

General Information

Synonyms	Colony stimulating factor 2, CSF-2, GMCSF
Accession #	P04141
Source	Human embryonic kidney cell, HEK293-derived human GM-CSF/CSF2 protein
	Ala18-Glu144
Predicted Molecular weight	14.5 kDa

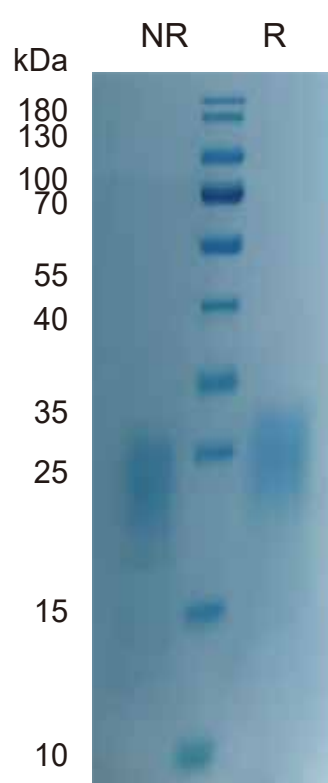
Components and Storage

Formulation	Solution protein.
	Dissolved in sterile PBS buffer to a concentration of 0.2 mg/mL.
	This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
Storage and Stability	Avoid repeated freeze-thaw cycles.
	It is recommended that the protein be aliquoted for optimal storage.
	12 months from date of receipt, -20 to -70 °C as supplied.
Shipping	Shipping with dry ice.

Quality

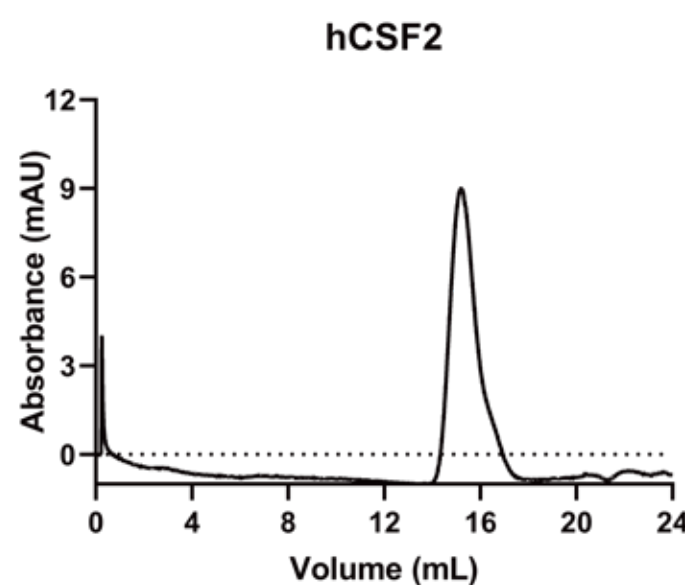
Purity	> 95%, determined by SDS-PAGE.
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method.
Activity	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells.
	The EC50 for this effect is 2-20 pg/mL.

SDS-PAGE



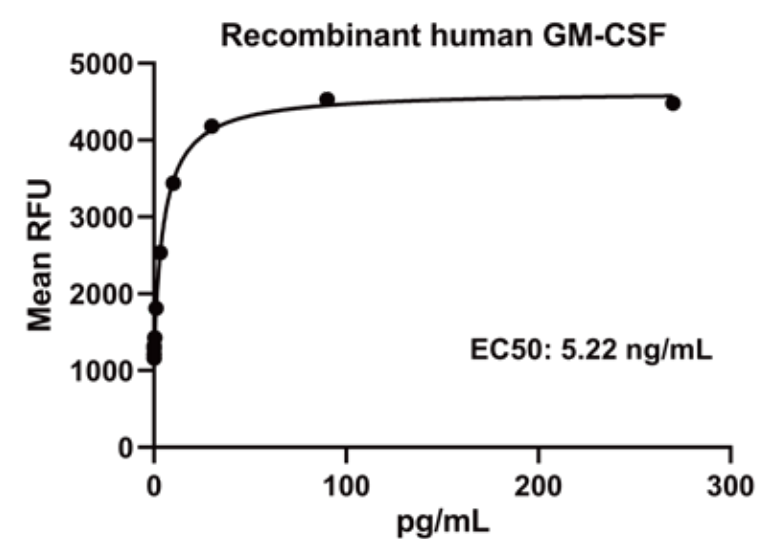
2 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Gel filtration



Size-exclusion chromatography of recombinant human GM-CSF protein (280 nm absorbance)

Bioactivity



Recombinant human CSF2 (Catalog # HF-2004) stimulates cell proliferation of the TF-1 human erythroleukemic cells.

Background

Granulocyte Macrophage Growth Factor(GM-CSF) is one of an array of cytokines with pivotal roles in embryo implantation and subsequent development. In response to cytokine or inflammatory stimuli, GM-CSF is produced by a number of different cell types, including T cells, B cells, macrophages, mast cells, endothelial cells, fibroblasts, and adipocytes (1). As a survival factor, GM-CSF activates the effector functions of granulocytes, monocytes/macrophages, and eosinophils (1, 2). GM-CSF promotes a Th1 biased immune response, angiogenesis, allergic inflammation, and the development of autoimmunity (3-5). It shows clinical effectiveness in ameliorating chemotherapy-induced neutropenia, and GM-CSF transfected tumor cells are utilized as cancer vaccines (6, 7). Mature human GM-CSF shares 63%-70% amino acid sequence identity with canine, feline, porcine, and rat GM-CSF and 54% with mouse GM-CSF. GM-CSF exerts its biological effects through a heterodimeric receptor complex composed of GM-CSF R alpha /CD116 and the signal transducing common beta chain (CD131) which is also a component of the high-affinity receptors for IL-3 and IL-5 (8, 9). In addition, GM-CSF binds a naturally occurring soluble form of GM-CSF R alpha (10).

Reference

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4. Cao, Y. (2007) J. Clin. Invest. 117:2362.	9. Hayashida, K. et al. (1990) Proc. Natl. Acad. Sci. 87:9655.
5. Fleetwood, A.J. et al. (2005) Crit. Rev. Immunol. 25:405.	10. Pelley, J.L. et al. (2007) Exp. Hematol. 35:1483.

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