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Certificate of Analysis and Data Sheet

Recombinant Human Insulin-Like Growth Factor 1

Catalog No.
228-10831

Source
Escherichia Coli.

Synonyms

Somatomedin C, IGF-I, IGFI, IGF1, IGF-IA, Mechano growth factor, MGF.

Introduction

The somatomedins, or insulin-like growth factors (IGFs), comprise a family of peptides that play important roles in mammalian growth and development. IGF1 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

Insulin-Like Growth Factor-I Human Recombinant produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 70 amino acids and having a molecular mass of 7655 Dalton. IGF-I is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

The protein was lyophilized with no additives.

Solubility

It is recommended to reconstitute the lyophilized IGF-1 in sterile 18MΩ-cm H₂O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

**The products are furnished for LABORATORY RESEARCH USE ONLY.
Not for diagnostic or therapeutic use.**



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Stability

Lyophilized Insulin-Like Growth Factor-1 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution IGF1 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 prevent freeze-thaw cycles.

Purity

Greater than 95.0% as determined by:

- (a) Analysis by RP-HPLC.
- (b) Analysis 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. N-terminal methionine has been completely removed enzymatically.

Biological Activity

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

For most in-vitro applications, IGF-I exerts its biological activity in the concentration range of 0.2-20 ng/ml.

Protein content

Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 0.502 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 calibrated solution of IGF1 as a Reference Standard.

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