

GMP Recombinant Human IL-1 β (carrier-free)

Catalog# / Size	579414 / 25 μ g 579416 / 100 μ g
Other Names	Catabolin, interleukin-1 beta, preinterleukin 1 beta, pro-interleukin-1-beta.
Description	IL-1 β is a proinflammatory cytokine essential for host responses and resistance to pathogens, including induction of fever, cell proliferation, differentiation, and apoptosis. IL-1 β in humans and mice does not encode a typical signal peptide and, as a result, newly synthesized pro-IL-1 β accumulates within the cytoplasm of activated monocytes and macrophages. Conversion of the inactive pro-IL-1 β to its mature form requires the proteolytic action of IL-1 β -converting enzyme (ICE), also termed caspase-1. Secretion of mature IL-1 β 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-1 β is regarded as a tumor-promoting cytokine. In fact, enhanced tumor metastasis and angiogenesis has been observed under the influence of IL-1 β . IL-1 β is able to facilitate tumor progression in murine models of lung cancer. In addition, upregulation of metastasis and tumor angiogenesis by IL-1 β has been associated with increased activity of matrix metalloproteinases and expression of the pro-angiogenic molecule hepatocyte growth factor.

Product Details

Source	Human IL-1 β , amino acids Ala117-Ser269 (Accession # NM_000576) was expressed in <i>E. coli</i> .
Molecular Mass	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.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 μ m filtered protein solution is in 10 mM NaH ₂ PO ₄ , 150 mM NaCl, pH 7.2.
Endotoxin Level	Less than 0.1 EU per μ g protein as determined by the LAL method
Concentration	500 μ g/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 μ g/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 = 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.
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 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 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .
Disclaimer	GMP Recombinant Proteins. 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: <ul style="list-style-type: none">• Batch-to-batch consistency• Material traceability

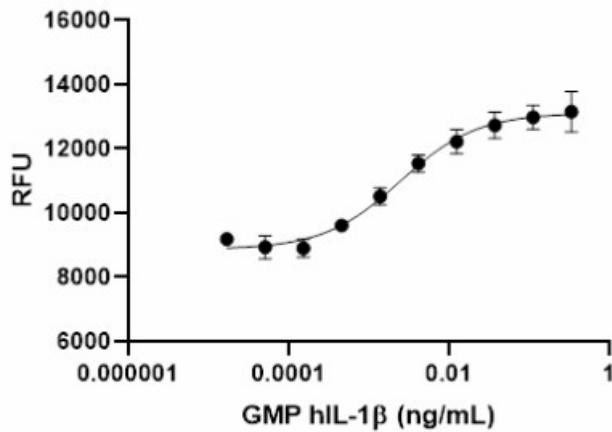
- Documented procedures
- Documented employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of released products

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

Distribution	IL-1 β is expressed in activated monocytes/macrophages.
Function	Interleukin (IL)-1 β is a cytokine with a key role in the pathophysiology of local and systemic inflammation. IL-1 β induces cytokine, chemokine, proinflammatory molecule secretion, and adhesion molecule expression in diverse cells.
Interaction	Hematopoietic stem and progenitors
Ligand/Receptor	Type I and II IL-1 receptors (IL-1RI and IL-1RII)
Bioactivity	Measured by its ability to induce proliferation of D10.G4.1 mouse helper lymphocytes
Cell Type	Hematopoietic stem and progenitors
Biology Area	Cell Biology, Immunology, Innate Immunity, Neuroinflammation, Neuroscience, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none"> 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 β stimulates proliferation of D10.G4.1 cells in a dose-dependent manner with ED₅₀ range of 2.5 - 12.5 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

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