Recombinant Rat Granulocyte Macrophage Colony Stimulating Factor (rr GM-CSF)

**Synonyms:** CSF-2, MGI-1GM, Pluripoietin-alpha, Molgramostin, Sargramostim.

**Introduction:** GMCSF is a cytokine that controls the production, differentiation and function of granulocytes and macrophages. The active form of the protein is found extracellularly as a homodimer. GM-CSF has been localized to a cluster of related genes at chromosome region 5q31, which is known to be associated with interstitial deletions in the 5q- syndrome and acute myelogenous leukemia. Other genes in the cluster include those encoding Interleukins 4, 5, and 13. GM-CSF stimulates the growth and differentiation of hematopoietic precursor cells from various lineages, including granulocytes, macrophages, eosinophils and erythrocytes.

**Description:** Recombinant rat GM-CSF produced in *E. Coli* is a single, non-glycosylated, polypeptide chain containing 128 amino acids and having a molecular mass of 14.59 KDa. rr GM-CSF is purified by proprietary chromatographic techniques.

**Source:** *Escherichia Coli*.

**Physical Appearance:** Sterile filtered white lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from a 0.22 µm filtered carrier free solution in PBS. The aliquotes of 1µg and 2 µg contain Trehalose 5% (w/vol) for better recovery

**Solubility:** It is recommended to reconstitute the lyophilized rr GM-CSF in sterile H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

**Stability:** Lyophilized rr GM-CSF although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rr GM-CSF should be stored at 4° C between 2-7 days and for future use below -18° C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Purity:** Greater than 95.0% as determined by: SDS-PAGE.

**Amino Acid Sequence:** The sequence of the first five N-terminal amino acids was determined and was found to be Met-Ala-Pro-Thr-Arg.

**Biological Activity:** The ED₅₀ as determined by the dose-dependant stimulation of the proliferation of murine FDCP-1 cell line is < 0.01 ng/ml, corresponding to a specific activity of 1 x 10⁸ IU/mg.

**Endotoxicity:** The endotoxin level is less than 1 EU / µg determined by LAL method.

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