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Human Granulocyte Macrophage Colony Stimulating Factor (hGM-CSF)



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MW (kDa):	UniProt ID:	Entrez-Gene Id:
14	#P04141	1437

Background

GM-CSF is produced by activated T cells, NK cells and macrophages (1,5). Target cells include granulocyte, monocyte precursors and subsets of differentiated myeloid cells (1,2,3). Many target cells require GM-CSF for survival. GM-CSF induces proliferation, is involved in 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 (4). GM-CSF receptor is composed of GM-CSFR α and the common β chain, β 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

Less than 0.01 ng endotoxin/1 μ g hGM-CSF.

Purity

>98% as determined by SDS-PAGE of 6 μ g reduced (+) and non-reduced (-) recombinant hGM-CSF. All lots are greater than 98% pure.

Source / Purification

Recombinant human GM-CSF (hGM-CSF) Ala18 - Glu144 (Accession # NM_000758) was produced in *E. coli* at Cell Signaling Technology.

Bioactivity

The bioactivity of recombinant hGM-CSF was determined in a TF-1 cell proliferation assay. The ED₅₀ of each lot is between 5-500 pg/ml.

Background References

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

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