

## GMP Recombinant Human IL-6 (carrier-free)

<b>Catalog# / Size</b>	570814 / 25 µg 570816 / 100 µg
<b>Other Names</b>	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)
<b>Description</b>	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).

### Product Details

---

<b>Source</b>	Human IL-6, amino acids Pro29-Met212 (Accession # NM_000600) was expressed in <i>E. coli</i> .
<b>Molecular Mass</b>	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.
<b>Purity</b>	> 95%, as determined by Coomassie stained SDS-PAGE
<b>Formulation</b>	0.1 µm filtered protein solution is in 10 mM NaH <sub>2</sub> PO <sub>4</sub> , 150 mM NaCl, pH 7.2.
<b>Endotoxin Level</b>	Less than 0.1 EU per µg protein as determined by the LAL method
<b>Concentration</b>	500 µg/mL
<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% 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. <b>Avoid repeated freeze/thaw cycles.</b>
<b>Activity</b>	ED <sub>50</sub> = 4 - 20 pg/mL, as determined by a dose-dependent stimulation in a 7TD1 cell proliferation assay. The specific activity of GMP recombinant human IL-6 is approximately 5.0 x 10 <sup>4</sup> IU/µg when compared against the WHO Reference Reagent for Human IL-6 (NIBSC code: 89/548) as determined by the dose-dependent stimulation of 7TD1 cell proliferation.
<b>Application</b>	Bioassay Cell cultures
<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 validated 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>Disclaimer</b>	<b>GMP Recombinant Proteins.</b> BioLegend GMP recombinant proteins are manufactured in a dedicated GMP facility and compliant with ISO 13485:2016. For research or <i>ex vivo</i> cell processing use. Not for use in diagnostic or therapeutic

procedures. Our processes include:

- Batch-to-batch consistency
- Material traceability
- Documented procedures
- Documented employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of released products

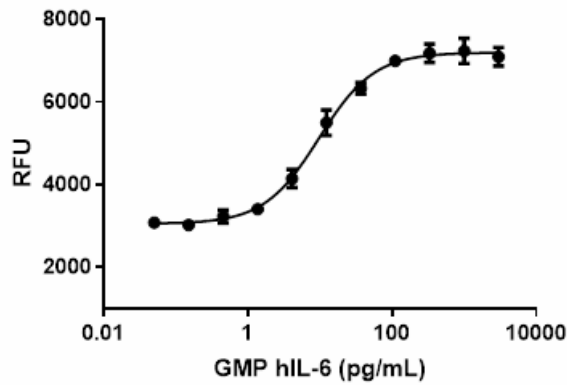
BioLegend GMP recombinant proteins are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12.

## Antigen Details

---

<b>Distribution</b>	IL-6 is released by activated T cells, B cells, monocytes, macrophages, fibroblasts, epithelial cells, and endothelial cells.
<b>Function</b>	Upregulated by IL-1, PDGF, IFN- $\beta$ , TNF- $\alpha$ , NGF, and IL-17 and downregulated by glucocorticoids IL-4 and TGF- $\beta$
<b>Interaction</b>	T cells, B cells, hepatocytes, and cholinergic neurons
<b>Ligand/Receptor</b>	Heterodimer IL-6R $\alpha$ (CD126)/IL-6R $\beta$ (CD130; gp130) and soluble IL-6R
<b>Cell Type</b>	Hematopoietic stem and progenitors
<b>Biology Area</b>	Cell Biology, Immunology, Innate Immunity, Stem Cells
<b>Molecular Family</b>	Cytokines/Chemokines
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. McClintock JY and Wagner EM. 2005. J. Appl. Physiol. 99:861.</li><li>2. Murakami M, et al. 1993. Science 260:1808.</li><li>3. Cartmell T, et al. 2000. J. Physiol. 526:653.</li><li>4. Jones SA, et al. 2001. FASEB J. 15:43.</li><li>5. Fielding CA, et al. 2008. J. Immunol. 181:2189.</li><li>6. Sonderegger I, et al. 2008. Eur. J. Immunol. 38:1833.</li><li>7. Erta M, et al. 2012. Int. J. Biol. Sci. 8:1254.</li><li>8. Rosean TR, et al. 2014. Immunol. Res. 59:188.</li></ol>
<b>Gene ID</b>	<a href="#">3569</a>

## Product Data



GMP recombinant human IL-6 induces proliferation of a 7TD1 cells in a dose-dependent manner with an ED<sub>50</sub> range of 4 - 20 pg/mL.

## Symbols Glossary\*

Symbol	Meaning	Symbol Title	Symbol No.	Symbol	Meaning	Symbol Title	Symbol No.
	Catalog number	Catalogue number	5.1.6		Indicates the need for the user to consult the instructions for use.	Consult instructions for use	5.4.3
	Indicates the temperature limits to which the medical device can be safely exposed.	Temperature limit	5.3.7		Indicates a medical device that needs protection from light sources.	Keep away from sunlight	5.3.2
	Indicates the upper limit of temperature to which the medical device can be safely exposed.	Upper limit of temperature	5.3.6		Indicates the date after which the medical device is not to be used.	Use-by date	5.1.4
	Indicates the medical device manufacturer.	Manufacturer	5.1.1		Indicates the authorized representative in the European Community.	Authorized representative in the European Community	5.1.2
	Indicates the manufacturer's batch code so that the batch or lot can be identified.	Batch code	5.1.5		Indicates a medical device that is intended to be used as an in vitro diagnostic medical device.	<i>In vitro</i> diagnostic medical device	5.5.1

\* Symbol information is from EN ISO 15223-1:2016 Medical devices – Symbols to be used with medical device labels, labelling and information to be supplied – Part 1: General requirements

For research and *ex vivo* cell processing use. Not for diagnostic or therapeutic procedures. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

\*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, [www.biolegend.com/terms](http://www.biolegend.com/terms)). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to reverse engineer functionally similar materials without written approval of BioLegend. By use of these products you accept the terms and conditions of any and all applicable [Limited Use Label Licenses](#). Unless otherwise indicated, these products are for research and *ex vivo* cell processing use only and not intended for human or animal diagnostic or therapeutic use.

8999 BioLegend Way, San Diego, CA 92121 [www.biolegend.com](http://www.biolegend.com)  
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587