

General Information

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| Synonyms | C11orf43; chromosome 11 open reading frame 43; FLJ22066; GRDF; IGF2; IGF-2; IGFII; IGF-II |
| Accession # | P01344.1 |
| Source | Human embryonic kidney cell, HEK293-derived human IGF-II/IGF2 protein |
| | Ala25-Glu91 |
| Predicted Molecular weight | 7.5 kDa |

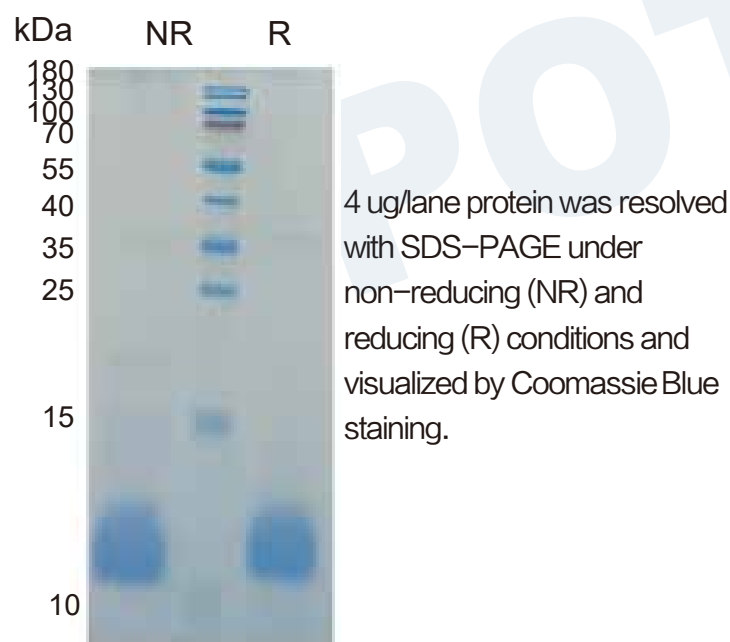
Components and Storage

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|-----------------------|--|
| Formulation | Solution protein. Dissolved in sterile PBS buffer. This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening. |
| Storage and Stability | Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied. |
| Shipping | Shipping with dry ice. |

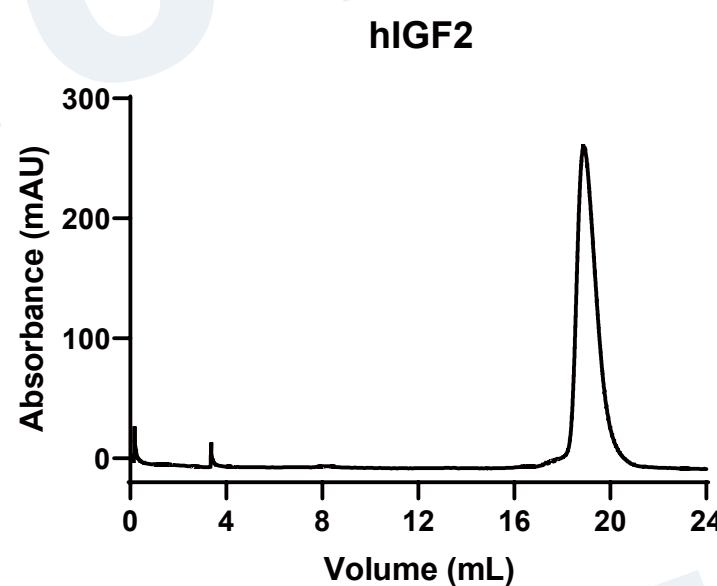
Quality

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|-----------------|--|
| Purity | > 95%, determined by SDS-PAGE. |
| Endotoxin Level | <0.010 EU per 1 ug of the protein by the LAL method. |
| Activity | Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. The EC50 for this effect is 0.6-2 ng/mL. |

SDS-PAGE

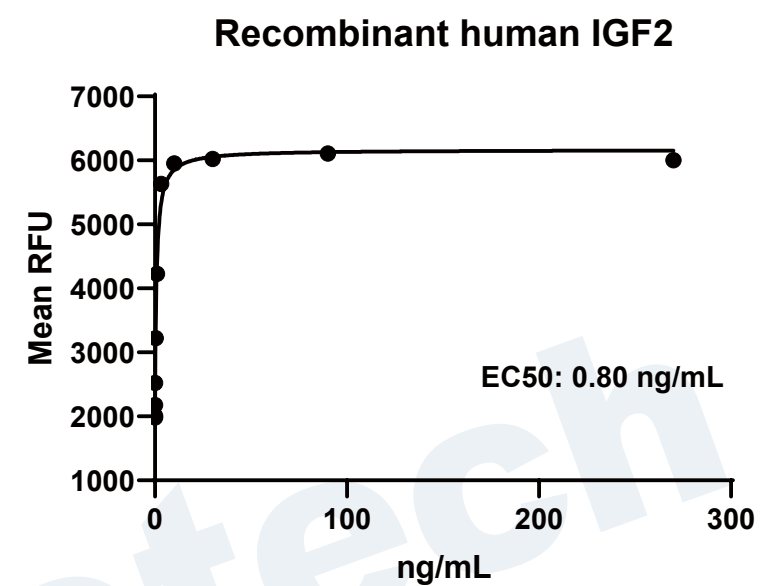


Gel filtration



Size-exclusion chromatography of recombinant human IGF-II/IGF2 protein (280 nm absorbance)

Bioactivity



Recombinant human IGF-2 (Catalog # HF-2012) stimulates cell proliferation of the MCF-7 human breast cancer cells.

Background

Insulin-like Growth Factor II (IGF-II) is a potent mitogenic growth factor. However, unlike IGF-I which has important postnatal roles, the growth-promoting function of IGF-II is limited to embryonic development.

Insulin-like growth factor I (also known as somatomedin C and somatomedin A) and insulin-like growth factor II (multiplication stimulating activity or MSA) belong to the family of insulin-like growth factors that are structurally homologous to proinsulin. Mature IGF-I and IGF-II share approximately 70% sequence identity. Both IGF-I and IGF-II are expressed in many tissues and cell types and may have autocrine, paracrine and endocrine functions. Mature IGF-I and IGF-II are highly conserved (100% identity between human, bovine and porcine proteins) and exhibit cross-species activity.

Two specific cell surface receptors that bind IGF-I and IGF-II have been identified. The type I IGF receptor that participates in IGF signaling is structurally related to the insulin receptor. It is a disulfide-linked heterotetrameric transmembrane glycoprotein with an intracellular tyrosine kinase domain. Type I IGF receptor binds IGF-I with higher affinity than IGF-II. The type II IGF receptor which binds IGF-II with much higher affinity than IGF-I is also the cation-independent mannose 6-phosphate receptor. At the present time, it is not known if the type II IGF receptor participates in the IGF signaling pathway. An additional unknown receptor which mediates IGF-II signaling has also been proposed. Circulating IGFs exist in complexes bound to IGF binding proteins. Currently, at least six high affinity binding proteins have been identified.

Reference

1. Harvey MB, et al. (1991) Development. 111(4): 1057-60.
2. Peters G, et al. (2003) Virchows Arch. 443(2): 139-45.
3. Burrow S, et al. (1998) J Surg Oncol. 69(1): 21-7.

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