

## Recombinant Mouse M-CSF

### Information

|                                |                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene ID</b>                 |                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Accession #</b>             | Q3U4F9                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Alternate Names</b>         | CSF-1, MGI-IM                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Source</b>                  | <i>Escherichia coli</i> .                                                                                                                                                                                                                                                                                                                                                            |
| <b>M.Wt</b>                    | Approximately 52.0 kDa, a disulfide-linked homodimer consisting of two 230 amino acid polypeptide chains.                                                                                                                                                                                                                                                                            |
| <b>AA Sequence</b>             | KEVSEHCSHM IGNGHLKVLQ QLIDSQMETS CQIAFEFVDQ EQLDDPVCYL<br>KKAFFLVQDI IDETMRFKDN TPNANATERL QELSNNLNSC FTKDYEEQNK<br>ACVRTFHETP LQLEKIKNF FNETKNLLEK DWNIFTKNCN NSFACSSRD<br>VVTKPDCNCL YPKATPSSDP ASASPHQPPA PSMAPLAGLA WDDSQRTEGS<br>SLLPSELPLR IEDPGSAKQR PPRSTCQTLE                                                                                                               |
| <b>Appearance</b>              | Sterile Filtered White lyophilized (freeze-dried) powder.                                                                                                                                                                                                                                                                                                                            |
| <b>Stability &amp; Storage</b> | Use a manual defrost freezer and avoid repeated freeze-thaw cycles.<br>- 12 months from date of receipt, -20 to -70 °C as supplied.<br>- 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>- 3 months, -20 to -70 °C under sterile conditions after reconstitution.                                                                                               |
| <b>Formulation</b>             | Lyophilized from a 0.2 µm filtered solution in 20 mM Tris, 500 mM NaCl, pH 7.4.                                                                                                                                                                                                                                                                                                      |
| <b>Reconstitution</b>          | We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions. |
| <b>Biological Activity</b>     | Fully biologically active when compared to standard. The ED <sub>50</sub> as determined by a cell proliferation assay using murine M-NFS-60 cells is less than 2 ng/ml, corresponding to a specific activity of > 5.0 × 10 <sup>5</sup> IU/mg.                                                                                                                                       |
| <b>Shipping Condition</b>      | Gel pack.                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Handling</b>                | Centrifuge the vial prior to opening.                                                                                                                                                                                                                                                                                                                                                |
| <b>Usage</b>                   | For Research Use Only! Not to be used in humans.                                                                                                                                                                                                                                                                                                                                     |

### Components and Storage

| Components              | 10 µg | 100 µg | 500 µg |
|-------------------------|-------|--------|--------|
| Recombinant Mouse M-CSF | 10 µg | 100 µg | 500 µg |

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.

## Quality Control

|           |                                                            |
|-----------|------------------------------------------------------------|
| Purity    | > 95 % by SDS-PAGE and HPLC analyses.                      |
| Endotoxin | Less than 1 EU/μg of rMuM-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  $\alpha$ -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 229 a.a. of mature mouse M-CSF shares 87 %, 83 %, 82 % and 81 % sequence identity with corresponding regions of rat, dog, cow and human 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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