

PRODUCT INFORMATION



GM-CSF (mouse, recombinant)

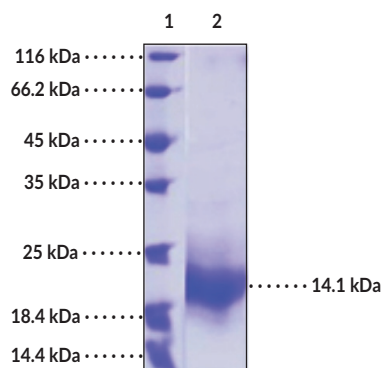
Item No. 32079

Overview and Properties

Synonyms:	CSF-2, MGI-IGM
Source:	Active recombinant mouse GM-CSF expressed in HEK293 cells
Amino Acids:	18-141
Uniprot No.:	P01587
Molecular Weight:	14.1 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/μg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

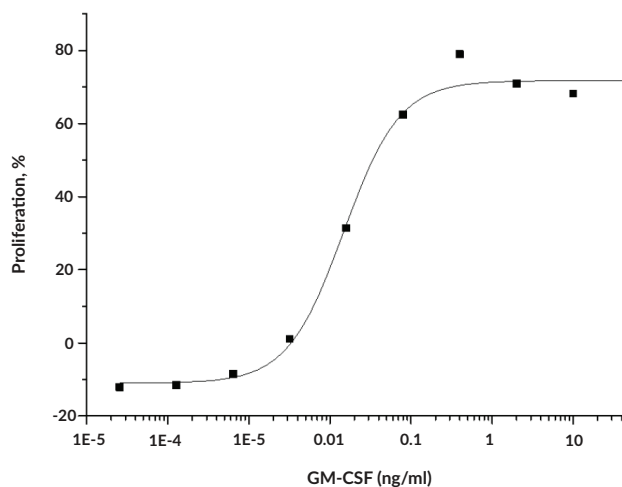
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: GM-CSF

SDS-PAGE Analysis of GM-CSF. This protein has a calculated molecular weight of 14.1 kDa. It has an apparent molecular weight of approximately 20.7 kDa by SDS-PAGE under reducing conditions due to apparent post-translational modifications.



Cell Proliferation Assay. GM-CSF activity measured using FDC-P1 cells. The EC_{50} value for this effect is typically 0.012-0.047 ng/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Granulocyte-macrophage colony-stimulating factor (GM-CSF) is a secreted glycoprotein encoded by the *Csf2* gene in mice that promotes the differentiation, proliferation, and function of a variety of progenitor or mature cells.^{1,2} GM-CSF exists as a secreted, disulfide-linked monomer and is composed of four α -helices and two anti-parallel β -sheets that contain numerous glycosylation sites.² GM-CSF production is induced in a variety of cells, including macrophages, T cells, neutrophils, and dendritic cells, by stimulation with pro-inflammatory cytokines, such as IL-1, TNF- α , or IL-12, and is decreased by cell stimulation with the anti-inflammatory cytokines IL-10 or IFN- γ .³ Binding of GM-CSF to the GM-CSF receptor, which is highly expressed on dendritic cell precursors, dendritic cells, monocytes, and macrophages, promotes cell differentiation, proliferation, and survival and enhances several immunological functions, including chemotaxis, cytokine signaling, phagocytosis, antigen presentation, and pathogen killing.^{1,4} GM-CSF-deficient mice exhibit increased accumulation of pulmonary surfactant and protein in the lung and have been used as a model of pulmonary alveolar proteinosis.⁵ Neutralization of GM-CSF with a monoclonal antibody decreases joint cartilage destruction and TNF- α and IL-1 β levels in a mouse model of collagen-induced arthritis.⁶ GM-CSF has been used to generate bone marrow- or peripheral blood monocyte-derived macrophages with a pro-inflammatory phenotype *in vitro*.^{3,7} Cayman's GM-CSF (mouse, recombinant) protein can be used for cell-based assay applications. This protein consists of 124 amino acids, has a calculated molecular weight of 14.1 kDa, and a predicted N-terminus of Ala18 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 20.7 kDa due to apparent post-translational modifications.

References

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4. Trapnell, B.C. and Whitsett, J.A. GM-CSF regulates pulmonary surfactant homeostasis and alveolar macrophage-mediated innate host defense. *Annu. Rev. Physiol.* **64**, 775-802 (2002).
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