



User Manual

Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF) (Murine)

Cat. No. MEOPP-07021



Description:

Granulocyte- Macrophage Colony Stimulating Factor (GM-CSF) was initially characterized as a factor that can support the in vitro colony formation of granulocyte-macrophage progenitors. It is also a growth factor for erythroid, megakaryocyte, and eosinophil progenitors. GM-CSF is produced by a number of different cell types (including T cells, B cells, macrophages, mast cells, endothelial cells, fibroblasts, and adipocytes) in response to cytokine or inflammatory stimuli. On mature hematopoietic cells, GM-CSF is a survival factor for and activates the effector functions of granulocytes, monocytes/macrophages, and eosinophils. GM-CSF promotes a Th1 biased immune response, angiogenesis, allergic inflammation, and the development of autoimmunity. It shows clinical effectiveness in ameliorating chemotherapy-induced neutropenia, and GM-CSF transfected tumor cells are utilized as cancer vaccines. The 22 kDa glycosylated GM-CSF, similar to IL-3 and IL-5, is a cytokine with a core of four bundled α -helices. Mature mouse GM-CSF shares 49% - 54% amino acid sequence identity with canine, feline, human, and porcine GM-CSF and 69% with rat GM-CSF. GM-CSF exerts its biological effects through a heterodimeric receptor complex composed of GM-CSF R α /CD116 and the signal transducing common β chain (CD131) which is also a component of the high-affinity receptors for IL-3 and IL-5. In addition, GM-CSF binds a naturally occurring soluble form of GM-CSF R α . The activity of GM-CSF is species specific between human and mouse. Mouse GM-CSF is only weakly active on rat cells, although rat GM-CSF is fully active on mouse cells.

Source:

Escherichia coli

Unit:

5 μ g

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 $< -20^{\circ}\text{C}$. Further dilutions should be made in appropriate buffered solutions.

Formulation:

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

Storage:

This lyophilized preparation is stable at $2-8^{\circ}\text{C}$, 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 $2-8^{\circ}\text{C}$. 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:

Recombinant murine GM-CSF is a 14.1 kDa globular protein consisting of 124 amino acids residues.

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 murine FDC-P1 cells is less than

0.2 ng/mL, corresponding to a specific activity of $> 5.0 \times 10^6$ IU/mg.

Physical Appearance:

Sterile filtered white lyophilized (freeze-dried) powder.

AA Sequence:

APTRSPITVT RPWKHVEAIK EALNLLDDMP VTLNEEVEVV SNEFSFKKLT
CVQTRLKIFE QGLRGNFTKL KGALNMTASY YQTYCPPTPE TDCETQVTTY
ADFIDSLKTF LTDIPFECKK PGQK

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.

Cyagen Biosciences reserves all rights on the technical documents of its culture products. No part of this document may be reproduced or adapted for other purposes without written permission from Cyagen Biosciences.