

## Recombinant Human GM-CSF

### Information

<b>Gene ID</b>	1437
<b>Accession #</b>	P04141
<b>Alternate Names</b>	Granulocyte/Macrophage Colony-Stimulating Factor; CSF-2; MGI-1GM; Pluripoietin- $\alpha$
<b>Source</b>	Human embryonic kidney cell, HEK293-derived human GM-CSF/CSF2 protein
<b>Protein sequence</b>	APARSPSPST QPWEHVNAIQ EARRLLNLSR DTAAEMNETV EWISEMFDLQ EPTCLQTRLE LYKQGLRGSL TKLKGPLTMM ASHYKQHCPP TPETSCATQI ITFESFKENL KDFLLVIPFD CWEPVQE
<b>Tag</b>	No Tag
<b>M.Wt</b>	The protein has a calculated MW of 14.5 kDa. The protein migrates as 25 kDa $\pm$ 3 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under reducing (R) condition (SDS-PAGE) due to glycosylation.
<b>Appearance</b>	Solution protein.
<b>Stability &amp; Storage</b>	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.
<b>Concentration</b>	0. 2 mg/mL
<b>Formulation</b>	Dissolved in sterile PBS buffer.
<b>Reconstitution</b>	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
<b>Biological Activity</b>	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The EC50 for this effect is 6-30 pg/mL.
<b>Shipping Condition</b>	Shipping with dry ice.
<b>Handling</b>	Centrifuge the vial prior to opening.
<b>Usage</b>	For Research Use Only! Not to be used in humans.

## Quality Control

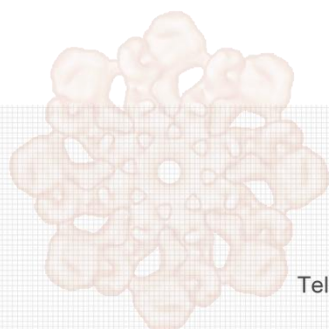
Purity	> 95 % by SDS-PAGE.
Endotoxin	Less than 1.0 EU/μg as determined by LAL method.

## Description

Granulocyte-macrophage colony-stimulating factor (GM-CSF) is secreted by several different types of cells, including activated T cells, B cells, macrophages, mast cells, endothelial cells, and fibroblasts, in response to cytokines or immune and inflammatory stimuli. It was originally described as a growth factor that can support in vitro colony formation of granulocyte-macrophage progenitor cells and has the function of stimulating the growth and differentiation of hematopoietic precursor cells from different lineages. GM-CSF has also been reported to have functional effects on non-hematopoietic cells and can induce human endothelial cell migration and proliferation. In addition, it stimulates the proliferation of a variety of tumor cell lines, including osteoblastic sarcoma, carcinoma, and adenocarcinoma cell lines. Human GM-CSF and mouse GM-CSF have 54% sequence identity, but there is no biological effect between different species. GM-CSF is used as a drug to stimulate the production of white blood cells after chemotherapy and has recently been evaluated in clinical trials as a vaccine adjuvant in HIV-infected patients.

## Reference

1. Wang JM, Chen ZG, Colotta F, et al. 1988. Behring Inst Mitt: 270-3.
2. 1989. N Engl J Med, 320: 253-4.
3. Nissen-Druey C. 1989. Nouv Rev Fr Hematol, 31: 99-101
4. Eager Rand Nemunaitis J. 2005. Mol Ther, 12: 18-27
5. Tran T, Fernandes DJ, Schuliga M, et al. 2005. Br J Pharmacol, 145: 123-31.



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