

Recombinant Gilthead Seabream Insulin-Like Growth Factor 1

Cat. No. IGF1-84G **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Gilthead Seabream Insulin-Like Growth Factor-I produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 68 amino acids and having a molecular mass of 7545.4 Dalton, the predicted pI=7.72. IGF-1 is purified by proprietary chromatographic techniques.
Species	Gilthead Seabream
Source	E.coli
Description	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).
Amino acid sequence	The sequence of the first ten N-terminal amino acids was determined and was found to be Met-Ser-Pro-Glu-Thr-Leu-Cys-Gly-Ala-Glu.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Purity	Greater than 98.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by

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	SDS-PAGE.
Formulation	The protein was lyophilized from a concentrated (1 mg/ml) solution with 0.02% NaHCO ₃ .
Solubility	It is recommended to reconstitute the lyophilized IGF-1 in sterile 0.4% NaHCO ₃ adjusted, not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.
Specific Activity	Binding assays of the ¹²⁵I-Gealthed Seabream IGF1 to Gilthead Seabream or carp (<i>Cyprinus carpio</i>) sera resulted in high specific binding, indicating the existence of one or more IGF-binding proteins. In binding experiments to crude Gilthead Seabream brain homogenate, using human (h) IGF-I as a ligand, the respective IC₅₀ value of hIGF1 was about fourfold lower than that of Gilthead Seabream IGF-1. Recombinant Gilthead Seabream IGF-1 exhibited mitogenic activity in a mouse mammary gland-derived MME-L1 cell line which was approximately 200-fold lower than that of hIGF1. Binding experiments to intact MME-L1 cells suggests that this difference most likely results from a correspondingly lower affinity for IGF1 receptor in these cells. In contrast, the activities of Gilthead Seabream IGF-I and hIGF-I measured by ³⁵S uptake by gill arches from the goldfish (<i>Carassius auratus</i>) were identical, indicating that the recombinant Gilthead Seabream IGF-I is biologically active.
Protein content	Somatomedin C quantitation was carried out by two independent methods: 1. UV spectroscopy at 280 nm using the absorbency value of 0.60 as the extinction coefficient for a 0.1% (1 mg/ml) solution at pH 8.0. 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.
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.

GENE INFORMATION

Synonyms

IGF1; IGF-I; IGF1; IBP1; IGF-1A; IGF1A; IGF-1B; MGF; Somatomedin C; Somatomedin-C; Mechano growth factor; insulin-like growth factor 1; insulin-like growth factor 1 (somatomedin C)

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