

Recombinant human M-CSF protein (Qk075)



Type: Stem cells

Available for purchase: Unit Size (µg): 25, 50, 100, 500, 1000

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Product Information

Macrophage colony-stimulating factor (M-CSF) is a cytokine that regulates the survival, proliferation, differentiation, and functional activation of monocytes, such as macrophages and dendritic cells. M-CSF has been used *in vitro* for the differentiation of human induced pluripotent stem cell (iPSC)-derived macrophages as well as the maintenance and development of monocytes in [hematopoietic](#) stem cell culture. M-CSF has also been used to influence macrophage polarization towards an anti-inflammatory or M2 macrophage phenotype.

Qkine M-CSF is a highly bioactive, [animal origin-free](#) (AOF), carrier protein-free 36.8 kDa recombinant protein with exceptional lot-to-lot consistency.

This protein is also available as GMP compliant [Cell Therapy Grade](#), to enquire email ryan.weber@matriq.com.

Alternative protein names

Colony-stimulating factor-1, CSF-1, CSF1, macrophage colony stimulating factor, macrophage colony-stimulating factor 1, M-CSF, MCSF, Lanimostim, Flanimostim, MGC31930, MCSF, M CSF, Qk75

Molecular weight

36 kDa (dimer)

Protein Uniprot number

High purity human M-CSF protein (Uniprot: P09603)

Species reactivity

- human
- species similarity:
- mouse - 74%
- rat - 54%
- bovine - 66%

Product Information

- >98%, by SDS-PAGE quantitative densitometry
- Expressed in *E. coli*
- Animal origin-free (AOF) and carrier protein-free
- Manufactured in our Cambridge, UK laboratories
- Lyophilized from acetonitrile, TFA

Reconstitution instructions

- Resuspend in 10 mM HCl (Reconstitution solution A) at >50 µg/ml

Featured 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

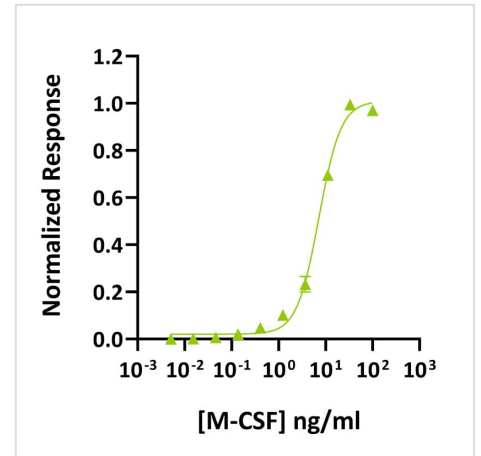
Further quality assays

- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

Scientific Information

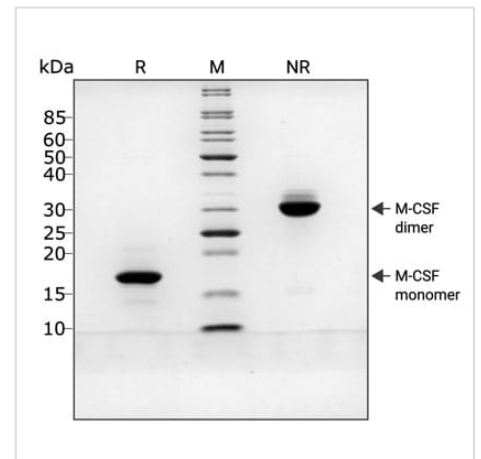
Bioactivity

M-CSF activity was determined using the proliferation of NFS-60 mouse myeloid leukemia cells. Cells were treated in triplicate with a serial dilution of M-CSF for 48 hours. Cell viability was measured using the CellTiter-Glo (Promega) luminescence assay and normalized. $EC_{50} = 196 \text{ pM}$ (7.2 ng/ml). Data from Qk075 lot #204507.



Purity

Recombinant M-CSF migrates as a major band at approximately 36 kDa (dimer) in non-reducing (NR) conditions. Upon reduction (R), only the monomer band at approximately 18 kDa is visible. No contaminating protein bands are present. The purified recombinant protein ($3 \mu\text{g}$) was resolved using 15% w/v SDS-PAGE in reduced (+ β -mercaptoethanol, R) and non-reduced (NR) conditions and stained with Coomassie Brilliant Blue R250. Data from Qk075 batch #204507.



Original product page: <https://ryan.calliope-alpha.ts.net/product/recombinant-human-m-csf-protein-qk075/>

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