

## Recombinant Mouse GM-CSF (carrier-free)

<b>Catalog# / Size</b>	576308 / 500 µg 576302 / 10 µg 576304 / 25 µg 576306 / 100 µg
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Granulocyte/macrophage-colony stimulating factor, CSF-α, Pluripoietin-α, Eosinophil colony stimulating factor (Eo-CSF), Burst promoting activity (BPA)
<b>Description</b>	GM-CSF is a hematopoietic factor that is produced by T cells, macrophages, fibroblasts and endothelial cells. This multifunctional cytokine stimulates progenitor cells of neutrophils, eosinophils and macrophages. GM-CSF is also a differentiation and activating factor for granulocytic and monocytic cells.

### Product Details

<b>Source</b>	Mouse GM-CSF, amino acids Ala18-Lys141 (Accession # NM_009969) was expressed in <i>E. coli</i> .
<b>Molecular Mass</b>	The 125 amino acid N-terminal methionylated recombinant protein has a predicted molecular mass of 14.2 kDa. The DTT-reduced protein migrates at approximately 13 kDa and the non-reduced protein migrates at approximately 11kDa by SDS-PAGE.
<b>Purity</b>	Purity is >98%, as determined by Coomassie stained SDS-PAGE.
<b>Formulation</b>	0.22 µm filtered protein solution is in 10mM NaH <sub>2</sub> PO <sub>4</sub> , 150mM NaCl, pH 7.2.
<b>Endotoxin Level</b>	Endotoxin level is <0.1 EU/µg (<0.01ng/µg) protein as determined by the LAL method.
<b>Concentration</b>	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.
<b>Storage &amp; Handling</b>	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% 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 and stored at -20°C or colder for up to 3 months. <b>Avoid repeated freeze/thaw cycles.</b>
<b>Activity</b>	The ED <sub>50</sub> is <0.05 ng/ml, corresponding to a specific activity >2x10 <sup>7</sup> units/mg.
<b>Application</b>	<a href="#">Bioassay</a>
<b>Recommended Usage</b>	Use when high specific biological activity is required.
<b>Application Notes</b>	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 or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our <a href="#">100% satisfaction guarantee</a> . If you have any concerns, contact us at <a href="mailto:tech@biolegend.com">tech@biolegend.com</a> .
<b>Application References</b>	<ol style="list-style-type: none"> <li>Ahn J, <i>et al.</i> 2012. <i>PNAS</i>. 109:19386. <a href="#">PubMed</a></li> <li>Verhagen J, <i>et al.</i> 2012. <i>PNAS</i>. 110:E221. <a href="#">PubMed</a></li> <li>Bretscher P, <i>et al.</i> 2015. <i>EMBO Mol Med</i>. 7:593. <a href="#">PubMed</a></li> </ol>
<b>(PubMed link indicates BioLegend citation)</b>	
<b>Product Citations</b>	<ol style="list-style-type: none"> <li>Lin C, <i>et al.</i> 2020. <i>Cancer Immunol Res</i>. 632:8. <a href="#">PubMed</a></li> <li>Kuo PC, <i>et al.</i> 2021. <i>Brain Commun</i>. 3:fcab187. <a href="#">PubMed</a></li> <li>Paris J <i>et al.</i> 2019. <i>Cell Stem Cell</i>. 25(1):137-148. <a href="#">PubMed</a></li> <li>Delvecchio FR, <i>et al.</i> 2021. <i>Cell Mol Gastroenterol Hepatol</i>. 12:1543. <a href="#">PubMed</a></li> <li>Ma Q, <i>et al.</i> 2021. <i>Clin Transl Immunology</i>. 10:e1300. <a href="#">PubMed</a></li> </ol>

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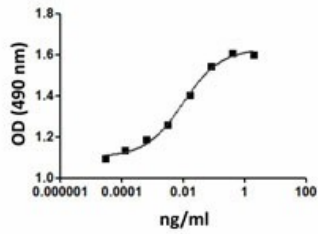
## Antigen Details

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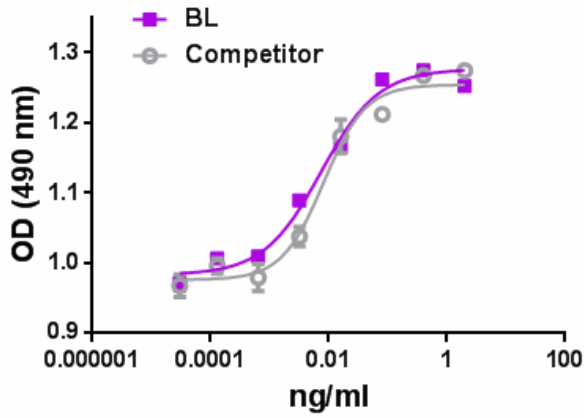
<b>Structure</b>	cytokine
<b>Distribution</b>	T cells, monocytes/macrophages, fibroblasts, endothelial cells, mast cells
<b>Function</b>	Synergistic with IL-1, IL-3, G-CSF; E21R competitive antagonist for receptor binding; stored in ECM with heparan sulfate proteoglycans
<b>Interaction</b>	Granulocyte/macrophage/erythroid/megakaryocytic progenitors, myeloblasts, monoblasts
<b>Ligand/Receptor</b>	Heterodimer GM-CSFR $\mu$ subunit (CDw116); $\beta$ -subunit (CDw131) in common with IL-3R, IL-5R
<b>Bioactivity</b>	Growth/development granulocyte/macrophage progenitors; differentiates myeloblasts/monoblasts; synergizes with Epo proliferation of erythroid/megakaryocytic progenitors
<b>Cell Type</b>	Embryonic Stem Cells, Hematopoietic stem and progenitors
<b>Biology Area</b>	Cell Biology, Stem Cells
<b>Molecular Family</b>	Cytokines/Chemokines, Growth Factors
<b>Antigen References</b>	<ol style="list-style-type: none"> <li>1. Fitzgerald K, <i>et al.</i> Eds. 2001. <i>The Cytokine FactsBook.</i> Academic Press San Diego.</li> <li>2. Demetri G, <i>et al.</i> 1991. <i>Blood</i> 78:2791.</li> <li>3. Fan D, <i>et al.</i> 1991. <i>In vivo</i> 5:571.</li> <li>4. Negrin R, <i>et al.</i> 1992. <i>Adv. Pharmacol.</i> 23:263.</li> </ol>
<b>Gene ID</b>	<a href="#">12981</a>

## Product Data

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FDC-P1 cell proliferation induced by mouse GM-CSF.



Recombinant mouse GM-CSF induces the proliferation of mouse FDC-P1 cell line in a dose dependent manner. BioLegend's protein was compared side-by-side to the leading competitor's equivalent product.

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