

PRODUCT DATA SHEET



Bioworld Technology, Inc.

Recombinant Murine Granulocyte- Macrophage Colony Stimulating Factor (rMuGM-CSF)

Catalog Number: PR2017

Source: Escherichia coli.

Quantity: 2µg/10µg/1.0mg

Description

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 (1, 2). GM-CSF promotes a Th1 biased immune response, angiogenesis, allergic inflammation, and the development of autoimmunity (3 - 5). It shows clinical effectiveness in ameliorating chemotherapy-induced neutropenia, and GM-CSF transfected tumor cells are utilized as cancer vaccines (6, 7). The 22 kDa glycosylated GM-CSF, similar to IL-3 and IL-5, is a cytokine with a core of four bundled α -helices (8 - 10). 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 (11, 12). In addition, GM-CSF binds a naturally occurring soluble form of GM-CSF R α (13). 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 (14, 15).

Molecular Weight:

Recombinant murine GM-CSF is a 14.2 kDa globular protein consisting of 124 amino acids residues.

Purity:

>95% by SDS-PAGE and HPLC analyses.

Biological Activity:

The ED50 as determined by the dose-dependent stimulation of the proliferation of murine FDC-P1 cells is ≤ 0.2 ng/ml, corresponding to a specific activity of $\geq 5 \times 10^6$ units/mg.

Physical Appearance:

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation:

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

AA Sequence:

M A P T R S P I T V T R P W K H V E A I K E A L N L L
D D M P V T L N E E V E V V S N E F S F K K L T C V Q
T R L K I F E Q G L R G N F T K L K G A L N M T A S Y
Y Q T Y C P P T P E T D C E T Q V T T Y A D F I D S L K
T F L T D I P F E C K K P V Q K

Endotoxin:

Less than 1EU/mg of rmGM-CSF as determined by LAL method.

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.

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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 reconsti-

tuted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

Usage:

This material is offered by USA Bioworld biotech for research, laboratory or further evaluation purposes. NOT FOR HUMAN USE. Made in China

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