Technical Data Sheet

Recombinant human M-CSF protein

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Lot Specific Information

Lot Number: **Lot Specific***

Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Information

Catalog Number:	**RP079**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Differentiation of iPSC-derived macrophages Culture of bone marrow-derived macrophages Maintenance of macrophages Polarization of anti-inflammatory or M2 macrophage Differentiation of alveolar macrophages to study fibrotic disorders Osteoclast culture
Formulation:	Lyophilized, white powder
Endotoxin:	≤0.5 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in 10 mM HCl (Reconstitution Buffer A) at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	36 kDa (dimer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human M-CSF protein (macrophage colony-stimulating factor), also known as colony-stimulating factor-1 (CSF-1), is a 36 kDa secreted hematopoietic growth factor with a dimeric structure of two covalently linked four-helix bundles, expressed as three major isoforms that share a 149-amino-acid N-terminal region required for activity. M-CSF binds the receptor tyrosine kinase CSF-1R on monocytes, macrophages, microglia, osteoclasts and dendritic cells, activating PI3K-AKT and AMPK signaling to regulate the survival, proliferation, renewal and differentiation of the monocyte-macrophage lineage and other myeloid cells. Elevated M-CSF is associated with inflammatory and tumor-associated immunosuppressive conditions, making the M-CSF/CSF-1R axis a target of interest in glioma and stroke. In culture, recombinant M-CSF is used to differentiate hiPSC-derived macrophages, to maintain monocytes in hematopoietic stem cell culture, to direct myeloid cells with IL-3 toward phagocytic macrophages, to induce PU.1-driven myeloid fate and an anti-inflammatory M2 phenotype, and to generate monocyte-derived macrophages modeling alveolar macrophages in fibrosis, making it a key reagent for macrophage and myeloid biology research. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. A GMP-grade version of this protein is available for cell and gene therapy manufacturing. Contact us at customerservice@bioxcell.com for details. Species reactivity: human. Species similarity: mouse - 74%, rat - 54%, bovine - 66%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**
It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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