

Human G-CSF Recombinant Protein Carrier-Free

Catalog Number: 34-8523

Also Known As: Granulocyte Colony Stimulating Factor

For Research Use Only. Not for use in diagnostic procedures.

Product Information

Contents: Human G-CSF Recombinant Protein Carrier-Free

REF **Catalog Number:** 34-8523

Handling Conditions: For best recovery, quick-spin vial prior to opening. Use in sterile environment.

Source: E. coli-expressed, non-glycosylated protein consisting of amino acids Thr31-Pro204 of mature human G-CSF accession # NM_172219

Molecular Mass: 21 kDa

Purity: Greater than or equal to 98%, as determined by SDS-PAGE

Endotoxin Level: Less than 0.01 ng/ug cytokine as determined by the LAL assay.

Bioactivity: The ED₅₀ measured in a NFS-60 proliferation assay is typically 45 pg/mL, corresponding to a specific activity of approximately 2 x10⁷ Units/mg.

Formulation: Sterile liquid; 10mM Na acetate, 0.4M NaCl, pH 4.0, 0.22 um filtered.

Temperature Limitation: Store at less than or equal to -70°C.

LOT **Batch Code:** Refer to Vial

Use By: Refer to Vial

Description

Granulocyte Colony Stimulating Factor (G-CSF) is a member of the IL-6 cytokine family. It is 207 amino acids long with one glycosylation site and two disulfide bonds. G-CSF can be expressed by many different cell types including fibroblasts, endothelial cells, monocytes, macrophages and bone marrow stromal cells. Production of G-CSF is upregulated in response to infection and inflammatory mediators such as IL-1 β , TNF α , and LPS. IL-17 has also been shown to regulate the production of G-CSF. The receptor for G-CSF is structurally similar to type I cytokine receptors. The receptor is expressed on both hematopoietic and non-hematopoietic cells. Within the hematopoietic cells, G-CSF receptor is expressed predominantly on cells of myeloid origin, including granulocytes and monocytes but not on erythrocytes, lymphocytes or eosinophils. G-CSF receptor activates the Jak/STAT signaling pathway. G-CSF activates and mobilizes granulocytic precursors from the bone marrow and supports the proliferation, activation and differentiation of neutrophils in the blood.

Applications Reported

Recombinant human G-CSF is biologically active and can promote proliferation of mouse NFS-60 cells in culture.

Applications Tested

This reagent has been tested in bioassays using the mouse cell line NFS-60. The ED₅₀ measured in a NFS-60 proliferation assay is typically 45 pg/ml, corresponding to a specific activity of approximately 2 x10⁷ Units/mg.

References

Panopoulos AD, Watowich SS. Granulocyte colony-stimulating factor: molecular mechanisms of action during steady state and 'emergency' hematopoiesis. *Cytokine*. 2008 Jun;42(3):277-88.

Petit I, Szyper-Kravitz M, Nagler A, Lahav M, Peled A, Habler L, Ponomaryov T, Taichman RS, Arenzana-Seisdedos F, Fujii N, Sandbank J, Zipori D, Lapidot T. G-CSF induces stem cell mobilization by decreasing bone marrow SDF-1 and up-regulating CXCR4. *Nat Immunol*. 2002 Jul;3(7):687-94.

Metcalf, D. The granulocyte-macrophage colony-stimulating factors. *Science*. 1985 Jul 5;229(4708):16-22.

Related Products

34-8522 Mouse G-CSF Recombinant Protein Carrier-Free