9051 Mira Mesa Blvd, #910094
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Tel: 760-390-3989

# GM CSF Human, Sf9

*Granulocyte Macrophage-Colony Stimulating Factor Human Recombinant, Sf9*
*GRF0139*

## Product Overview

| | |
|---|---|
| Name | GM CSF Human, Sf9 |

**Description**

Granulocyte Macrophage-Colony Stimulating Factor Human Recombinant, Sf9

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|---|---|
| Accession (Primary) | P04141 |

**Synonyms**

CSF-2, MGI-1GM, GMCSF, 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. This gene 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.

**Source**

Insect Cells.

**Physical Appearance**

Sterile Filtered White lyophilized (freeze-dried) powder.

**Formulation**

The protein was lyophilized with PBS.

**Stability**

Lyophilized Granulocyte Macrophage Colony Stimulating Factor although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution GMCSF 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 98.0% 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 Ala-Pro-Ala-Arg-Ser.

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**Biological Activity**

The ED50 as determined by the dose-dependant stimulation of the proliferation of human TF-1 cells (human erythroleukemic indicator cell line) is < 0.1 ng/ml, corresponding to a Specific Activity of 10,000,000IU/mg.

**Solubility**

It is recommended to reconstitute the lyophilized Granulocyte Macrophage Colony Stimulating Factor in sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

**Background**

Recombinant Granulocyte-Macrophage Colony-Stimulating Factor (GMCSF) is a protein that plays a crucial role in the production and differentiation of white blood cells, including granulocytes and macrophages. It is a potent stimulator of hematopoietic stem cells, which are responsible for the production of all blood cells in the body. Recombinant GMCSF is a synthetic version of the protein that is produced using recombinant DNA technology. Recombinant GMCSF has been extensively studied for its potential therapeutic applications in a variety of medical conditions, including cancer, autoimmune diseases, and infectious diseases. In cancer, GMCSF is used as an immunostimulatory agent to enhance the immune response against cancer cells. By stimulating the production and differentiation of white blood cells, GM-CSF can increase the number of immune cells that can recognize and attack cancer cells. This approach has been successfully used in the treatment of several types of cancer, including melanoma and leukemia. In autoimmune diseases, recombinant GMCSF has been investigated as a potential treatment for conditions such as rheumatoid arthritis and multiple sclerosis. These diseases are characterized by an overactive immune response that attacks healthy tissues in the body. By modulating the immune response, GMCSF may be able to reduce inflammation and prevent further damage to affected tissues. In infectious diseases, recombinant GMCSF has been studied as a potential treatment for conditions such as sepsis and HIV/AIDS. In sepsis, a severe bacterial infection, GMCSF may be able to stimulate the production of white blood cells and improve the immune response against the infection. In HIV/AIDS, GMCSF may be able to enhance the immune response against the virus and reduce the risk of opportunistic infections. Recombinant GMCSF is typically administered by injection, either directly into the affected tissue or into the bloodstream. It is generally well-tolerated, although some patients may experience side effects such as fever, fatigue, and muscle pain. In conclusion, recombinant GMCSF is a promising therapeutic agent with potential applications in a variety of medical conditions. Its ability to stimulate the production and differentiation of white blood cells makes it a valuable tool in the treatment of cancer, autoimmune diseases, and infectious diseases. Ongoing research is likely to uncover new uses for this protein and further refine its therapeutic potential.

**Precautions**

GM CSF Human, Sf9 is for research use only and not for use in diagnostic or therapeutic procedures.

## Target Information: ( P04141 )

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# Background

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