


**#8929**  
Store at -20°C

## Human CSF-1/M-CSF Recombinant Protein

5 µg



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MW (kDa):	UniProt ID:	Entrez-Gene Id:
16-26	#P09603	1435

<b>Background</b>	Colony stimulating factor 1 (CSF-1)/macrophage colony stimulating factor (M-CSF) is produced by fibroblasts, endothelial cells, stromal cells, macrophages, osteoblasts, and other cell types (1). CSF-1/M-CSF is required for growth and differentiation of monocytes and macrophages (1,2). CSF-1/M-CSF polarizes macrophages into the M2 phenotype where anti-inflammatory IL-10 is produced, rather than the M1 phenotype where inflammatory cytokines are produced. CSF-1/M-CSF also recruits monocytes and enhances angiogenesis by inducing VEGF production (1,2). CSF-1/M-CSF binds to its receptor CSF1R; downstream signaling involves PI3K/Akt, Erk, and Stats 1, 3, and 5 (1,3). An increase in CSF-1/M-CSF expression may contribute to cancer progression, and high plasma CSF-1/M-CSF levels are associated with rheumatoid arthritis (1,4,5).
<b>Endotoxin</b>	Less than 0.01 ng endotoxin/1 µg hCSF-1/M-CSF.
<b>Purity</b>	>98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hCSF-1/M-CSF. All lots are greater than 98% pure.
<b>Source / Purification</b>	Recombinant human CSF-1/M-CSF Glu33-Ser190 (Accession #P09603-3) was expressed in human 293 cells at Cell Signaling Technology.
<b>Bioactivity</b>	The bioactivity of recombinant hCSF-1M/CSF was determined in a M-NFS-60 cell proliferation assay. The ED <sub>50</sub> of each lot is between 0.5-15.0 ng/ml.
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<b>Background References</b>	1. Hamilton, J.A. (2008) <i>Nat Rev Immunol</i> 8, 533-44. 2. Curry, J.M. et al. (2008) <i>PLoS One</i> 3, e3405. 3. Hamilton, J.A. (1997) <i>J Leukoc Biol</i> 62, 145-55. 4. Rioja, I. et al. (2008) <i>Arthritis Rheum</i> 58, 2257-67. 5. Skrzypski, M. et al. (2008) <i>Clin Cancer Res</i> 14, 4794-9.

<b>Cross-Reactivity Key</b>	<b>H:</b> human <b>M:</b> mouse <b>R:</b> rat <b>Hm:</b> hamster <b>Mk:</b> monkey <b>Vir:</b> virus <b>Mi:</b> mink <b>C:</b> chicken <b>Dm:</b> D. melanogaster <b>X:</b> Xenopus <b>Z:</b> zebrafish <b>B:</b> bovine <b>Dg:</b> dog <b>Pg:</b> pig <b>Sc:</b> S. cerevisiae <b>Ce:</b> C. elegans <b>Hr:</b> horse <b>GP:</b> Guinea Pig <b>Rab:</b> rabbit <b>All:</b> all species expected
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