined by RP-HPLC and by SDS-PAGE.

Amino Acid Sequence: The sequence of the first five N-terminal amino acids was determined and was found to be Gly-Pro-Glu-Thr-Leu.

Biological Activity: The ED₅₀, calculated by the dose-dependant proliferation of murine BALB/C 3T3 cells (measured by 3H-thymidine uptake) is less than 1.0 ng/ml, corresponding to a specific activity of 1x10⁶ U/mg.

Protein content: Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 0.47 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).
2. Analysis by RP-HPLC, using a standard solution of rm IGF-I as a Reference Standard.

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<i>small</i>	10 µg	Cat.N°	12343313
<i>medium</i>	50 µg	Cat.N°	12343315
<i>large</i>	250 µg	Cat.N°	12343317

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