

Mouse GM-CSF premium grade

10 µg	130-095-742
25 µg	130-095-793
100 µg	130-095-739
1000 µg	130-095-735

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1. Description

Components	Mouse GM-CSF, premium grade: Purified recombinant mouse granulocyte-macrophage colony-stimulating factor.
Sizes	10 µg, 25 µg, 100 µg, 1000 µg.
Biological activity	The ED ₅₀ is ≤0.02 ng/mL* corresponding to a specific activity of ≥5×10 ⁷ U/mg.
Primary structure	Single, non-glycosylated polypeptide chain (124 amino acid residues).
Molecular mass	14.1 kDa.
Source	Produced in <i>E. coli</i> .
Product format	Lyophilized from a 0.2 µm filtered buffer solution.
Stabilizer	Mannitol and trehalose.
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, premium grade 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 ED₅₀ 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 marrow² or the maturation of CD11c⁺ splenocytes³.
- generation of antigen-presenting (DC like) cells in primary brain cell culture⁴.

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 dendriiform cells depends on astrocyte help. *Int. Immunol.* 11: 1265–1274.

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

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