Recombinant Bovine Growth Hormone

Cat. No. GH1-183B **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant bovine GH-22K produced in*E. coli*is a single, non-glycosylated, polypeptide chain containing 191 amino acids and having a molecular mass of 21833 Dalton. Predicted pI=7.81. bGH is purified by proprietary chromatographic techniques.
Species	Bovine
Source	E.coli
Description	GH is a member of the somatotropin/prolactin family of hormones which play an important role in growth control. The gene, along with four other related genes, is located at the growth hormone locus on chromosome 17 where they are interspersed in the same transcriptional orientation; an arrangement which is thought to have evolved by a series of gene duplications. The five genes share a remarkably high degree of sequence identity. Alternative splicing generates additional isoforms of each of the five growth hormones, leading to further diversity and potential for specialization. This particular family member is expressed in the pituitary but not in placental tissue as is the case for the other four genes in the growth hormone locus. Mutations in or deletions of the gene lead to growth hormone deficiency and short stature.
Amino Acid Sequence	The sequence of the first five N-terminal amino acids was determined and was found to be Ala-Thr-Phe-Pro-Ala.
Physical Appearance	White lyophilized (freeze-dried) powder.

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Purity	Greater than 98.0% as determined by: (a) Analysis by RP-HPLC. (b) Gel filtration at non denaturing conditions using 25 nM Tris-HCl + 150 nM NaCl, pH 8. (c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.
Formulation	The protein was lyophilized from a concentrated (1mg/ml) solution with 0.0045mM NaHCO3 previously adjusted pH 8-9.
Solubility	It is recommended to reconstitute the lyophilized bGH in 0.4% NaHCO3 or water adjusted to pH 9, not less than 100μg/ml, which can then be further diluted to other aqueous solutions, preferably in a presence of a carrier protein such as BSA or similar.
Endotoxin	Less than 0.1 ng/μg (IEU/μg) of bovine GH.
Protein Content	Protein quantitation was carried out by two independent methods: 1. UV spectroscopy at 280 nm using the absorbency value of 0.684 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences. 2. Analysis by RP-HPLC, using a calibrated solution of GH-22K-pl as a Reference Standard.
Dimers And Aggregates	Less than 5% as determined by gel filtration chromatography.
Biological Activity	bGH is fully biologically active when compared to World Health Organization (WHO) reference standard using in vitro bioassay in PDF-P1 3B9 cells stably transfected with rabbit GH receptors. It is also capable of forming a 1:2 complex with the recombinant ovine growth hormone receptor extracellular domain (ECD).
Stability	Lyophilized bGH although stable at room temperature for 3 weeks, should be stored desiccated below -18℃. Upon reconstitution and filter sterilization oGH can be

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	stored at 4℃, pH 9 for up to 4 weeks. For long term storage and more diluted solutions it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

GENE INFORMATION

Gene Name	GH1 growth hormone [Bos taurus]
Synonyms	growth hormone; GH1; GH; somatotropin; growth hormone 1
Gene ID	280804
mRNA Refseq	NM_180996
Protein Refseq	NP_851339
UniProt ID	P01246
Chromosome Location	19q22
Pathway	Cytokine-cytokine receptor interaction; Jak-STAT signaling pathway; Neuroactive ligand-receptor interaction
Function	growth hormone receptor binding; hormone activity; metal ion binding

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