GMP Recombinant Human IL-10 (carrier-free)

Catalog# / Size	571014 / 25 µg 571016 / 100 µg
Other Names	Interleukin-10, B-TCGF, CSIF, TGIF
Description	IL-10 was first described as a cytokine that is produced by T helper 2 (Th2) cell clones. It inhibits interferon (IFN)-γ synthesis in Th1 cells, and therefore it was initially called cytokine synthesis inhibiting factor (CSIF). Macrophages are the main source of IL-10 and its secretion can be stimulated by endotoxin (via Toll-like receptor 4, NF-κB dependent), tumor necrosis factor TNF-α (via TNF receptor p55, NF-κB-dependent), catecholamines, and IL-1. IL-10 controls inflammatory processes by suppressing the expression of proinflammatory cytokines, chemokines, adhesion molecules, as well as antigen-presenting and costimulatory molecules in monocytes/macrophages, neutrophils, and T cells. IL-10 inhibits the production of proinflammatory mediators by monocytes and macrophages such as endotoxin- and IFN-γ-induced release of IL-1α, IL-6, IL-8, G-CSF, GM-CSF, and TNF-α. In addition, it enhances the production of anti-inflammatory mediators such as IL-1RA and soluble TNFα receptors. IL-10 inhibits the capacity of monocytes and macrophages to present antigen to T cells. This is realized by down-regulation of constitutive and IFN-γ-induced cell surface levels of MHC class II, of costimulatory molecules such as CD86 and of some adhesion molecules such as CD58.

Product Details

Source	Human IL-10, amino acids Ser19-Asn178 (Accession # NM_000572), was expressed in *E.coli.*
Molecular Mass	The 160 amino acid recombinant protein has a predicted molecular mass of 18 kD. The DTT-reduced protein migrates at approximately 18 kD and the non-reduced protein migrates at approximately 15 kD by SDS-PAGE. The N-terminal amino acid is Serine.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in 10 mM NaH_2PO_4, 150 mM NaCl, pH 7.2.
Endotoxin Level	Less than 0.1 EU per µg protein as determined by the LAL method
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} = 0.025 - 0.25 ng/mL as determined by the dose-dependent inhibition of IFN-γ induction in PHA activated human PBMC.
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 *ex vivo* cell processing use. Not for use in diagnostic or therapeutic procedures. Our processes include: • Batch-to-batch consistency

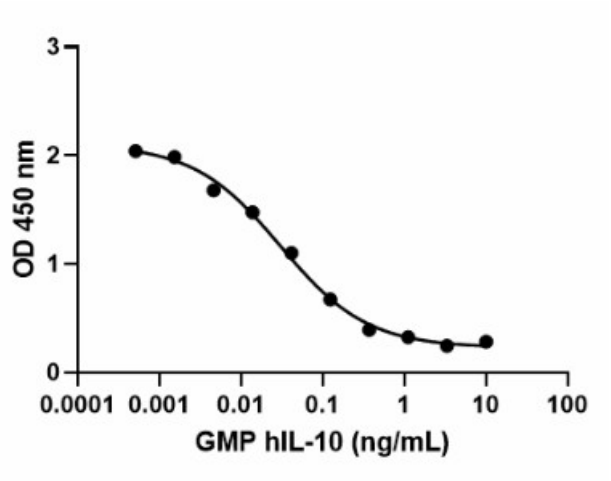
- Material traceability
- Documented procedures
- Documented employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of releaed products

BioLegend GMP recombinant protiens 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

Structure	Cytokine
Distribution	IL-10 is produce by Th2 cells, macrophages, DCs, B cells, CD8+ T cells, regulatory T cells (Tregs), Th1 cells and Th17 cells. In addition, IL-10 is expressed by monocytes, B cells, eosinophils, and mast cells.
Function	IL-10 is an immunoregulatory cytokine. Its main function is the limitation and termination of inflammatory responses and the regulation of differentiation and proliferation of several immune cells such as T cells, B cells, natural killer cells, antigen-presenting cells, mast cells, and granulocytes.
Interaction	IL-10R is expressed in monocytes, NK, B and T cells. In addition, Langerhans cells, dermal dendritic cells, eosinophils, mast cells, and endothelial cells can respond to IL-10.
Ligand/Receptor	IL-10R1 and IL-10R2
Biology Area	Cell Biology, Immunology
Molecular Family	Cytokines/Chemokines
Antigen References	1. Fiorentino DF, et al. 1989. J Exp Med. 170:2081-2095. 2. Ho AS, et al. 1993. P. Natl. Acad. Sci. USA. 90:11267-11271. 3. Hart PH, et al. 1996. J Immunol. 157:3672-3680. 4. Asadullah K, et al. 2003. Pharmacol Rev. 55:241-269. 5. Mosser DM and Zhang X. 2008. Immunol Rev. 226:205-218. 6. Maynard CL and Weaver CT. 2008. Immunol Rev. 226:219-233.
Gene ID	3586

Product Data



GMP recombinant human IL-10 inhibits IFN-γ induction in PHA activated human PBMC in a dose-dependent manner with ED_{50} range of 0.025 - 0.25 ng/mL.

Symbols Glossary*

Symbol	Meaning	Symbol Title	Symbol No.	Symbol	Meaning	Symbol Title	Symbol No.
REF	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	EC REP	Indicates the authorized representative in the European Community.	Authorized representative in the European Community	5.1.2
LOT	Indicates the manufacturer's batch code so that the batch or lot can be identified.	Batch code	5.1.5	IVD	Indicates a medical device that is intended to be used as an in vitro diagnostic medical device.	*In vitro* 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

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