

GMP Recombinant Human IL-21 (carrier-free)

Catalog# / Size	571214 / 25 µg 571216 / 100 µg
Other Names	Interleukin 21, Interleukin-21, IL21
Description	IL-21 was identified by a functional screening from conditioned medium of activated T cells using Baf3-IL-21R transfectants. In normal B cells, IL-21 can mediate cell proliferation, growth arrest, terminal differentiation, or apoptosis, depending on their activation status. IL-21 enhances B-cell proliferation following incubation with an activating CD40 antibody. This result suggests that IL-21 enhances B-cell function following T:B cell interactions. Nevertheless, IL-21 inhibits the proliferation of murine and human B cells stimulated with anti-IgM antibodies. In addition, IL-21 enhances proliferation, cytotoxic activity, and IFN-γ production by CD8-effector T cells, and induces terminal differentiation of activated natural killer (NK) cells. Also, IL-21 can drive Th17 responses in conjunction with TGF-β. Nevertheless, IL-21 is not essential for the differentiation of Th17 cells <i>in vitro</i> or <i>in vivo</i> , as it was shown using IL-21 and IL-21R-deficient mice. IL-6 induces the production of IL-21 from CD4 T cells upon TCR stimulation. In addition, IL-6 and IL-21 are key players in the Tfh differentiation, characterized by increased protein expression of both Bcl-6 and CXCR5. IL-21R complex is formed with the IL-21Rα chain and the common subunits (γc) shared with other interleukins, such as IL-2, IL-4, IL-7, IL-9, and IL-15.

Product Details

Source	Human IL-21, amino acid Gln30-Ser162 (Accession # NM_021803), was expressed in <i>E.coli</i> .
Molecular Mass	The 133 amino acid recombinant protein has a predicted molecular mass of approximately 15.5 kD. The DTT-reduced and non-reduced protein migrate at approximately 16 kD by SDS-PAGE. The N-terminal amino acid is Glutamine.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in PBS, 1 mM EDTA, 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 = 0.6 - 3.0 ng/mL as measured by its ability to induce dose-dependent secretion of IFN-γ by NK-92 cells. ELISA MAX™ Deluxe Set Human IFN-γ (Cat. No. 430104) was used to measure IFN-γ secretion.
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 or better 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

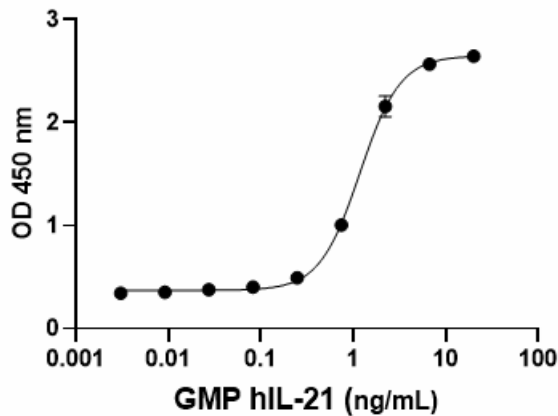
- Material traceability
- Documented procedures
- Documented employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of released products

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.

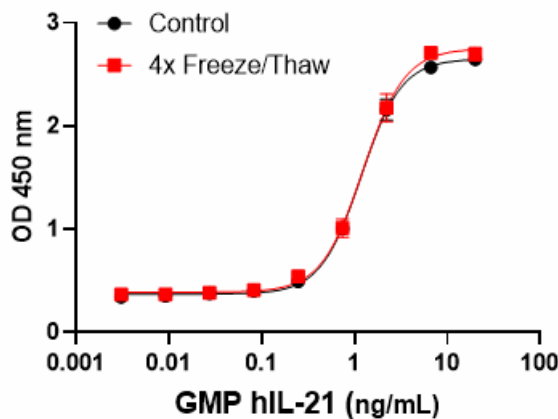
Antigen Details

Structure	Interleukin
Distribution	CD4 activated T cells, Th17 cells, NK T cells
Function	IL-21 induces T- and B-cell proliferation, B-cell Ig class switching to IgG production, decreases dendritic cell function, enhances differentiation of effector and central memory T cells, and regulates T-cell and hematopoietic progenitor cell homeostasis.
Interaction	T cells, B cells, NK cells, and dendritic cells as well as some nonimmune cells, such as fibroblasts and epithelial cells
Ligand/Receptor	IL-21R and the common γ c subunit (CD132) are components of the IL-21R complex.
Bioactivity	Measured by its ability to induce IFN- γ secretion by NK-92 cells.
Cell Type	B cells, Dendritic cells, Hematopoietic stem and progenitors, Tregs
Biology Area	Cell Biology, Immunology, Innate Immunity, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none"> 1. Parrish-Novak J, et al. 2000. Nature. 408:57. 2. De Toter D, et al. 2006. Blood. 107:3708. 3. Korn T, et al. 2007. Nature. 448:484. 4. Coquet JM, et al. 2008. J. Immunol. 180:7097. 5. Dienz O, et al. 2009. J. Exp. Med. 206:69. 6. Kaplan MH, et al. 2011. Blood. 117:6198. 7. Eto D, et al. 2011. PLoS One. 6:e17739.
Gene ID	59067

Product Data



GMP recombinant human IL-21 induces dose-dependent secretion of IFN- γ by NK-92 cells. ELISA MAXTM Deluxe Set Human IFN- γ (Cat No 430104) was used to measure IFN- γ . The ED₅₀ range for this effect is 0.6 - 3.0 ng/mL.



Stability Testing for GMP Recombinant Human IL-21. GMP recombinant human IL-21 was frozen and thawed four times (4x Freeze/Thaw), and compared to a control kept at 4°C (Control). The samples were tested in an IFN- γ secretion assay with NK-92 cells.

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.	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

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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