

Cell-Vive™ GMP Recombinant Human IL-6 (carrier-free)

Catalog# / Size	570814 / 25 µg 570816 / 100 µg
Other Names	Interleukin-6, Interferon-β2, B cell stimulating factor-2 (BSF-2), Cytotoxic T cell differentiation factor (CDF), Hepatocyte stimulating factor (HSF), Hybridoma/plasmacytoma growth factor (HPGF)
Description	IL-6 is a multifunctional cytokine that can regulate various immune and inflammatory responses. Several studies have suggested a crucial role for IL-6 in angiogenesis. The use of mice deficient in IL-6 (-/-) demonstrated a critical role for this protein in a mouse model of lung angiogenesis. IL-6 has been shown to cause proliferation and migration of systemic endothelial cells in culture (1). The classical responsiveness to IL-6 is governed by a receptor complex consisting of two membrane-bound subunits, an 80-kD cognate chain (IL-6R), and a ubiquitously expressed 130-kD β-chain receptor (gp130) which acts as the universal signal-transducing element for all IL-6 family cytokines (2). Alternatively, IL-6 regulation of leukocyte trafficking relies upon signaling via its soluble IL-6R (termed IL-6 trans-signaling) (3). IL-6 plays a major role in regulating neutrophil clearance during acute peritoneal inflammation; as a result of specific down-regulation of neutrophil-attracting chemokine (CXCL1/KC) production (4). IL-6 is a key factor that reciprocally regulates Th17 and Foxp3(+) Treg differentiation by inhibition of TGF-beta induced Foxp3 and induction of RORγt, a Th17 lineage-specific transcription factor (5).
Quality Statement	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: <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 IL-6, amino acids Pro29-Met212 (Accession # NM_000600) was expressed in E. coli.
Molecular Mass	The 185 amino acid N-terminal methionylated recombinant protein has a predicted molecular mass of 21 kD. The DTT-reduced and non-reduced protein migrate at approximately 23 kD by SDS-PAGE.
N-terminal Sequence Analysis	Pro-Val-Pro-Pro-Gly-Glu-Asp-Ser-Lys-Asp
Purity	≥ 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in 10 mM NaH ₂ PO ₄ , 150 mM NaCl, 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

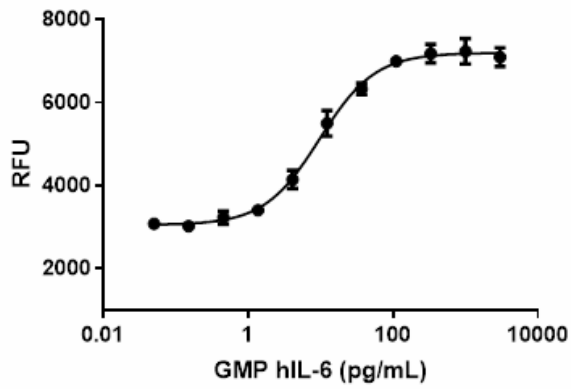
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can 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 = 4 - 20 pg/mL, as determined by a dose-dependent stimulation in a 7TD1 cell proliferation assay. The specific activity of Cell-Vive™ GMP Recombinant Human IL-6 (carrier-free) is >3.5 x 10 ⁷ IU/mg when compared against the WHO International Standard for Human IL-6 (NIBSC code: 89/548).
Application	Bioassay Cell cultures
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 <i>ex vivo</i> 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

Distribution	IL-6 is released by activated T cells, B cells, monocytes, macrophages, fibroblasts, epithelial cells, and endothelial cells.
Function	Upregulated by IL-1, PDGF, IFN-β, TNF-α, NGF, and IL-17 and downregulated by glucocorticoids IL-4 and TGF-β
Interaction	T cells, B cells, hepatocytes, and cholinergic neurons
Ligand/Receptor	Heterodimer IL-6Rα (CD126)/IL-6Rβ (CD130; gp130) and soluble IL-6R
Cell Type	Hematopoietic stem and progenitors
Biology Area	Cell Biology, Immunology, Innate Immunity, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none"> 1. McClintock JY and Wagner EM. 2005. <i>J. Appl. Physiol.</i> 99:861. 2. Murakami M, <i>et al.</i> 1993. <i>Science</i> 260:1808. 3. Cartmell T, <i>et al.</i> 2000. <i>J. Physiol.</i> 526:653. 4. Jones SA, <i>et al.</i> 2001. <i>FASEB J.</i> 15:43. 5. Fielding CA, <i>et al.</i> 2008. <i>J. Immunol.</i> 181:2189. 6. Sonderegger I, <i>et al.</i> 2008. <i>Eur. J. Immunol.</i> 38:1833. 7. Erta M, <i>et al.</i> 2012. <i>Int. J. Biol. Sci.</i> 8:1254. 8. Rosean TR, <i>et al.</i> 2014. <i>Immunol. Res.</i> 59:188.

Gene ID [3569](#)

Product Data



GMP recombinant human IL-6 induces proliferation of a 7TD1 cells in a dose-dependent manner with an ED₅₀ range of 4 - 20 pg/mL.

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

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