

## Recombinant Human GM-CSF (His, Strep)

### Information

Gene ID	1437
Accession #	P04141
Alternate Names	Granulocyte/Macrophage Colony-Stimulating Factor; CSF-2; MGI-1GM; Pluripoietin- $\alpha$
Source	HEK293
Protein sequence	APARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEISEMFDLQEPTCLQTRLELYKQGLRGS LT KLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPFDCWEPVQE
Tag	C-His, C-Strep
M.Wt	The protein has a calculated MW of 14.4 KDa.
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. -2 years from date of receipt, -20 to -70 °C as supplied.
Concentration	1 mg/mL
Formulation	Supplied as a 0.2 $\mu$ m filtered solution in PBS, pH7.4.
Reconstitution	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.
Biological Activity	Fully biologically active as determined by a cell proliferation assay using TF-1 human erythroleukemic cells. The EC50 for this effect is 0.2 ng/mL.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

### Quality Control

Purity	> 95 % by SDS-PAGE.
Endotoxin	Less than 1.0 EU/ $\mu$ g 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.



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