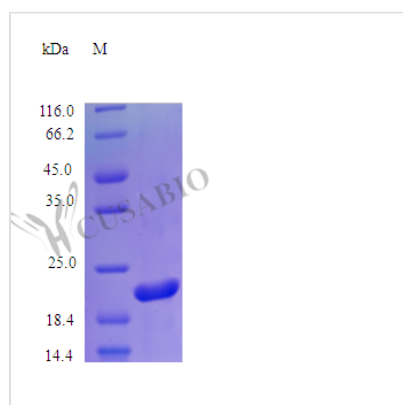




# Recombinant Human Somatotropin protein (GH1) (Active)

<b>Product Code</b>	CSB-AP000011HU
<b>Abbreviation</b>	Recombinant Human GH1 protein (Active)
<b>Uniprot No.</b>	P01241
<b>Storage Buffer</b>	0.2 μm filtered 20mM PB, pH 7.0, with 3% Mannitol, lyophilized
<b>Product Type</b>	Hormones
<b>Immunogen Species</b>	Homo sapiens (Human)
<b>Biological Activity</b>	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using rat Nb2-11 lymphoma cells is less than 0.1 ng/ml, corresponding to a specific activity of $>1.0 \times 10^7$ IU/mg.
<b>Purity</b>	>98% as determined by SDS-PAGE.
<b>Sequence</b>	FPTIPLSRLF DNAMLRAHRL HQLAFDTYQE FEEAYIPKEQ KYSFLQNPQT SLCFSESIPT PSNREETQQK SNLELLRISL LLIQSWLEPV QFLRSVFANS LVYGASDSNV YDLLKDLEEG IQTLMGRLED GSPRTGQIFK QTYSKFDNTS HNDDALLKNY GLLYCFRKDM DKVETFLRIV QCRSVEGSCG F
<b>Research Area</b>	Signal Transduction
<b>Source</b>	E.Coli
<b>Target Names</b>	GH1
<b>Expression Region</b>	27-217aa
<b>Tag Info</b>	Tag-Free
<b>Mol. Weight</b>	22.0 kDa
<b>Protein Length</b>	Full Length of Mature Protein
<b>PubMed ID</b>	386281; 377496; 6269091; 7169009; 2744760; 18473352; 16625196; 10931946; 15489334; 3912261; 5810834; 5144027; 4675454; 5279046; 5279528; 7462247; 7356479; 7028740; 8364549; 14997482; 10393484; 16807684; 3447173; 1549776; 7984244; 8943276; 8552145; 9152628

## Image





## Description

Recombinant Human Somatotropin protein (GH1) gets produced in *E. coli* and represents the full length of the mature protein from amino acids 27 to 217. This tag-free product appears to be highly pure, achieving greater than 98% purity as determined by SDS-PAGE. The protein exhibits full biological activity, with an ED50 of less than 0.1 ng/ml in a cell proliferation assay using rat Nb2-11 lymphoma cells, and shows specific activity greater than  $1.0 \times 10^7$  IU/mg. Endotoxin levels stay below 1.0 EU/ $\mu$ g as confirmed by the LAL method.

Somatotropin, also known as growth hormone (GH), plays a crucial role in regulating growth and metabolism. Various physiological processes get influenced by this protein through promoting cell growth, reproduction, and regeneration. Research areas focusing on growth disorders, metabolic functions, and cellular development find this protein particularly valuable. Understanding growth-related pathways may depend significantly on this tool for scientific studies.

## Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

### 1. Cell Proliferation and Growth Assays

This recombinant human somatotropin works well as a positive control or test reagent in cell proliferation studies, particularly with growth hormone-responsive cell lines. The validated biological activity using rat Nb2-11 lymphoma cells with an ED50 of less than 0.1 ng/ml provides what appears to be a reliable reference point for dose-response experiments. Scientists can use this protein to investigate growth hormone signaling pathways and cellular responses in various in vitro models. High purity (>98%) and low endotoxin levels make it suitable for sensitive cell culture applications.

### 2. Growth Hormone Receptor Binding Studies

The biologically active recombinant protein can serve as a ligand in receptor binding assays to characterize growth hormone receptor interactions and binding kinetics. Scientists may find this protein valuable in competitive binding experiments when evaluating the affinity of growth hormone analogs or potential inhibitors. The tag-free nature of the protein ensures that binding studies likely reflect native protein-receptor interactions without interference from purification tags. These studies might contribute to understanding structure-activity relationships and receptor pharmacology.

### 3. Antibody Development and Validation

This high-purity recombinant human somatotropin works as an immunogen or



coating antigen for developing monoclonal or polyclonal antibodies against human growth hormone. The protein can serve as a positive control in immunoassay development, including ELISA, Western blot, and immunoprecipitation protocols. Scientists can use it to validate antibody specificity and determine optimal working concentrations for various immunological techniques. Low endotoxin content appears to ensure minimal interference in antibody production protocols.

#### **4. Biochemical Characterization and Protein Interaction Studies**

The recombinant protein gets used in biochemical assays to study growth hormone's molecular properties, stability, and interactions with binding proteins or other molecular partners. Scientists can investigate protein folding, thermal stability, and conformational changes under various conditions. High specific activity ( $>1.0 \times 10^7$  IU/mg) suggests proper protein folding, making it suitable for structural-functional relationship studies. These applications might include surface plasmon resonance, analytical ultracentrifugation, and other biophysical characterization methods.

#### **5. Preclinical Research Models**

This biologically active recombinant human somatotropin finds use in preclinical research studies involving animal models to investigate growth hormone effects on metabolism, development, and physiological processes. The validated activity profile provides researchers with what appears to be a reliable tool for dose-escalation studies and pharmacokinetic investigations. The protein can serve as a reference standard for comparing the biological activity of modified growth hormone variants or biosimilar candidates in research settings. Low endotoxin levels likely ensure minimal confounding effects in animal studies.

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**Endotoxin**

Less than 1.0 EU/ $\mu$ g as determined by LAL method.

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**Shelf Life**

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.