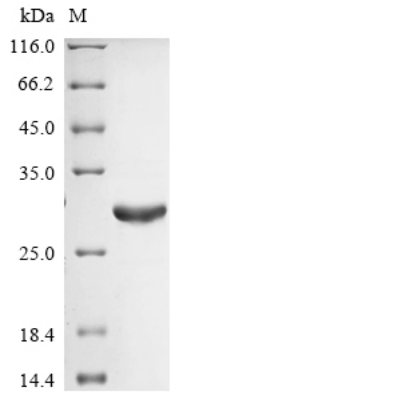
Recombinant Human Somatotropin (GH1)

Product Code	CSB-EP009407HUb1
Abbreviation	Recombinant Human GH1 protein
Storage	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.
Uniprot No.	P01241
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCF SESIPTPSNREETQQKSNLELLRISLLLIQSWLEPVQFLRSVFANSLVYGASDSN VYDLLKDLEEGIQTLMGRLEDGSPRTGQIFKQTYSKFDTNSHNDDALLKNYGL LYCFRKDMDKVETFLRIVQCRSVEGSCGF
Research Area	Developmental Biology
Source	E.coli
Target Names	GH1
Expression Region	27-217aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	27.1 kDa
Protein Length	Full Length of Mature Protein

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Human Somatotropin (GH1) is produced in E. coli and spans the full length of the mature protein, covering amino acids 27-217. This product features both an N-terminal 10xHis-tag and a C-terminal Myc-tag to aid in purification and detection. Purity exceeds 90% as verified by SDS-PAGE, making this recombinant protein suitable for various research applications requiring high-quality somatotropin.

Somatotropin, commonly known as growth hormone, plays a crucial role in promoting growth and regulating metabolism. It appears to be involved in numerous biological processes, including stimulating cell growth, reproduction, and regeneration. As an essential component of the growth hormone/insulin-like growth factor axis, somatotropin is of significant interest in research focused on growth disorders, metabolic functions, and related signaling pathways.

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. Antibody Development and Validation Studies

This recombinant human growth hormone can serve as an immunogen or standard for developing and characterizing anti-GH1 antibodies. The dual tagging system with N-terminal His-tag and C-terminal Myc-tag provides multiple epitopes for antibody binding validation and specificity testing. Researchers may find this protein useful for screening hybridoma clones, validating antibody specificity through Western blotting, and establishing standard curves for immunoassay development. The high purity (>90%) likely ensures reliable and reproducible results in antibody characterization experiments.

2. Protein-Protein Interaction Studies

The His-tagged recombinant GH1 can be immobilized on nickel-affinity matrices for pull-down assays to identify and characterize growth hormone binding partners. The mature protein sequence (aa 27-217) represents the biologically relevant form that would interact with cellular receptors and binding proteins under physiological conditions. This protein may prove valuable in co-immunoprecipitation experiments, surface plasmon resonance studies, or yeast two-hybrid screens to map the GH1 interactome and understand its molecular mechanisms.

3. Structural and Biophysical Characterization

This recombinant protein provides a suitable substrate for structural biology studies including X-ray crystallography, NMR spectroscopy, and cryo-electron microscopy. The mature protein sequence without the signal peptide (aa 1-26)

represents the properly folded form found in circulation, making it ideal for determining high-resolution structures. Researchers can also apply this protein for biophysical analyses such as dynamic light scattering, circular dichroism spectroscopy, and thermal stability studies to understand GH1 folding, stability, and conformational changes.

4. ELISA Development and Quantitative Assays

The dual-tagged recombinant GH1 can serve as both capture antigen and detection standard in enzyme-linked immunosorbent assays. The His-tag enables direct immobilization on nickel-coated plates, while the Myc-tag provides an additional detection epitope for sandwich ELISA formats. This protein may help researchers establish standard curves, validate assay specificity, and develop quantitative methods for measuring GH1 levels in experimental samples from cell culture or tissue extracts.

5. Cell Culture and Receptor Binding Studies

This recombinant protein can function as an exogenous ligand in cell culture experiments to study growth hormone receptor signaling pathways and cellular responses. The mature protein sequence ensures proper receptor recognition and binding, while the tags allow for easy detection and tracking in experimental systems. Researchers may apply this protein in dose-response studies, receptor binding competition assays, and downstream signaling pathway analysis in various cell lines expressing growth hormone receptors.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
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.