



## User Manual

### **Granulocyte Macrophage Colony Stimulating Factor (GM-CSF) (Human)**

**Cat. No. HEOPP-07043**



**Description:**

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 or immune and inflammatory stimuli. Besides granulocyte-macrophage progenitors, GM-CSF is also a growth factor for erythroid, megakaryocyte and eosinophil progenitors. On mature hematopoietic cells, GM-CSF is a survival factor for and activates the effector functions of granulocytes, monocytes/macrophages and eosinophils. GM-CSF has also been reported to have 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. GM-CSF is species specific and human GM-CSF has no biological effects on mouse cells.

**Source:**

*Escherichia coli*

**Unit:**

1 mg

**Reconstitution:**

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at < -20°C. Further dilutions should be made in appropriate buffered solutions.

**Formulation:**

Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4.

**Storage:**

This lyophilized preparation is stable at 2-8°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

**Molecular Weight:**

Approximately 14.6 kDa, a single non-glycosylated polypeptide chain containing 127 amino acids.

**Endotoxin:**

Less than 1 EU/μg of GM-CSF as determined by LAL method.

**Usage:**

This material is offered by Cyagen Biosciences for research, laboratory or further evaluation purposes. FOR RESEARCH USE ONLY. NOT INTENDED FOR ANY ANIMAL OR HUMAN THERAP EUTIC OR DIAGNOSTIC USE.

**Biological Activity:**

The ED50 determined by a cell proliferation assay using human TF-1 cells is less than 0.1 ng/mL, corresponding to a specific activity of  $> 1.0 \times 10^7$  IU/mg.

**Physical Appearance:**

Sterile filtered white lyophilized (freeze-dried) powder.

**AA Sequence:**

APARSPSPS TQPWEHVNAI QEARRLLNLS RD TAAEMNET VE VISEMFDL  
QEPTCLQTRL ELYKQGLRGS LTKLKGPLTM MASHYKQHCP PTPETSCATQ  
IITFESFKEN LKDFLLVIPF DCWEPVQE

**Purity:**

> 98% by SDS-PAGE and HPLC analyses.

Material Safety Data Sheets (MSDSs) are available upon request.

The Certificate of Analysis (COA), which provides detailed quality control information for each product, is also available at the Cyagen website.

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