

## CSF2

### Recombinant Human GM-CSF, GMP Grade

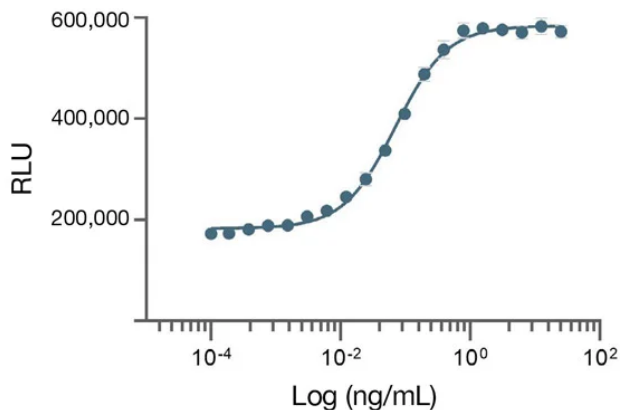
<b>Catalog No.</b>	CRG100A-GMP CRG100B-GMP CRG100C-GMP	<b>Quantity:</b>	50 µg 100 µg 1.0 mg
<b>Alternate Names:</b>	Granulocyte-macrophage colony-stimulating factor, GM-CSF, Colony-stimulating factor, CSF2, Molgramostin, Sargramostim		
<b>Description:</b>	<p>Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF) 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, immune and inflammatory stimuli. GM-CSF is a growth factor for granulocyte-macrophage, erythroid, megakaryocyte and eosinophil progenitors. On mature hematopoietic cells, GM-CSF activates the effector functions of granulocytes, monocytes and eosinophils. GM-CSF is species specific and human GM-CSF has no biological effects on mouse cells.</p> <p>This product is produced from <i>E. coli</i> and is manufactured in a facility that does not use or process beta-lactam containing materials. No animal- or human-derived materials were used during manufacturing or as ingredients. This product is manufactured, tested, and released in an ISO 9001:2015 certified facility and follows cGMP practices. USP chapter &lt;1043&gt; for ancillary materials considered in the manufacture of this product.</p>		
<b>UniProt ID:</b>	P04141		
<b>Source:</b>	<i>E. coli</i>		
<b>Molecular Weight:</b>	14.6 kDa (128 aa) monomer		
<b>Formulation:</b>	Lyophilized (1mg/ml) from sterile-filtered solution 10 mM sodium phosphate, pH 7.5.		
<b>Purity:</b>	≥98% by SDS-PAGE with Coomassie stain		
<b>Endotoxin Level:</b>	< 0.02 EU/µg using USP <85> / EP 2.6.14		
<b>Biological Activity:</b>	ED <sub>50</sub> ≤ 0.2 ng/ml, as determined by dose-dependent proliferation of human TF-1 cells.		
<b>Specific Activity:</b>	~1.6 x 10 <sup>4</sup> IU/µg, calibrated against the recombinant human granulocyte macrophage colony stimulating factor WHO International Standard (NIBSC code 88/646).		
<b>Amino Acid Sequence:</b>	MAPARSPSPS TQPWEHVNAI QEARRLLNLS RDTAEMNET VEIVSEMFDL QEPTCLQTRL ELYKQGLRGS LTKLKGPLTM MASHYKQHCP PTPETSCATQ IIFESFKEN LKDFLLVIPF DCWEPVQE		
<b>Reconstitution:</b>	Allow the vial and sterile water/Water for Injection to equilibrate to room temperature. Draw up desired volume for reconstitution with sterile syringe. Aseptically puncture through rubber stopper with sterile needle, inject the buffer to achieve the desired concentration (0.1-0.5 mg/mL). Swirl the vial gently, <b>do not vortex</b> . Allow protein to rehydrate for 10-15 minutes at room temperature with occasional gentle mixing.		



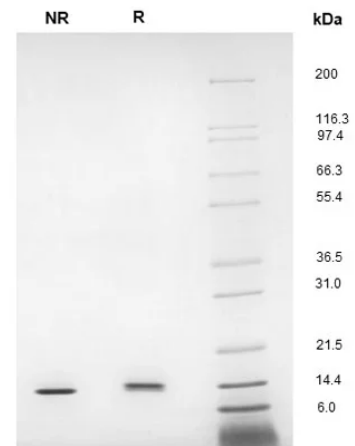
**Storage & Stability:** Lyophilized vial is shipped at ambient temperature. Immediately upon receipt, store unopened vial at  $-20^{\circ}\text{C}$  (manual defrost freezer) or  $-80^{\circ}\text{C}$  for up to 36 months. Upon reconstitution, prepare working aliquots and store at  $-20^{\circ}\text{C}$  (manual defrost freezer) or  $-80^{\circ}\text{C}$ . It is recommended that a carrier protein such as 0.1% HSA or BSA is added for long term storage. For short term storage reconstituted material is stable for 4-6 weeks when stored at  $2-8^{\circ}\text{C}$ . **Avoid repeated freeze-thaw cycles.**

**Country of Origin:** USA

Proliferation Assay GMP Grade rhGM-CSF  
using TF-1 cell line



SDS-PAGE GMP Grade rhGM-CSF  
Prominent band at 14.6 kDa



**NOT FOR HUMAN USE. FOR RESEARCH ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.**