

M-CSF, human recombinant protein

Information

Gene ID	1435
Accession #	P09603-3
Alternate Names	CSF-1, MGI-IM
Source	<i>Escherichia coli</i> .
M.Wt	Approximately 36.8 kDa, a disulfide-linked homodimer consisting of two 158 amino acid polypeptide chains.
AA Sequence	EEVSEYCSHM IGSGHLQSLQ RLIDSQMETS CQITFEFVDQ EQLKDPVCYL KKAFLLVQDI MEDTMRFRDN TPNAIAIVQL QELSLRLKSC FTKDYEEHDK ACVRTFYETP LQLEKVKNV FNETKNLLDK DWNIFSKNCN NSFAECSSQG HERQSEGS
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. - 12 months from date of receipt, -20 to -70 °C as supplied. - 1 month, 2 to 8 °C under sterile conditions after reconstitution. - 3 months, -20 to -70 °C under sterile conditions after reconstitution.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS, pH7.4.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water to a concentration of 0.1 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
Biological Activity	Fully biologically active when compared to standard. The ED ₅₀ as determined by a cell proliferation assay using murine M-NFS-60 cells is less than 1 ng/ml, corresponding to a specific activity of > 1.0 × 10 ⁶ IU/mg.
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	10 µg	100 µg	500 µg
M-CSF, human recombinant protein	10 µg	100 µg	500 µg

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Quality Control

Purity	> 95 % by SDS-PAGE and HPLC analyses.
Endotoxin	Less than 1 EU/μg of rHuM-CSF as determined by LAL method.

Description

Macrophage Colony Stimulating Factor (M-CSF), also named CSF-1, is a hematopoietic growth factor that is involved in the proliferation, differentiation, and survival of monocytes, macrophages, and bone marrow progenitor cells. It is produced by osteoblasts (as a result of endocrine stimulation by parathyroid hormone) exerts paracrine effects on osteoclasts and can interact with CSF1R. M-CSF is a four α -helical bundle cytokine and its active form is found extracellularly as a disulfide-linked homodimer. Four transcript variants encoding three different isoforms have been reported for M-CSF gene. Although forms may vary, all of them contain the N-terminal 150 a.a. portion that is necessary and sufficient for interaction with the receptor. The first 223 a.a. of mature human M-CSF shares 88 %, 86 %, 81 % and 74 % sequence identity with corresponding regions of dog, cow, mouse and rat M-CSF, respectively. Human M-CSF is active in the mouse, but mouse M-CSF is reported to be species-specific.

Reference

1. Cosman D, Wignall J, Anderson D, et al. 1988. Behring Inst Mitt: 15-26.
2. Metcalf D, Willson T, Rossner M, et al. 1994. Growth Factors, 11: 145-52.
3. Hidaka T, Fujimura M, Nakashima A, et al. 2002. Jpn J Cancer Res, 93: 426-35.
4. Kubota Y, Takubo K, Shimizu T, et al. 2009. J Exp Med, 206: 1089-102.

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