

GMP Recombinant Human G-CSF (carrier-free)

Catalog# / Size	578614 / 25 µg 578616 / 100 µg
Other Names	Granulocyte-Colony Stimulating Factor, CSF3, CSF-β

Description	Human G-CSF was cloned from a human squamous carcinoma cell line and is the key hematopoietic cytokine involved in the control of neutrophil production. Therefore, it is a critical regulator of innate immunity against bacterial infections. G-CSF mobilizes stem cells indirectly by down-regulating the expression of CXCL12 on marrow osteoblasts and by releasing neutrophil and monocyte proteolytic enzymes, including neutrophil elastase, cathepsin G, and matrix metalloproteinase-9, which in turn degrade important HSC trafficking and adhesion molecules c-kit, VCAM-1, and CXCR4. In addition, G-CSF possesses immunosuppressive effects on monocytes/macrophages, dendritic cells, and T lymphocytes. The receptor for G-CSF is expressed not only in hematopoietic cells; it is also expressed in cardiomyocytes, skeletal muscle, and neurons. G-CSF influences mouse skeletal muscle development and regeneration by stimulating myoblast proliferation. In vitro, G-CSF displays strong antiapoptotic activity in neuronal cells.
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Product Details

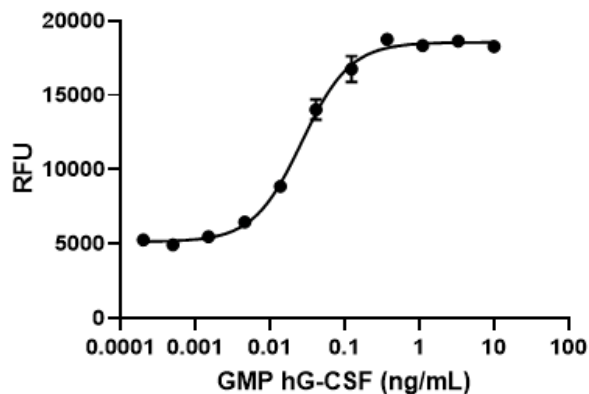
Source	Human G-CSF, amino acids Thr27-Pro200 (Accession# BC033245.1) was expressed in 293E cells.
Molecular Mass	The 174 amino acid recombinant protein has a predicted molecular mass of 18.6 kD. The DTT-reduced and the non-reduced proteins migrate at approximately 20 kD by SDS-PAGE. The N-terminal amino acid is Thr.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in PBS.
Endotoxin Level	Less than 0.1 EU per µg protein as determined by the LAL method
Concentration	500 µg/mL
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% endotoxin-free BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week or stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	ED ₅₀ = 0.02 - 0.08 ng/mL as measured by its ability to induce proliferation of M-NFS-60 mouse myelogenous leukemia lymphoblast cells.
Application	Bioassay Cell cultures
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are validated in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .
Disclaimer	GMP Recombinant Proteins. BioLegend GMP recombinant proteins are manufactured in a dedicated GMP facility and compliant with ISO 13485:2016. For research or ex vivo cell processing use. Not for use in diagnostic or therapeutic procedures. Our processes include: <ul style="list-style-type: none">• Batch-to-batch consistency• Material traceability• Documented procedures• Documented employee training• Equipment maintenance and monitoring records• Lot-specific certificates of analysis• Quality audits per ISO 13485:2016• QA review of released products BioLegend GMP recombinant proteins are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12.

Antigen Details

Structure	Dimer
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Distribution	Hematopoietic stem and progenitors, embryonic stem cells
Function	G-CSF acts on myeloid progenitor cells to stimulate survival, proliferation, and neutrophilic maturation; on mature neutrophils, G-CSF enhances survival, superoxide anion and alkaline phosphatase production, arachidonic acid release, and antibody dependent cellular cytotoxicity.
Interaction	Hematopoietic progenitor cells, neutrophilic granulocytes, monocytes, platelets, endothelial cells, trophoblastic cells, myoblasts, cardiomyocytes, cardiac fibroblasts, neurons, and some small cell lung carcinoma cell line
Ligand/Receptor	CD114 (G-CSFR)
Bioactivity	Measured by its ability to induce proliferation of M-NFS-60 cells
Cell Type	Embryonic Stem Cells, Hematopoietic stem and progenitors
Biology Area	Cell Biology, Immunology, Innate Immunity, Stem Cells
Molecular Family	Cytokines/Chemokines, Growth Factors
Antigen References	Nagata S, et al. 1986. Nature. 319:415. Kim HK, et al. 2006. Blood. 108:812. Donahue RE, et al. 2009. Blood. 114:2530. Shimoji K, et al. 2010. Cell Stem Cell. 6:227. Martins A, et al. 2010. IUBMB Life. 62:611. Hara M, et al. 2011. J. Exp. Med. 208:715.
Gene ID	1440

Product Data



GMP recombinant human M-CSF induces proliferation of M-NFS-60 mouse myelogenous leukemia lymphoblast cells in a dose-dependent manner with an ED₅₀ range of 0.02 - 0.08 ng/mL.

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