

APERB

# **Recombinant Human G-CSF**

# Information

Gene ID	1440		
Accession #	P09919		
Alternate Names	Granulocyte Colony Stimulating Factor, CSF-3, MGI-1G, GM-CSF beta, Pluripoietin		
Source	Escherichia coli.		
M.Wt	Approximately 18.7 kDa, a single non-glycosylated polypeptide chain containing 174 amino acids.		
AA Sequence	TPLGPASSLP QSFLLKCLEQ VRKIQGDGAA LQEKLCATYK LCHPEELVLL GHSLGIPWAP LSSCPSQALQ LAGCLSQLHS GLFLYQGLLQ ALEGISPELG PTLDTLQLDV ADFATTIWQQ MEELGMAPAL QPTQGAMPAF ASAFQRRAGG VLVASHLQSF LEVSYRVLRH LAQP		
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.		
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. - 12 months from date of receipt, -20 to -70°C as supplied. - 1 month, 2 to 8°C under sterile conditions after reconstitution. - 3 months, -20 to -70°C under sterile conditions after reconstitution.		
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in 10mM sodium acetate buffer, containing 5% trehalose, pH 4.0.		
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq$ -20°C. Further dilutions should be made in appropriate buffered solutions.		
Biological Activity	Fully biologically active when compared to standard. The ED <sub>50</sub> as determined by a cell proliferation assay using murine NFS-60 cells is less than 0.1 ng/ml, corresponding to a specific activity of > $1.0 \times 10^7$ IU/mg.		
Shipping Condition	Gel pack.		
Handling	Centrifuge the vial prior to opening.		
Usage	For Research Use Only! Not to be used in humans.		

## Components and Storage

Components and Storage	Browner		
Components	10 µg	100 µg	500 µg
Recombinant Human G-CSF	10 µg	100 µg	500 µg

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- 3 months, -20 to -70°C under sterile conditions after reconstitution.

### Quality Control

Purity

Endotoxin

>98% by SDS-PAGE and HPLC analyses.

Less than 1 EU/µg of rHuG-CSF as determined by LAL method.

### Description

Granulocyte colony stimulating factor (G-CSF) is a pleiotropic cytokine. It is mainly produced by monocytes and macrophages upon activation by endotoxin, TNF-α and IFN-γ. Besides, many other cell types can secreted this protein after LPS, IL-1 or TNF-α activation, which are fibroblasts, endothelial cells, astrocytes and bone marrow stromal cells. Various carcinoma cell lines and myeloblastic leukemia cells can express G-CSF constitutively. G-CSF is cytokine that acts in hematopoiesis by controlling the production, differentiation, and function of 2 related white cell populations of the blood, the granulocytes and the monocytes-macrophages. In addition it may function in some adhesion or recognition events at the cell surface. In humans, two distinct cDNA clones for G-CSF, encoding 207 and 204 amino acid (a.a.) precursor proteins, have been isolated. Both proteins have a 30 a.a. signal peptide and have identical amino acid sequences except for a three a.a. insertion (deletion) at the 35th a.a. residue from the N-terminus of the mature protein. Human G-CSF is 73 % identical at the amino acid level to murine G-CSF and the two proteins show species cross-reactivity.

#### Reference

- 1. Scarffe JHandKamthan A. 1990. Cancer Surv, 9: 115-30.
- 2. Fattorini L, Xiao Y, Li B, et al. 1994. J Med Microbiol, 40: 129-33.
- 3. Tsavaris N, Kosmas C, Gouveris P, et al. 2004. Med Sci Monit, 10: PI24-8.
- 4. Shochat E, Rom-Kedar V, Segel LA. 2007. Bull Math Biol, 69: 2299-338.
- 5. Cornish AL, Campbell IK, McKenzie BS, et al. 2009. Nat Rev Rheumatol, 5: 554-9.

