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# Recombinant Mouse GM-CSF Protein

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| **Catalog Number:** | 670101, 670102 |
| **Size:** | 20 µg, 100 µg |
| **Target Name:** | GM-CSF, GMCSF, CSF Protein, |
| **Regulatory Status:** | RUO |

## PRODUCT DETAILS

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| **Application:** | Bioassay |
| **Format:** | Lyophilized from sterile PBS, pH 7.4. |
| **Expression Host:** | HEK293 |
| **Species:** | Mouse |
| **accession number:** | P01587 |
| **Sources:** | A DNA sequence encoding the mouse CSF2 (P01587) (Ala 18-Lys141) was expressed. |
| **Molecular Weight:** | The recombinant mouse CSF2 consists of 124 amino acids and predicts a molecular mass of 14.1 KDa. It migrates as an approximately 20.7 KDa band in SDS-PAGE under reducing conditions. |
| **Affinity Tag:** | None |
| **Purity:** | > 95 % as determined by SDS-PAGE |
| **Endotoxin level:** | < 1.0 EU per µg protein |
| **Protein Concentration:** | Lyophilized |
| **Storage and Handling:** | Proteins are stable for up to twelve months from date of receipt at -20℃ to -80℃. Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. |

## BACKGROUND INFORMATION

Mouse granulocyte-macrophage colony-stimulating factor (GM-CSF, encoded by Csf2) is a pleiotropic cytokine that regulates the differentiation, survival, and activation of myeloid lineage cells, particularly granulocytes, monocytes, macrophages, and dendritic cells. It is produced by activated T cells, macrophages, endothelial cells, and fibroblasts during inflammatory responses, and functions as a key mediator linking innate and adaptive immunity.

Structurally, mouse GM-CSF is a 127-amino-acid glycoprotein that adopts a four-helix bundle architecture stabilized by disulfide bonds and glycosylation, which are important for receptor binding and biological activity.

Its primary receptor is the heterodimeric GM-CSF receptor composed of a ligand-specific alpha chain (CSF2RA) and a shared beta common signaling chain (CSF2RB), which is also used by IL-3 and IL-5.

GM-CSF plays a dual role in physiology and disease: it supports host defense by enhancing macrophage and neutrophil function, but excessive signaling contributes to inflammatory and autoimmune disorders such as rheumatoid arthritis, multiple sclerosis, and

pulmonary alveolar proteinosis.

Therapeutically, GM-CSF or its pathway is targeted in both directions: recombinant GM-CSF can be used to enhance myeloid recovery after chemotherapy, while monoclonal antibodies and receptor inhibitors are being developed to suppress pathological inflammation in cancer and autoimmune disease.

Downstream signaling of GM-CSF receptor activation includes JAK2/STAT5, PI3K/AKT, and MAPK pathways, which collectively regulate cell proliferation, survival, and inflammatory gene expression, making the axis a key modulatory node in immune homeostasis.

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