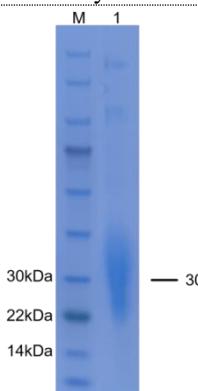


Human Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) Protein, Recombinant

1. For Sale

| Product Name | Catalog # | Size |
|--|--------------|-------|
| Human Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) Protein, Recombinant | P01G0016E-T3 | 10ug |
| | | 50ug |
| | | 500ug |
| | | 1mg |

2. Product Description

| | |
|-----------------------|---|
| Other Names | CSF2 |
| Protein & NCBI Number | M11220, P04141 |
| Host | 293T |
| Express Region | Ala18-Glu144 |
| Protein Sequence | APARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTCLQTRLELYKQGLRGSLTKKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPFDCWEPVQE |
| Molecular Weight | The protein consists of 161 amino acids (including the fusion tag), with a predicted molecular weight of 18.1kDa. Due to glycosylation, the actual molecular weight ranges from 22 to 40 kDa. |
| Fusion Tag | 6×His (C-terminus) |
| Purity | ≥95% 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 |  <p>30kDa 22kDa 14kDa</p> <p>— 30kDa</p> <p>Bis-Tris (MOPS) SDS-PAGE</p> |

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

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- 2) Wicks, I., Roberts, A. Targeting GM-CSF in inflammatory diseases. *Nat Rev Rheumatol* 12, 37–48 (2016).
- 3) Jiang N, Tian Z, Tang J, Ou R, Xu Y. Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF) Downregulates the Expression of Protumor Factors Cyclooxygenase-2 and Inducible Nitric Oxide Synthase in a GM-CSF Receptor-Independent Manner in Cervical Cancer Cells. *Mediators Inflamm.* 2015;2015:601604.
- 4) Besana, C. et al. (1994). Intensive chemotherapy with recombinant-human granulocyte-macrophage colony stimulating factor (r-hu-gm-csf) for small cell lung cancer (sclc): a pilot study. In: Banzet, P., Holland, J.F., Khayat, D., Weil, M. (eds) *Cancer Treatment An Update*. Springer, Paris.
- 5) Mark R. Walter, William J. Cook, Steven E. Ealick, Tattanahalli L. Nagabhushan, Paul P. Trotta, Charles E. Bugg. Three-dimensional structure of recombinant human granulocyte-macrophage colony-stimulating factor, *Journal of Molecular Biology*, Volume 224, Issue 4, 1992