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1. Description

Products Human M-CSF, premium grade.
Recombinant human macrophage-colony stimulating factor.

Content in µg	Order no.
10	130-096-485
25	130-096-489
100	130-096-492
1000	130-096-493

Biological activity The ED₅₀ is ≤0.05 ng/mL corresponding to an activity of ≥2×10⁷ IU/mg. Lot-specific activities are stated in the Certificate of Analysis (www.miltenyibiotec.com/certificates).

▲ **Note:** The ED₅₀ is determined by proliferation assay using mouse M-NFS-60 cells.¹ The proliferation assay was calibrated with the international standard for human M-CSF (NIBSC code 89/512) provided by the WHO/National Institute for Biological Standards and Control.

Primary structure Two identical, non-glycosylated polypeptide chains (158 amino acid residues) without N-terminal methionine linked by a disulfide bond.

Molecular mass 36.8 kDa (dimer).

Source Produced in *E. coli*.

Product format Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer Mannitol and trehalose.

Purity >97% as determined by SDS-PAGE analysis.

Endotoxin level Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage Lyophilized Human M-CSF, premium grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution It is recommended to reconstitute lyophilized Human M-CSF, premium grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

Macrophage-colony stimulating factor (M-CSF), a four α-helical bundle cytokine, is a potent hematopoietic regulator. It is primarily produced by monocytes, granulocytes, endothelial cells, and fibroblasts. The main function of M-CSF is the regulation of proliferation, differentiation, and survival of monocytes, macrophages and their hematopoietic progenitors. Furthermore, M-CSF has been shown to play an important role in immunological defense, bone metabolism, fertility, and pregnancy.

1.2 Applications

Human M-CSF can be used for a variety of applications, including:

- Survival studies and apoptosis assays, for example, using peripheral blood monocytes.
- Differentiation of macrophages from peripheral blood monocytes.
- Differentiation of osteoclasts from CD14⁺ monocytes.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

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