

# DATA SHEET

Version: 01  
Revision date: 23/05/2025

## 1. Identification

<b>Product name</b>	<b>Recombinant Human IGF-1 (70 aa)</b> 100 µg
<b>Cat. No</b>	CR011

## 2. Description

Canvax Recombinant Human IGF-1 (70 aa) is a high-purity, carrier-free growth factor produced in *E. coli* and designed to support robust cell proliferation and survival in defined culture systems. Corresponding to the biologically active 70-aa human IGF-1 domain, this protein is widely used for the maintenance of pluripotent stem cells (iPSC/ESC), mesenchymal stem cells (MSC), and as an insulin replacement in chemically defined media.

Its animal-origin-free formulation and stringent endotoxin control ensure consistent biological performance in sensitive culture workflows. Delivered as a stable lyophilized powder, IGF-1 enables easy handling, efficient reconstitution and reliable lot-to-lot reproducibility for demanding research applications

A GMP-grade version suitable for therapeutic and regulated manufacturing environments is available upon request

## 3. Product information

<b>Expression system</b>	<i>E. coli</i> recombinant production.
<b>Sequence</b>	Human IGF-1 (70 aa), UniProt P05019.
<b>Molecular Weight</b>	~7.6–8 kDa (monomer).
<b>Structure</b>	Single-chain growth factor containing intramolecular disulfide bonds.
<b>Purity</b>	≥ 98% (SDS-PAGE).
<b>Identity</b>	Confirmed by mass spectrometry.
<b>Endotoxin</b>	<0.05 EU/µg protein.
<b>Bioactivity</b>	Validated using an SRE-luciferase reporter assay in MCF-7 cells..
<b>Form</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from acetonitrile and TFA
<b>Reconstitution</b>	Dissolve in sterile water (>50 µg/mL)
<b>Recovery</b>	>95% after reconstitution.
<b>Lot-to-lot consistency</b>	Ensured through controlled manufacturing and analytical release testing.

## 4. Storage specifications

Store the lyophilized protein at -20 °C for general use. Avoid repeated freeze-thaw cycles. Once reconstituted, aliquot and store at -80 °C.



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### 5. Applications

- Maintenance of pluripotency in human iPSC and ESC cultures.
- Replacement of insulin in chemically defined and serum-free media
- Proliferation and survival of MSCs and primary cell types
- Optimization of xeno-free and chemically defined culture media
- Supplementation in epithelial and mesenchymal differentiation workflows

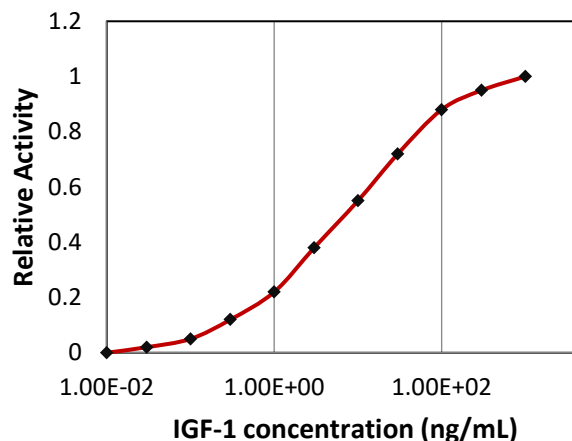
A GMP-grade variant is also available for cell-therapy, regenerative-medicine and advanced therapeutic manufacturing workflows.

### 6. Bioactivity assay

IGF-1 activity was determined using an SRE-luciferase reporter assay in transfected MCF-7 cells. Cells were treated in triplicate with a serial dilution of IGF-1 for 4 hours. Firefly luciferase activity was measured and normalized to control Renilla luciferase activity.

EC<sub>50</sub> ≈ 3.5 ng/mL

#### IGF-1 Bioactivity



### 7. Further information

**RUO** This product is sold as RUO (Research Use Only), not for diagnostic or therapeutic use in humans or animals. GMP-grade production can be provided on request. Full regulatory documentation is available for GMP-manufactured batches. Contact us ([info@canvaxbiotech.com](mailto:info@canvaxbiotech.com)).

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