G-CSF Protein, Human (167a.a)

Cat. No.:	HY-P7015
Synonyms:	rHuG-CSF; CSF-3; MGI-1G; Pluripoietin; Molgramostin; Sargramostim
Species:	Human
Source:	E. coli
Accession:	Q8N4W3 (T27-P200)/P09919-2 (T31-P204)
Gene ID:	1440
Molecular Weight:	Approximately 18.8 kDa

PROPERTIES

AA Sequence	T P L G P A S S L P Q S F L L K C L E Q V R K I Q G D G A A L Q E K L C A T Y K L C H P E E L V L L G H S L G I P W A P L S S C P S Q A L Q L A G C L S Q L H S G L F L Y Q G L L Q A L E G I S P E L G P T L D T L Q L D V A D F A T T I W Q Q M E E L G M A P A L Q P T Q G A M P A F A S A F Q R R A G G V L V A S H L Q S F L E V S Y R V L R H L A Q P
Biological Activity	The ED_{50} is <0.1 ng/mL as measured by M-NFS-60 cells, corresponding to a specific activity of >1.0 × 10^7 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against 25 mM Tris, pH 8.0 or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<0.2 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Granulocyte Colony Stimulating Factor (G-CSF) is a cytokine that normally acts in the bone marrow microenvironment to stimulate blood cell formation. It selectively promotes growth and maturation of neutrophil progenitor cells. Granulocyte Colony Stimulating Factor receptors are present on precursor cells in the bone marrow. By binding to these receptors, Granulocyte Colony Stimulating Factor initiates proliferation and differentiation into mature granulocytes, and also stimulates bone marrow cell release into the circulation. In addition to growth promotion, Granulocyte Colony Stimulating

Factor also effects phagocytosis, motility, bactericidal activity and surface molecule expression of neutrophils and monocytes[1][2]. G-CSF production is induced by several inflammatory stimuli that become rapidly elevated during infection such as interleukin-1β (IL-1β), tumor necrosis factor-alpha (TNFα) and lipopolysaccaride (LPS). Therefore, pathogen-mediated activation of host pattern recognition receptors via LPS, and the host cytokine response to infection, serve to induce circulating levels of G-CSF[3].

REFERENCES

[1]. Demetri GD, et al. Granulocyte Colony Stimulating Factor and its receptor. Blood. 1991 Dec 1;78(11):2791-808.

[2]. Shah J, et al. The clinical use of granulocyte-colony stimulating factor. Br J Hosp Med (Lond). 2014 Feb;75(2):C29-32.

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

Caution: Product has not been fully validated for medical applications. For research use only.

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