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# Mouse GM-CSF Recombinant Protein

20 µg

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**For Research Use Only. Not for Use in Diagnostic Procedures.****MW (kDa):**  
14.3**UniProt ID:**  
#P01587**Entrez-Gene Id:**  
12981

## Background

Granulocyte-macrophage colony-stimulating factor (GM-CSF) is produced by activated T cells, NK cells, and macrophages (1,2). Target cells include granulocytes, monocyte precursors, and subsets of differentiated myeloid cells (1,3,4). Many target cells require GM-CSF for survival. GM-CSF induces proliferation, is involved in the hematopoietic differentiation of dendritic cells, and is a key factor in differentiation pathways leading from stem cells. GM-CSF activates effector functions of myeloid cells, thereby linking adaptive and innate immunity and in turn may boost anti-tumor immunity (5). GM-CSF receptor is composed of GM-CSFR $\alpha$  and the common  $\beta$  chain,  $\beta$ C, which is also utilized by IL-3 and IL-5 (1). Binding of GM-CSF initiates the Jak2, Stat5, and PI3K/Akt pathways (1).

## Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 µg mGM-CSF.

## Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

## Source / Purification

Recombinant mouse GM-CSF was expressed in *E. coli* and is supplied in a lyophilized form.

## Bioactivity

The bioactivity of recombinant mGM-CSF was determined in an FDC-P1 cell proliferation assay. The ED<sub>50</sub> of each lot is less than or equal to 0.05 ng/ml.

## Background References

- Guthridge, M.A. et al. (1998) *Stem Cells* 16, 301-13.
- Zhang, A.L. et al. (2007) *Blood* 110, 2484-93.
- Sonoda, Y. et al. (1988) *Proc Natl Acad Sci U S A* 85, 4360-4.
- Sonoda, Y. et al. (1988) *Blood* 72, 1381-6.
- de la Cruz-Merino, L. et al. (2008) *Oncologist* 13, 1246-54.

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