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Product Information

Granulocyte Colony Stimulating Factor (G-CSF)

Human, Recombinant
Expressed in *E. coli*

Product Number **G 0407**

Product Description

Recombinant Human Granulocyte Colony Stimulating Factor (G-CSF) is produced from the DNA sequence encoding the mature human G-CSF protein generated from the 2-4 amino acid residue precursor G-CSF isoform.^{1,2} The methionyl form of *E. coli* expressed mature G-CSF has 175 amino acids and a molecular weight of approximately 18.8 kDa. Human and murine G-CSF have about 73% homology and show biological cross-reactivity.

Four distinct colony-stimulating factors (CSFs) that promote survival, proliferation and differentiation of bone marrow precursor cells have been well characterized: granulocyte/macrophage-CSF (GM-CSF), granulocyte-CSF (G-CSF), macrophage-CSF (M-CSF) and interleukin-3 (IL-3, Multi-CSF).^{3,4} Both GM-CSF and IL-3 are multipotential growth factors, stimulating proliferation of progenitor cells from more than one hematopoietic lineage. In contrast, G-CSF and M-CSF are lineage-restricted hematopoietic growth factors, stimulating final mitotic divisions and the terminal cellular maturation of the partially differentiated hematopoietic progenitors.

Granulocyte CSF^{5,6} is produced by monocytes and fibroblasts. It stimulates granulocyte colony formation, activates neutrophils and mature granulocytes, and promotes differentiation of certain myeloid leukemic cells.

Reagents

Recombinant Human Granulocyte Colony Stimulating Factor (G-CSF) is supplied as approximately 5 µg of protein lyophilized from a 0.2 µm filtered solution in 10 mM acetic acid, pH 3.4, containing 0.25 mg bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least

0.1% human serum albumin or bovine serum albumin to a concentration not less than 1 µg/ml.

Storage/Stability

Before reconstitution, store lyophilized samples at -20 °C. Upon reconstitution, store at 2-8 °C for up to six months without detectable loss of activity.

Do not freeze after reconstitution. Loss of activity has been observed upon thawing.

Product Profile

The proliferative activity of recombinant human G-CSF is tested in culture using a mouse myeloblastic cell line NFS-60 cells.⁶

ED₅₀: 0.01 - 0.1 ng/ml

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: > 97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level: < 0.1 ng/µg protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

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