

Product Information

Granulocyte-Macrophage Colony Stimulating Factor, from mouse recombinant, expressed in *E. coli*

Catalog Number **G0282**
Storage Temperature -20°C

Synonym: GM-CSF

Product Description

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).^{1,2}

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. GM-CSF induces myeloid progenitor cells from bone marrow to form colonies containing macrophages and granulocytes in a semisolid media. It acts upon mature macrophages, eosinophils, and neutrophils to stimulate various functional activities.²

GM-CSF is an acidic glycoprotein that binds to high affinity receptors on GM-CSF sensitive cells. Although human and mouse GM-CSF share 54% amino acid sequence homology, their biological actions are species-specific.⁴ Other growth factors and CSFs modulate receptor binding or actions of GM-CSF.⁵

Molecular mass: ~15 kDa

This product is lyophilized from 0.2 μm -filtered 10 mM acetic acid containing 250 μg BSA

Purity: $\geq 97\%$ (SDS-PAGE)

Sterility: 0.2 μm -filtered, aseptic fill

Endotoxin: ≤ 1 EU/ μg of GM-CSF

The proliferative activity of recombinant mouse GM-CSF is tested in culture using mouse FDC-P1 cells. The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

ED₅₀: ≤ 0.2 ng/ml using mouse FDP-1 cells, corresponding to a specific activity of $\leq 5 \times 10^6$ units/mg.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Prepare a stock solution by reconstituting the contents of the vial using 0.2 μm -filtered PBS or water to a concentration of 0.1 mg/ml. Additional filtration of the stock solution is not recommended and may result in product loss due to adsorption onto the filter membrane. The stock solution can be diluted further in aqueous buffers.

Storage/Stability

The product is stable for 2 years stored at -20°C . For extended storage in solution, freeze in working aliquots at -70°C or -20°C for up to 10 months. Repeated freezing and thawing is not recommended.

References

1. Mazur, E., and Cohen, J., Clin. Pharmacol. Ther., **46**, 250 (1989).
2. Morstyn, G., and Burgess, A., Cancer Res., **48**, 5624 (1988).
3. Wong, G. et al., Science, **228**, 810 (1985).
4. Metcalf, D., Blood, **67**, 257 (1986).
5. Nicola, N., Immunol. Today, **8**, 134 (1987).

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