

GM-CSF

Granulocyte Macrophage-Colony Stimulating Factor

human, recombinant, *E. coli*

Cat. No.	Amount
PR-436	10 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -20°C

Avoid freeze / thaw cycles

Form

Lyophilized.

Solubility

It is recommended to reconstitute the lyophilized GM-CSF in sterile bidest H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Activity

EC₅₀: < 0.1 ng/ml corresponding to a specific activity of 1.11 x 10⁷ Units/mg, determined by the dose-dependant stimulation of the proliferation of human TF-1 cells (human erythroleukemic indicator cell line).

GM-CSF was lyophilized against 2 mM sodium phosphate buffer, pH 7.4.

Endotoxin

Less than 0.1 ng/µg (IEU/µg) of GM-CSF.

Purity

≥ 98% by SDS-PAGE, RP-HPLC, and FPLC.

Description

GM-CSF is produced in response to a number of inflammatory mediators by mesenchymal cells present in the hemopoietic environment and at peripheral sites of inflammation. GM-CSF is able to stimulate the production of neutrophilic granulocytes, macrophages, and mixed granulocyte-macrophage colonies from bone marrow cells and can stimulate the formation of eosinophil colonies from fetal liver progenitor cells. GM-CSF can also stimulate some functional activities in mature granulocytes and macrophages. GM-CSF receptors shows significant homologies with other receptors for hematopoietic growth factors, including IL2-β, IL-3 (cat.# PR-462), IL-6 (cat.# PR-466 or PR-467), IL-7 (cat.# PR-468), EPO (cat.# PR-402 or PR-403), and the Prolactin receptors.

Recombinant Human GM-CSF produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 127 amino acids and having a molecular mass of 14.477 kDa.

Recombinant GM-CSF is purified by proprietary chromatographic techniques.

Selected References:

- Comalada *et al.* (2005) Correction: Macrophage colony-stimulating factor, granulocyte-macrophage colony-stimulating factor, or IL-3-dependent survival of macrophages, but not proliferation, requires the expression of p21(Waf1) through the phosphatidylinositol 3-kinase/Akt pathway *Eur. J. Immunol.* **35**:666.
- Loizel *et al.* (2005) Effect of granulocyte-macrophage colony-stimulating factor on post-weaning multisystemic wasting syndrome in porcine circovirus type-2-transfected piglets. *Int. J. Exp. Pathol.* **86**:33.
- Ha *et al.* (2005) Role of granulocyte-macrophage colony-stimulating factor in preventing apoptosis and improving functional outcome in experimental spinal cord contusion injury. *J. Neurosurg. Spine.* **2**:55.
- Yogesha S.D. and Khapli S.M. (2005) Interleukin-3 and granulocytemacrophage colony-stimulating factor inhibits tumor necrosis factorα-induced osteoclast differentiation by down-regulation of TNFR1 and TNFR2 expression. *J. Biol. Chem.* **14**; [Epub ahead of print]
- Lima *et al.* (2005) A DNA vaccine encoding genetic fusions of carcinoembryonic antigen (CEA) and granulocyte/macrophage colony-stimulating factor (GM-CSF). *Vaccine* **23**:1273.
- Alenzi F.Q. (2004) Induction of apoptosis in myeloid progenitors by granulocyte-macrophage colony-stimulating factor. *Br. J. Biomed. Sci.* **61**:200.