

Cytokines

Mouse Recombinant G-CSF



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Granulocyte colony-stimulating factor

Catalog #	78014.1	10 µg
	78014	100 µg
	78014.2	1000 µg

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 IQASGSVLE QLCATYKLCH PEELVLLGHS LGIPKASLSG CSSQALQQTQ CLSQLHSGLC LYQGLLQALS GISPALAPTL DLLQLDVANF ATTIIQQMEN LGVAPTQPT 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

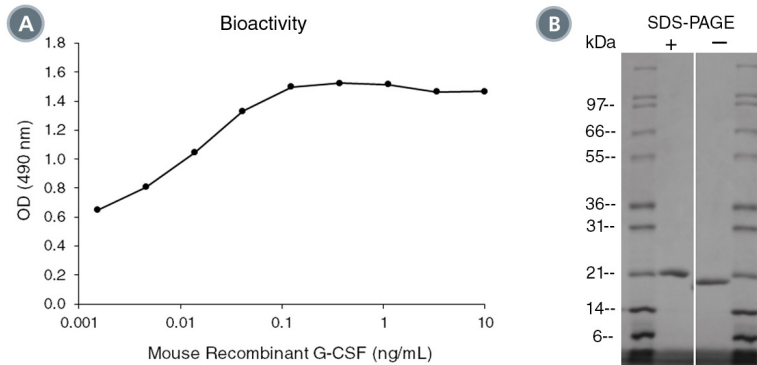
Specifications

Activity:	The specific activity is $\geq 2 \times 10^7$ units/mg ($EC_{50} \leq 50$ pg/mL) as determined by a cell proliferation assay using NFS-60 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic limulus amoebocyte 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.
Reconstitution:	Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately BSA is not required.

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

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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