

Cell-Vive™ GMP Recombinant Human GM-CSF (carrier-free)

Catalog# / Size	572914 / 25 µg 572916 / 100 µg
Other Names	Colony stimulating factor 2, CSF2, Granulocyte/macrophage colony-stimulating factor, CSF-α, Pluripoietin-α, Eosinophil colony stimulating factor (Eo-CSF), Burst promoting activity (BPA).
Description	GM-CSF plays a key role in signaling emergency hemopoiesis (predominantly myelopoiesis) in response to infection, including the production of granulocytes and macrophages in the bone marrow and their maintenance, survival, and functional activation at sites of injury or insult. The receptor for GM-CSF is a heterodimer that comprises a major binding subunit (GMRα) and a major signaling subunit (βc). The receptor subunits are always co-expressed on the surface of leukocytes, with βc being expressed at lower levels than GMRα. Certain non-hemopoietic cell types have also been reported to express the GM-CSF receptor and to respond to GM-CSF stimulation <i>in vitro</i> , although the <i>in vivo</i> significance of these observations remains uncertain.
Quality Statement	<p>BioLegend Cell-Vive™ GMP Recombinant proteins are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12 in a dedicated GMP facility compliant with ISO 13485:2016. Specifications and processes include:</p> <ul style="list-style-type: none">• Low endotoxin level (≤ 0.1 EU/µg)• Purity (≥ 95% or higher)• Bioburden testing• Mycoplasma testing• Batch-to-batch consistency• Vendor qualification• Raw material traceability and documentation• Documented procedures and employee training• Equipment maintenance and monitoring records• Lot-specific certificates of analysis• Quality audits per ISO 13485:2016• QA review of released products

Product Details

Source	Human GM-CSF, amino acids Ala18- Glu144 (Accession# NM_000758) was expressed in <i>E. coli</i> .
Molecular Mass	The 127 amino acid N-terminal methionylated recombinant protein has a predicted molecular mass of 14.5 kD. The DTT-reduced protein migrates at approximately 14 kD and the non-reduced protein migrates with slightly greater mobility by SDS-PAGE.
N-terminal Sequence Analysis	Ala-Pro-Ala-Arg-Ser-Pro-Ser-Pro-Ser-Thr
Purity	≥ 95%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.1 µm filtered protein solution is in PBS, pH 7.2.
Endotoxin Level	Less than or equal to 0.1 EU per µg protein as determined by the LAL method
Residual Host Cell Protein Content	≤ 0.500 ng/µg by ELISA
Concentration	500 µg/mL
Storage & Handling	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% endotoxin-free 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 or stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.

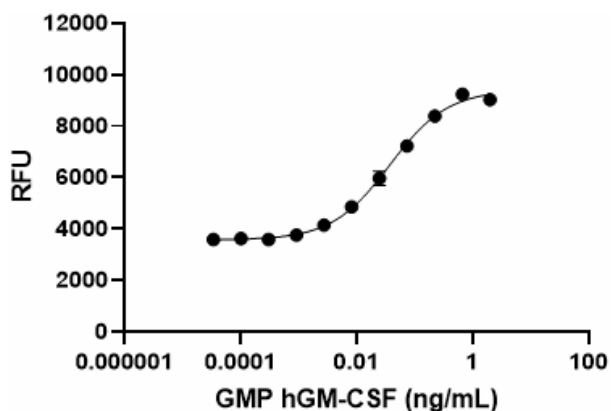
Activity	ED ₅₀ = 0.01 – 0.04 ng/mL as determined by the dose-dependent stimulation of TF-1 cell proliferation. Deep Blue Cell Viability™ Kit (Cat. No. 424701) is used to measure the proliferation. The specific activity of Cell-Vive™ GMP Recombinant Human GM-CSF (carrier-free) is ≥ 1.8 x 10 ⁷ IU/mg when compared against the WHO International Standard for human GM-CSF (NIBSC code: 88/646).
Application	Bioassay Cell Culture
Application Notes	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 validated in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .
Disclaimer	BioLegend Cell-Vive™ GMP Recombinant proteins are for research use only. Suitable for ex vivo cell processing. Not for injection or diagnostic or therapeutic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

Antigen Details

Structure	Cytokine
Distribution	T cells, macrophages, fibroblasts, endothelial cells, mast cells.
Function	Synergistic with IL-1, IL-3, G-CSF; E21R competitive antagonist for receptor binding; stored in ECM with heparan sulfate proteoglycans
Interaction	Granulocyte/macrophage/erythroid/megakaryocytic progenitors, myeloblasts, monoblasts, dendritic cells, T cells.
Ligand/Receptor	Heterodimer GM-CSFR α subunit (CDw116); β-subunit (CDw131) in common
Bioactivity	Measured by its ability to induce proliferation of TF-1 erythroleukemic cells.
Cell Type	Embryonic Stem Cells, Hematopoietic stem and progenitors
Biology Area	Cell Biology, Stem Cells
Molecular Family	Cytokines/Chemokines, Growth Factors
Antigen References	<ol style="list-style-type: none"> Hercus TR, <i>et al.</i> 2009. <i>Blood</i>. 114:1289-98. Hayashida K, <i>et al.</i> 1990. <i>Proc Natl Acad Sci USA</i>. 87:9655-9. Walker F & Burgess AW. 1985. <i>EMBO J</i>. 4:933-9. Kitamura T, <i>et al.</i> 1989. <i>J Cell Physiol</i>. 140:323-34.

Gene ID [1437](#)

Product Data



GMP recombinant human GM-CSF induces dose-dependent proliferation of TF-1 erythroleukemic cells. Deep Blue Cell Viability™ Kit (Cat. No. 424701) is used to measure the proliferation. The ED₅₀ range for this effect is 0.01 – 0.04 ng/mL.

For Research Use Only. Suitable for *ex vivo* cell processing. Not for injection or diagnostic or therapeutic use.

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