Recombinant Mouse M-CSF (carrier-free)

Catalog# / Size	576402 / 10 µg 576404 / 25 µg 576406 / 100 µg 576408 / 500 µg
Regulatory Status	RUO
Other Names	CSF1, CSF-1, MCSF
Description	M-CSF was first characterized as a glycoprotein that induces monocyte and macrophage colony formation from precursors in murine bone marrow cultures. M-CSF binds CD14+ monocytes and promotes the survival/proliferation of peripheral blood monocytes. In addition, M-CSF enhances inducible monocyte functions including phagocytic activity, microbial killing, and cytotoxicity for tumor cells as well as induces the synthesis of inflammatory cytokines such as IL-1, TNFα, and IFNγ in monocytes. Multiple CSF1 mRNA species have been described that arise from alternative splicing in exon 6 and the alternative use of the 3' end of exons 9 or 10. As a result, two distinct CSF1 protein products are encoded by these transcripts: a cell-surface or membrane-bound form of CSF1 (mCSF1) and a soluble form (sCSF1). Uterine sCSF1 is highly increased during pregnancy. On the contrary, uterine mCSF1 remains low during pregnancy. High levels of M-CSF have been associated to different pathologies such as pulmonary fibrosis and atherosclerosis. M-CSF binds to its receptor M-CSFR, and this receptor is shared by a second ligand, IL-34. Mouse M-CSF and IL-34 exhibit cross-species specificity, both bind to the human and mouse M-CSF receptors. IL-34 can regulate myeloid development and substitute for CSF-1 *in vivo*. IL-34 has overlapping but not identical biological activities as M-CSF.

Product Details

Source	Mouse M-CSF, amino acids Lys33-Glu262 (Accession# NM_001113530.1) was expressed in 293E cells.
Molecular Mass	The 251 amino acid recombinant protein has a predicted molecular mass of approximately 28.2 kD. The DTT-reduced and non-reduced protein migrate at approximately 50 kD and 100 kD respectively by SDS-PAGE. The N-terminal contains a His9-(SGGG)2-IEGR-tag.
Purity	>98%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in PBS.
Endotoxin Level	Less than 0.01 ng per µg cytokine as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. **Avoid repeated freeze/thaw cycles.**
Activity	ED_{50} =2 - 6 ng/ml, corresponding to a specific activity of 1.6 - 5 x 10^5 units/mg, as determined by M-NFS60 cell proliferation induced by mouse M-CSF in a dose dependent manner.
Application	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee. If you have any

concerns, contact us at tech@biolegend.com.

Product Citations

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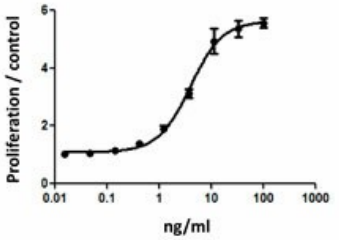
Antigen Details

Structure	Disulfide-linked glycosylated homodimer.
Distribution	M-CSF is broadly expressed in adult mouse tissues. M-CSF is released by fibroblasts, breast cancer cell lines, alveolar macrophages, stromal bone marrow cells, endothelial cells, and mesenchymal cells.
Function	M-CSF is the key regulator of the survival, proliferation, and differentiation of mononuclear phagocytes and plays a central role in the regulation of osteoclastogenesis. CSF-1 also regulates the development of Paneth cells, Langerhans cells, lamina propria dendritic cells, and microglia.
Interaction	Monocytes, macrophages, mononuclear phagocyte precursors, microglia, proliferating smooth

	muscle cells, umbilical vein endothelial cells, and breast cancer cell lines.
Ligand/Receptor	M-CSFR or CSF1R (CD115)
Cell Type	Hematopoietic stem and progenitors, Embryonic Stem Cells
Biology Area	Cell Biology, Cell Proliferation and Viability, Immunology, Stem Cells
Molecular Family	Growth Factors, Cytokines/Chemokines
Antigen References	1. Kawasaki ES, *et al.* 1985. *Science* 230:291. 2. Wei S, *et al.* 2010. *J. Leukocyte Biol.* 88:495. 3. MacDonald KP, *et al.* 2010. *Blood* 116:3955. 4. Hodge JM, *et al.* 2011. *Plos One* 6:e21462. 5. Morandi *et al.* 2011. *Plos One* 6:e27450. 6. Erblich B, *et al.* 2011. *Plos One* 6:e26317.
Gene ID	12977

Product Data



M-NFS-60 cell proliferation induced by mouse M-CSF.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587