

## GM-CSF/CSF2 Protein, Human, Recombinant (E. coli)

### General Information

Synonyms:	Colony-Stimulating Factor;CSF2;CSF;Sargramostim;Molgramostin;Granulocyte-Macrophage Colony-Stimulating Factor;GMCSF;GM-CSF
Protein Construction:	Ala18-Glu144
Species:	Human
Expression Host:	E. coli
Accession:	P04141
AA Sequence:	Ala18-Glu144

### QC Testing

Biological Activity:	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells.The ED50 for this effect is 4-20 pg/ml. (QC verified)
Purity:	Greater than 95% as determined by reducing SDS-PAGE. Greater than 95% as determined by SEC-HPLC.
Endotoxin:	< 0.001 ng/μg (0.01 EU/μg) as determined by LAL test.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF) was initially characterized as a growth factor that can support the in vitro colony formation of granulocyte-macrophage progenitors. It is produced by a number of different cell types (including activated T cells, B cells, macrophages, mast cells, endothelial cells and fibroblasts) in response to cytokine of immune and inflammatory stimuli. Besides granulocyte-macrophage progenitors, GM-CSF is also a growth factor for erythroid, megakaryocyte and eosinophil progenitors. On mature hematopoietic,

monocytes/ macrophages and eosinophils. GM-CSF has a functional role on non-hematopoietic cells. It can induce human endothelial cells to migrate and proliferate. Additionally, GM-CSF can also stimulate the proliferation of a number of tumor cell lines, including osteogenic sarcoma, carcinoma and adenocarcinoma cell lines.

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