

## Cell-Vive™ GMP Recombinant Human IL-1β (carrier-free)

<b>Catalog# / Size</b>	579414 / 25 µg 579416 / 100 µg
<b>Other Names</b>	Catabolin, interleukin-1 beta, preinterleukin 1 beta, pro-interleukin-1-beta.
<b>Description</b>	<p>IL-1β is a proinflammatory cytokine essential for host responses and resistance to pathogens, including induction of fever, cell proliferation, differentiation, and apoptosis. IL-1β in humans and mice does not encode a typical signal peptide and, as a result, newly synthesized pro-IL-1β accumulates within the cytoplasm of activated monocytes and macrophages. Conversion of the inactive pro-IL-1β to its mature form requires the proteolytic action of IL-1β-converting enzyme (ICE), also termed caspase-1. Secretion of mature IL-1β from LPS-activated monocytes/macrophages is not a constitutive process. These cells must encounter a secondary stimulus that specifically activates the posttranslational processing events. Moreover, owing to its pro-inflammatory nature, IL-1β is regarded as a tumor-promoting cytokine. In fact, enhanced tumor metastasis and angiogenesis has been observed under the influence of IL-1β. IL-1β is able to facilitate tumor progression in murine models of lung cancer. In addition, upregulation of metastasis and tumor angiogenesis by IL-1β has been associated with increased activity of matrix metalloproteinases and expression of the pro-angiogenic molecule hepatocyte growth factor.</p>
<b>Quality Statement</b>	<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"><li>• Low endotoxin level (≤ 0.1 EU/µg)</li><li>• Purity (≥ 95% or higher)</li><li>• Bioburden testing</li><li>• Mycoplasma testing</li><li>• Batch-to-batch consistency</li><li>• Vendor qualification</li><li>• Raw material traceability and documentation</li><li>• Documented procedures and employee training</li><li>• Equipment maintenance and monitoring records</li><li>• Lot-specific certificates of analysis</li><li>• Quality audits per ISO 13485:2016</li><li>• QA review of released products</li></ul>

### Product Details

---

<b>Source</b>	Human IL-1β, amino acids Ala117-Ser269 (Accession # NM_000576) was expressed in E. coli.
<b>Molecular Mass</b>	The 153 amino acid recombinant protein has a predicted molecular mass of 17.4 kD. The DTT-reduced and the non-reduced protein migrate at approximately 18 kD by SDS-PAGE. The N-terminal amino acid is Alanine.
<b>N-terminal Sequence Analysis</b>	Ala-Pro-Val-Arg-Ser-Leu-Asn-(Cys)-Thr-Leu
<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 or equal to 0.1 EU per µg protein as determined by the LAL method
<b>Residual Host Cell Protein Content</b>	≤ 0.500 ng/µg by ELISA
<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> = 2.5 - 12.5 pg/mL, as determined by a dose-dependent stimulation in a proliferation assay with D10.G4.1 mouse helper lymphocytes. Deep Blue Cell Viability™ Kit (Cat. No. 424701) is used to measure the proliferation.
<b>Application</b>	<a href="#">Bioassay</a> <a href="#">Cell Culture</a>
<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 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>Disclaimer</b>	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

---

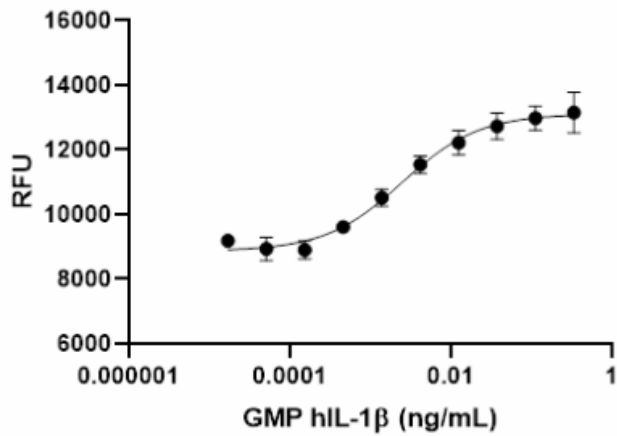
<b>Distribution</b>	IL-1β is expressed in activated monocytes/macrophages.
<b>Function</b>	Interleukin (IL)-1β is a cytokine with a key role in the pathophysiology of local and systemic inflammation. IL-1β induces cytokine, chemokine, proinflammatory molecule secretion, and adhesion molecule expression in diverse cells.
<b>Interaction</b>	Hematopoietic stem and progenitors
<b>Ligand/Receptor</b>	Type I and II IL-1 receptors (IL-1RI and IL-1RII)
<b>Bioactivity</b>	Measured by its ability to induce proliferation of D10.G4.1 mouse helper lymphocytes
<b>Cell Type</b>	Hematopoietic stem and progenitors
<b>Biology Area</b>	Cell Biology, Immunology, Innate Immunity, Neuroinflammation, Neuroscience, Stem Cells
<b>Molecular Family</b>	Cytokines/Chemokines
<b>Antigen References</b>	

1. Stevenson FT, *et al.* 1992. *J Cell Physiol* 152:223-231.
2. Shi J, *et al.* 2007. *J. Immunol.* 179:1245-1253.
3. Dinarello CA. 2006. *Cancer Metastasis Rev* 25:307-313.
4. Boost KM, *et al.* 2008. *BMC Cancer* 8:265.

**Gene ID** [3553](#)

## Product Data

---



GMP recombinant human IL-1 $\beta$  stimulates proliferation of D10.G4.1 cells in a dose-dependent manner with ED<sub>50</sub> range of 2.5 - 12.5 pg/mL.

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

This product is supplied subject to the terms and conditions, including the limited license, located at [www.biolegend.com/terms](http://www.biolegend.com/terms) ("Terms") and may be used only as provided in the Terms. Without limiting the foregoing, BioLegend products may not be used for any Commercial Purpose as defined in the Terms, resold in any form, used in manufacturing, or reverse engineered, sequenced, or otherwise studied or used to learn its design or composition without express written approval of BioLegend. Regardless of the information given in this document, user is solely responsible for determining any license requirements necessary for user's intended use and assumes all risk and liability arising from use of the product. BioLegend is not responsible for patent infringement or any other risks or liabilities whatsoever resulting from the use of its products.

BioLegend, the BioLegend logo, and all other trademarks are property of BioLegend, Inc. or their respective owners, and all rights are reserved.

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