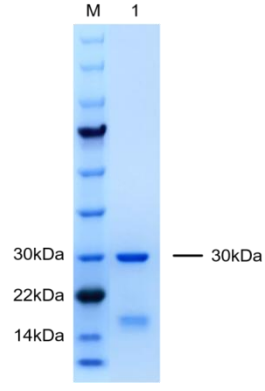
Mouse Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) Protein, Recombinant

1. For Sale

Product Name	Catalog #	Size
Mouse Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) Protein, Recombinant	P03G0016P-T2	10ug
		50ug
		500ug
		1mg

2. Product Description

Other Names	CSF2
Protein & NCBI Number	X03019, AAA37483.1
Host	E.coli
Express Region	Ala17-Lys141
Protein Sequence	APTRSPITVTRPWKHVEAIKEALNLLDDMPVTLNEEVEVVSNEFSFKKLTCVQT RLKIFEQGLRGNFTKLKGALNMTASYYQTYCPPTPETDCETQVTTYADFIDSLK TFLTDIPFECKKPVQK
Molecular Weight	The protein consists of 245 amino acids (including the fusion tag), with a predicted molecular weight of 27.9kDa. Due to glycosylation, and the actual molecular weight is 30kDa.
Fusion Tag	6×His-SUMO (N-terminus)
Purity	≥80% SDS-PAGE
Physical Property	Liquid
components	0.01M PBS+20% glycerol, sterile solution.
Storage & Stability	After aliquoting, the stability of the samples can be maintained for up to 6 months at -20°C to -80°C, avoiding repeated freeze-thaw cycles.
Applications	Antibody preparation, immunoassay (ELISA, WB), subcellular localization and interaction protein identification, etc.
Lead Time	5 to 10 business days; 2 to 3 days for stock products
Figure. SDS-PAGE	 Bis-Tris (MOPS) SDS-PAGE

3. Storage and Transportation

Transport at 2-8°C, product is stable for up to twelve months from date of receipt under sterile conditions at -20°C to -80°C.

4. Notes

This product is for research use only. Please wear laboratory attire and disposable gloves when handling.

5. Background

Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF), also known as Colony-Stimulating Factor 2 (CSF2), is a monomeric glycoprotein. Unlike Granulocyte Colony-Stimulating Factor (G-CSF), which specifically promotes the proliferation and maturation of neutrophils, GM-CSF affects a broader range of cell types, particularly macrophages and eosinophils.

High levels of GM-CSF have been detected in the joints of patients with rheumatoid arthritis, and targeting GM-CSF as a biological target can reduce inflammation or tissue damage. In critically ill patients, GM-CSF has been trialed as an immunosuppressive therapy, showing potential in restoring the function of monocytes and neutrophils.

The functions of GM-CSF include: Hematopoiesis and differentiation of bone marrow lineage cells; Development and maintenance of alveolar macrophages; Recruitment and differentiation of monocyte-derived dendritic cells (DCs), including the production of IL-23 and polarization of TH17 T cells; Maturation and antigen presentation by conventional DCs, such as CD103-expressing DCs in the skin and small intestine; Polarization of M1 macrophages, including the production of pro-inflammatory cytokines, phagocytosis, and antigen presentation; Priming and activation of neutrophils, including processes such as phagocytosis, oxidative bursts, and nitric oxide generation.

6. References

1) Gan Y et al. A GITRL-mTORC1-GM-CSF Positive Loop Promotes Pathogenic Th17 Response in Primary Sjögren Syndrome. Arthritis Rheumatol. 2024 Sep;76(9):1419-1430.

2) Ngo VL et al. Intestinal microbiota programming of alveolar macrophages influences severity of respiratory viral infection. Cell Host Microbe. 2024 Mar 13;32(3):335-348.

3) Wöhner M et al.Tissue niche occupancy determines the contribution of fetal- versus bone-marrow-derived macrophages to IgG effector functions. Cell Rep. 2024 Feb 27;43(2):113757.

4) Cantrell MA et al. Cloning, sequence, and expression of a human granulocyte/macrophage colony-stimulating factor. Proc Natl Acad Sci U S A. 1985 Sep;82(18):6250-4.