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Growth Hormone Antagonist, chicken recombinant (rchGH-A)

Catalog No: 97072
Lot No: XXXXX
Source: *E. coli*
Synonyms: GH1, GH, GHN, GH-N, hGH-N, Pituitary growth hormone, Growth hormone 1, Somatotropin

Background

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.

Description

Somatotropin Antagonist mutein G119R chicken recombinant produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 191 amino acids with an additional Ala at the N-terminus and having a molecular mass of 22.3 kDa. Chicken Growth-Hormone Antagonist recombinant is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

Formulation

The protein was lyophilized from a concentrated (1 mg/ml) solution with 0.3% NaHCO₃ pH 8.

Solubility

It is recommended to reconstitute the lyophilized GH in 0.4% NaHCO₃ or water adjusted to pH 8-9, not less than 100 µg/ml, which can then be further diluted to other aqueous solutions, preferably in a presence of a carrier protein such as BSA or similar.

Stability

Lyophilized Growth-Hormone antagonist, although stable at room temperature for at least two weeks, should be stored desiccated below -18°C. Upon reconstitution and filter sterilization GH can be stored at 4°C, 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.

Purity

Greater than 98.0% as determined by (a) Analysis by SEC-HPLC, (b) Analysis by SDS-PAGE.

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.



Activity

Recombinant Chicken Growth Hormone G119R mutant did not bind to ovine GHR-ECD and was devoid of any biological activity in FDC-P1 3B9 cells. However, in binding experiments that were carried out using chicken liver membranes, both ovine GH and chicken GH showed similar IC₅₀ values in competition with 125I-ovine GH, while the IC₅₀ of G119R mutein was 10-fold higher. These results emphasize the importance of species specificity and indicate the possibility of antagonistic activity of chGH G119R in homologous system.

Usage

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