



## Insulin Like Growth Factor-I, denis recombinant (rdIGF-I)

**Catalog No:** 94923  
**Lot No:** XXXXX  
**Source:** *E. coli*  
**Synonyms:** Somatomedin C, IGF-I, IGF1

### 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 Gilthead Seabream recombinant 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.

### Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

### Formulation

The protein was lyophilized from a concentrated (1 mg/ml) solution with 0.02% NaHCO<sub>3</sub>.

### Solubility

It is recommended to reconstitute the lyophilized IGF-1 in sterile 0.4% NaHCO<sub>3</sub> adjusted, not less than 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 SEC-HPLC, (b) Analysis by SDS-PAGE.

### 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.

**CONTACT US TODAY**

BIOMOL GmbH • Kieler Straße 303a • 22525 Hamburg • Germany • info@biomol.de • www.biomol.de

Fon: +49 (0)40-853 260 0 • TOLL FREE IN GERMANY: Fon: 0800-246 66 51



### Activity

Binding assays of the <sup>125</sup>I-Gealthed Seabream IGF1 to Gilthead Seabream or carp (*Cyprinus carpio*) 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 IC<sub>50</sub> 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 <sup>35</sup>S uptake by gill arches from the goldfish (*Carassius auratus*) were identical, indicating that the recombinant Gilthead Seabream IGF-I is biologically active.

### Usage

**This product is offered by Biomol for research purposes only. Not for diagnostic purposes or human use. It may not be resold or used to manufacture commercial products without written approval of Biomol GmbH.**

**CONTACT US TODAY**

BIOMOL GmbH • Kieler Straße 303a • 22525 Hamburg • Germany • [info@biomol.de](mailto:info@biomol.de) • [www.biomol.de](http://www.biomol.de)

Fon: +49 (0)40-853 260 0 • TOLL FREE IN GERMANY: Fon: 0800-246 66 51