

## Product Information

### HumanKine™ Macrophage-Colony Stimulating Factor, human recombinant, expressed in HEK 293 cells

Catalog Number **H6916**  
Storage Temperature  $-20^{\circ}\text{C}$

Synonyms: M-CSF, CSF-1

#### Product Description

HumanKine™ M-CSF is expressed as a glycosylated 35–40 kDa disulfide linked homodimer in human 293 cells. Production in human 293 cells offers authentic glycosylation. Glycosylation contributes to stability in cell growth media and other applications.

Four distinct colony-stimulating factors (CSFs) that promote survival, proliferation, and differentiation of bone marrow precursor cells have been well characterized: granulocyte macrophage-CSF (GM-CSF), granulocyte-CSF (G-CSF), macrophage-CSF (M-CSF), and Interleukin-3 (IL-3, Multi-CSF).<sup>1,2</sup> Both GM-CSF and IL-3 are multipotential growth factors, stimulating proliferation of progenitor cells from more than one hematopoietic lineage. In contrast, G-CSF and M-CSF are lineage restricted hematopoietic growth factors, stimulating final mitotic divisions and the terminal cellular maturation of the partially differentiated hematopoietic progenitors.

Macrophage CSF (M-CSF) is produced by monocytes, fibroblasts, and endothelial cells. M-CSF stimulates the formation of macrophage colonies,<sup>3</sup> enhances antibody-dependent, cell-mediated cytotoxicity by monocytes and macrophages,<sup>4</sup> and inhibits bone resorption by osteoclasts.<sup>5</sup>

This product is lyophilized from a PBS solution.

ED<sub>50</sub>:  $\leq 8.0$  ng/mL

The specific activity was determined by the dose-dependent stimulation of the proliferation of murine M-NFS-60 cells (mouse myeloid leukemia indicator cell line).

Purity:  $\geq 95\%$  (SDS-PAGE)

Endotoxin level:  $\leq 1$  EU/ $\mu\text{g}$

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

Briefly centrifuge the vial before opening. It is recommended to reconstitute the protein in sterile PBS containing 0.1% endotoxin-free recombinant human serum albumin.

#### Storage/Stability

Store the product at  $-20^{\circ}\text{C}$ . The lyophilized product remains active for one year at  $-20^{\circ}\text{C}$ .

Upon reconstitution, the cytokine can be stored at  $2-8^{\circ}\text{C}$  for short term only, or at  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  in aliquots for long term. Avoid repeated freeze-thaw cycles.

#### References

1. Mazur, E.M., and Cohen, J.L., Clin. Pharmacol. Ther., **46**, 250 (1989).
2. Morstyn, G., and Burgess, A.W., Cancer Res., **48**, 5624 (1988).
3. Metcalf, D., Blood, **67**, 257 (1986).
4. Mufson, R.A., et al., Cell. Immunol., **119**, 182 (1989).
5. Hattersley, G., et al., J. Cell Physiol., **137**, 199 (1988).

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