



## Human Growth Hormone

### Human Growth Hormone, recombinant

Synonyms: GH1, GH, GHN, GH-N, hGH-N, Pituitary growth hormone, Growth hormone 1, Somatotropin.

*PLEASE NOTE: ALWAYS CENTRIFUGE VIAL BEFORE OPENING*

Size	Order#	Lot#	Expiry Date
100 µg	1445.950.100		
500 µg	1445.950.500		
1 mg	1445.950.199		

Please enquire for bulk quantities and other vial sizes.

### Description

Recombinant Human Growth Hormone produced in *E.Coli* is a 22.0 kDa, single, non-glycosylated polypeptide chain containing 191 amino acid residues. It is also known as somatotropin. Growth Hormone is a pleiotropic cytokine of the hematopoietic growth factor superfamily, which encompasses most cytokines, hematopoietic growth factors, and related receptors, and includes the related growth hormone receptor, prolactin, placental lactogens, proliferins, and somatolactin (SST). GH is primarily recognized for its anabolic role in stimulating the growth and differentiation of muscle, bone, and cartilage. A number of other functions, including immunomodulatory actions, are also attributed to GH, due in part to the pervasive distribution of its receptors, and the indirect effects associated with GH-stimulated production of insulin-like growth factors (IGFs). Occurring predominantly in the somatotropes of the anterior pituitary, whereupon it is stored in secretory granules, production of GH has also been noted in many other tissues, including those of the hematopoietic system. The production and pulsatile release of circulating GH is very tightly regulated by both negative and positive feedback regulations of pituitary and hypothalamic hormones, such as Pituitary-specific Positive Transcription Factor 1 (POU1F1), Growth Hormone Releasing Hormone (GHRH), and somatostatin (SRIF). Deficient production of GH is associated with dwarfism and reduction of lean body mass, while overproduction is associated with acromegaly and gigantism, as well as breast tumor growth.

- **Biological Activity**  $\geq 1 \times 10^7$  IU/mg
- **Source** *E. coli*
- **Purity**  $\geq 98$  % (SDS-PAGE, RP-HPLC)
- **Endotoxin Level**  $\leq 0.1$  ng/µg ( $\leq 1$  EU/µg)
- **Stabilizer** Mannitol (3 %)
- **Buffer** Phosphate Buffer (20mM)\*
- **Physical State** Sterile filtered, lyophilized

### Biological Activity

The ED<sub>50</sub> of  $\leq 0.1$  ng/ml was determined by its ability to induce proliferation in rat lymphoma NB2-11 cells. It corresponds to a specific activity of  $\geq 1 \times 10^7$  units/mg.

### Reconstitution

We recommend a quick spin followed by reconstitution in water to a concentration of at least 0.1 mg/ml. **Do not vortex.** This solution can be stored at 2-8°C for up to 1 week or in working aliquots at -20°C to -80°C. Working aliquots should be at the highest possible concentration.

### Stability

The lyophilized protein is stable at room temperature for up 1 month and at least until the lot specific expiry date if kept below -18°C. Reconstituted GH is stable for at least 6 months when stored in working aliquots at -20°C to -80°C. **Please avoid repeated freeze-thaw cycles.**

\*The Buffer may vary depending on the Lot #. Please contact our technical support if you have specific requirements.



**Amino Acid Sequence**

FPTIPLSRLF DNAMLAHRL HQLAFDITYQE FEEAYIPKEQ KYSFLQNPQT SLCFSESIPT PSNREETQQK  
SNLELLRISL LLIQSWLEPV QFLRSVFANS LVYGASDSNV YDLLKDLEEG IQTLMGRLED GSPRTGQIFK  
QTYSKFDTNS HNDDALLKNY GLLYCFRKDM DKVETFLRIV QCRSVEGSCG F

**Usage:** For research use only. Not for use in diagnostic or therapeutic procedures. Not for human use.

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ORDERING  
Tel.: +49 40 4320 8448 - 0  
order@active-bioscience.de  
www.active-bioscience.de

TECHNICAL SUPPORT  
Tel.: +49 40 4320 8448 - 11  
support@active-bioscience.de

Active Bioscience GmbH  
Oberaltenallee 8  
D-22081 Hamburg  
HRB 98170 Amtsgericht Hamburg