



Insulin-Like Growth Factor-I, human recombinant (rHuIGF-1)

Catalog No: 50356
Lot No: XXXXX
Source: *E. coli*
Synonyms: Somatomedin C, IGF-I, IGFI, IGF1, IGF-IA, Mechano growth factor, MGF

Background

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 7.6 kDa. IGF-I is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

Formulation

The protein was lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.0.

Solubility

It is recommended to reconstitute the lyophilized IGF-1 in sterile 18 MΩ-cm H₂O at a concentration of 100 µg/ml, which can then be further diluted to other aqueous solutions.

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 98.0% as determined by (a) Analysis by RP-HPLC, (b) Analysis by SDS-PAGE.

Amino Acid Sequence

GPETLCGAEL VDALQFVCGD RGFYFNKPTG YGSSRRAPQ TGIVDECCFR SCDLRRLEMY CAPLKPAKSA

Activity

Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using murine BALB/C 3T3 cells is less than 1.0 ng/ml, corresponding to a specific activity of 1x10⁶ units/mg.

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