Cytokines

Mouse Recombinant G-CSF

Granulocyte colony-stimulating factor

Catalog #	78014.1	10 µg
	78014	100 µg
	78014.2	1000 µg

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Product Description

Granulocyte colony-stimulating factor (G-CSF) is a member of the CSF family of glycoproteins that regulate hematopoietic cell proliferation, differentiation, and function. It is a key cytokine involved in the production of neutrophils and the stimulation of granulocyte colony formation from hematopoietic progenitor cells (Metcalf & Nicola). G-CSF causes a range of effects including a transient reduction of SDF-1 expression (Petit et al.), the activation of metalloproteases that cleave VCAM-1 (Levesque et al.), and the release of norepinephrine from the sympathetic nervous system (Katayama et al.), leading to the release or mobilization of hematopoietic stem cells from the bone marrow into the periphery. The G-CSF receptor is expressed on a variety of hematopoietic cells, including myeloid-committed progenitor cells, neutrophils, granulocytes, and monocytes. In addition to hematopoietic cells, G-CSF is also expressed in cardiomyocytes, neuronal cells, mesothelial cells, and endothelial cells. Mouse G-CSF was first purified from cultures of the WEHI-3B myelomonocytic leukemia cell line as the inducer of the terminal differentiation of WEHI-3B and other myeloid leukemia cell lines (Nicola et al.). It was later cloned in monkey COS cells from a cDNA library prepared with mRNA derived from mouse fibrosarcoma NFSA cells that produce G-CSF constitutively (Tsuchiya et al.). Binding of G-CSF to its receptor leads to activation of the JAK/STAT, MAPK, PI3K, and AKT signal transduction pathways.

Product Information

Alternative Names:	Colony-stimulating factor 3, CSF-3, MGI-1G, Pluripoietin
Accession Number:	P09920
Amino Acid Sequence:	MVPLVTVSAL PPSLPLPRSF LLKSLEQVRK IQASGSVLLE QLCATYKLCH PEELVLLGHS LGIPKASLSG CSSQALQQTQ CLSQLHSGLC LYQGLLQALS GISPALAPTL DLLQLDVANF ATTIWQQMEN LGVAPTVQPT QSAMPAFTSA FQRRAGGVLA ISYLQGFLET ARLALHHLA
Predicted Molecular Mass:	19.1 kDa
Species:	Mouse
Cross Reactivity:	Human
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium citrate, pH 3.0.
Source:	E. coli

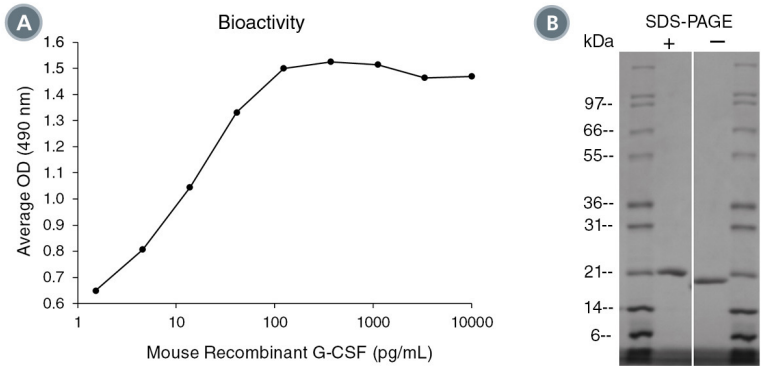
Specifications

Activity:	The specific activity is ≥ 2 x 10^7 units/mg (EC50 ≤ 50 pg/mL) as determined by a cell proliferation assay using NFS-60 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse Recombinant G-CSF was tested by its ability to promote the proliferation of NFS-60 cells. Cell proliferation was measured after 69 hours of culture using a fluorometric assay method The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 8 - 12 pg/mL.
(B) 2 µg of Mouse Recombinant G-CSF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant G-CSF has a predicted molecular mass of 19.1 kDa.

Related Products

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References

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Lévesque JP et al. (2001) Vascular cell adhesion molecule-1 (CD106) is cleaved by neutrophil proteases in the bone marrow following hematopoietic progenitor cell mobilization by granulocyte colony-stimulating factor. Blood 98(5): 1289–97.
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Tsuchiya M et al. (1986) Isolation and characterization of the cDNA for murine granulocyte colony-stimulating factor. Proc Natl Acad Sci USA 83(20): 7633–7.