Miltenyi Biotec

Mouse GM-CSF

10 µg	130-094-043
25 µg	130-095-746
100 µg	130-094-044

Contents

1. Description

Components	**Mouse GM-CSF:** Purified recombinant mouse granulocyte-macrophage colony-stimulating factor.
Sizes	10 µg, 25 µg, 100 µg.
Biological activity	The ED_{50} is ≤0.1 ng/mL* corresponding to a specific activity of ≥1×10^7 U/mg.
Primary structure	Single, non-glycosylated polypeptide chain (124 amino acid residues).
Molecular mass	14.1 kDa.
Source	Produced in *E. coli*.
Product format	Lyophilized from a 0.2 µm filtered buffer solution.
Stabilizer	Mannitol and trehalose (or none, 100 µg size).
Purity	>97% as determined by SDS-PAGE analysis.
Endotoxin level	Low endotoxin (<0.1 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.
Storage	Lyophilized Mouse GM-CSF should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.
Reconstitution	It is recommended to reconstitute lyophilized Mouse GM-CSF with deionized sterile filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

* The ED_{50} is determined by proliferation assay mouse FDC-P1 cells provided by the German Resource Center for Biological Material (DSMZ) according to DeLamarter, J.F. *et al.*[1]. The proliferation assay was calibrated with the Non WHO Reference Material for Mouse GM-CSF (NIBSC code 91/658) provided by the National Institute for Biological Standards and Control.

1.1 Background information

Granulocyte macrophage colony-stimulating factor (GM-CSF) is a hematopoietic growth factor, which is essential for proliferation and development of granulocyte and monocyte/macrophage progenitors. It also functions as a growth factor for erythroid and megakaryocytic precursor cells in conjunction with erythropoietin. GM-CSF is secreted by various cell types including T cells, macrophages, endothelial cells, and fibroblasts in response to inflammatory stimuli and cytokines. In addition, GM-CSF strongly chemoattracts neutrophils and eosinophils and enhances the effector functions of neutrophils and macrophages.

1.2 Applications

Mouse GM-CSF may be used for a variety of applications, including:

- induction of colony formation of granulocyte/macrophage progenitors in semi-solid medium.
- *in vitro* generation of DCs from bone marrow[2] or the maturation of $CD11c^+$ splenocytes[3].
- generation of antigen-presenting (DC like) cells in primary brain cell culture[4].

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. DeLamarter, J.F. *et al.* (1985) Recombinant murine GM-CSF from E. coli has biological activity and is neutralized by a specific antiserum. EMBO 4: 2575–2581.
2. Ait-Oufella, H. et al. (2010) B cell depletion reduces the development of atherosclerosis in mice. J. Exp. Med. 207: 1579–1587.
3. Billiard, F. *et al.* (2006) Regulatory and effector T cell activation levels are prime determinants of *in vivo* immune regulation. J. Immunol. 177: 2167–2174.
4. Fischer, H. G. and Bielinsky, A. K. (1999) Antigen presentation function of brain-derived dendriform cells depends on astrocyte help. Int. Immunol. 11: 1265–1274.

All protocols and data sheets are available at **www.miltenyibiotec.com**.

140-002-480.04

Miltenyi Biotec GmbH
Friedrich-Ebert-Straße 68, 51429 Bergisch Gladbach, Germany
Phone +49 2204 8306-0, Fax +49 2204 85197
macs@miltenyibiotec.de
www.miltenyibiotec.com

Miltenyi Biotec Inc.
2303 Lindbergh Street, Auburn, CA 95602, USA
Phone 800 FOR MACS, +1 530 888 8871, Fax +1 530 888 8925
macs@miltenyibiotec.com