

PRODUCT DESCRIPTION

Granulocyte-macrophage colony-stimulating factor (GM-CSF) is a growth factor for granulocyte-macrophage progenitors, as well as erythroid, megakaryocyte and eosinophil progenitors. GM-CSF is produced by cell types such as activated T cells, B cells, macrophages, mast cells, endothelial cells and fibroblasts in response to cytokine or immune and inflammatory stimuli. GM-CSF can also activate effector functions of mature granulocytes, monocytes, macrophages and eosinophils.^{1,2} It is also thought that GM-CSF has a functional role on non-hematopoietic cells, and can stimulate the proliferation of tumor cells, including osteogenic sarcoma, carcinoma and adenocarcinoma cell lines. Recombinant rat GM-CSF preparation contains a mixture of the 127 and 128 amino acid residue methionyl forms of rat GM-CSF. The mature rat GM-CSF has a calculated mass of 14.7 kDa. Recombinant rat GM-CSF is reactive with mouse cells.^{3,4}

SOURCE

A DNA sequence encoding the mature rat GM-CSF protein sequence (Ala 1- Lys 127) was expressed in *E. coli*.

PURITY

Purity is greater than 97%, as determined by SDS-PAGE and visualized by silver stain. Endotoxin level is <0.1 ng (1.0 EU) per 1 µg cytokine, as determined by the LAL method.

ACTIVITY

The biological activity of GM-CSF is measured by its ability to induce proliferation of the factor-dependent mouse cell line, DA3. The ED₅₀ is typically 0.03 - 0.10 ng/mL.

FORMULATION

Recombinant rat GM-CSF is lyophilized from a 0.2 µm filtered solution in phosphate buffered saline (PBS) containing 50 µg bovine serum albumin per 1 µg cytokine.

RECONSTITUTION

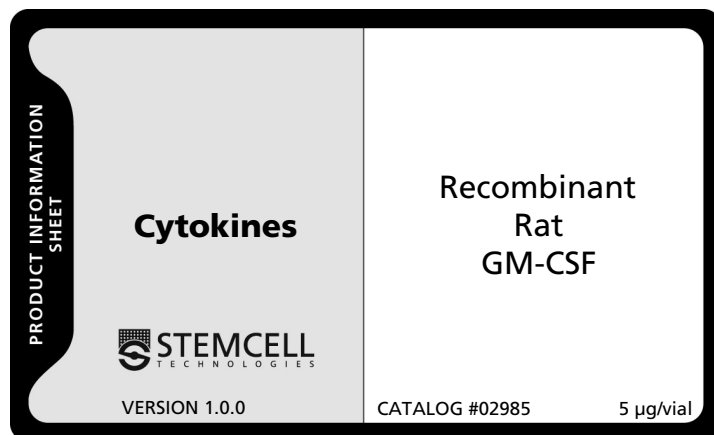
Centrifuge vial prior to opening. Reconstitute rat GM-CSF at a concentration greater than 10 µg/mL with sterile PBS containing at least 0.1% human or bovine serum albumin.

STABILITY AND STORAGE

Lyophilized rat GM-CSF is stable for up to six months from date of receipt at -20°C to -70°C.

Reconstituted rat GM-CSF can be stored under sterile conditions at 2°C - 8°C for one month, or at -20°C to -70°C (in a manual defrost freezer) for three months without detectable loss of activity.

Avoid repeated freezing and thawing.



REFERENCES

1. Martinez-Moczygemba M, Huston DP: Biology of common beta receptor-signaling cytokines: IL-3, IL-5, and GM-CSF. *J Allergy Clin Immunol* 112: 653-665, 2003
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3. Oaks MK, Penwell RT, Suh CH, Tector AJ: Polymerase chain reaction cloning and expression of the rat granulocyte-macrophage colony-stimulating factor. *J Interferon Cytokine Res* 15: 1095-1102, 1995
4. Vandenabeele P, Guisez Y, Declercq W, Bauw G, Vandekerckhove J, Fiers W: Response of murine cell lines to an IL-1/IL-2-induced factor in a rat/mouse T hybridoma (PC60): differential induction of cytokines by human IL-1 alpha and IL-1 beta and partial amino acid sequence of rat GM-CSF. *Lymphokine Res* 9: 381-389, 1990