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Granulocyte Macrophage-Colony Stimulating Factor Human Recombinant GROWTH FACTOR

Catalog Number: PRP-221
Quantity: 5 micrograms, 20 micrograms, 1 milligram
Format: Sterile-filtered white lyophilized (freeze-dried) powder
Host: *E. coli*

Background:

GM-CSF is a cytokine that controls the production, differentiation, and function of granulocytes and macrophages. The active form of the protein is found extracellularly as a homodimer. This gene has been localized to a cluster of related genes at chromosome region 5q31, which is known to be associated with interstitial deletions in the 5q- syndrome and acute myelogenous leukemia. Other genes in the cluster include those encoding interleukins 4, 5, and 13. GM-CSF stimulates the growth and differentiation of hematopoietic precursor cells from various lineages, including granulocytes, macrophages, eosinophils and erythrocytes.

Specificity and Preparation:

Granulocyte Macrophage Colony Stimulating Factor (GM-CSF) Human Recombinant produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 127 amino acids and having a molecular mass of 14477 Dalton. GM-CSF is purified by proprietary chromatographic techniques. GM-CSF was lyophilized after extensive dialysis against 2 mM sodium phosphate buffer pH= 7.4±0.1. Purity is greater than 98.0% as determined by RP-HPLC and by SDS-PAGE. The sequence of the first five N-terminal amino acids was determined and was found to be Ala-Pro-Ala-Arg-Ser. N-terminal methionine has been completely removed enzymatically. The ED₅₀ as determined by the dose-dependent stimulation of the proliferation of human TF-1 cells (human erythroleukemic indicator cell line) is < 0.1 ng/ml, corresponding to a Specific Activity of 11.1x10⁶ IU/mg. GM-CSF quantitation was carried out by two independent methods: 1) UV spectroscopy at 280 nm using the absorbency value of 0.963 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GEN computer analysis program of protein sequences (IntelliGenetics). 2) Analysis by RP-HPLC, using a standard solution of GM-CSF as a Reference Standard.

Usage and Storage:

It is recommended to reconstitute the lyophilized material in sterile 18 MΩ-cm H₂O not less than 100 μg/ml, which can then be further diluted to other aqueous solutions. Lyophilized material although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution, the material should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid repeated freezing and thawing. Gently spin down material before use; 5-10 seconds in a microfuge should be adequate.

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