

Recombinant Human IL-21 (carrier-free)

Catalog# / Size	571208 / 500 µg 571202 / 10 µg 571204 / 25 µg 571206 / 100 µg
Regulatory Status	RUO
Other Names	Interleukin 21
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, and 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 showed 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-21R-alpha chain and the common subunits (γ c) shared with other interleukins, such as IL-2, IL-4, IL-7, IL-9, and IL-15.

Product Details

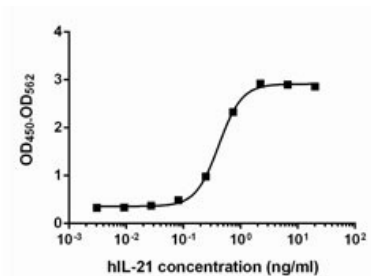
Source	Human IL-21, amino acids Gln30-Ser162 (Accession# NM_021803) was expressed in <i>E. coli</i> .
Molecular Mass	The 133 amino acid recombinant protein has a predicted molecular mass of approximately 15.5 kD. The DTT-reduced and non-reduced protein migrate at approximately 16 kD by SDS-PAGE. The N-terminal amino acid is Glutamine.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in PBS and 1 mM EDTA.
Endotoxin Level	Less than 0.01 ng per µg cytokine as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
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% 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 and stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	The ED ₅₀ is 0.6-3.0 ng/ml, corresponding to a specific activity of 8.3 x 10 ⁵ - 3.3 x 10 ⁶ units/mg as determined by a dose-dependent induction of IFN γ secretion by NK-92 cells.
Application	Bioassay
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 .
Product Citations	1. Dai Q, <i>et al.</i> 2020. Front Immunol. 11:539654. PubMed

2. Jenks SA *et al.* 2018. *Immunity*. 49(4):725-739 . [PubMed](#)
3. Zorro MM, *et al.* 2020. *J Autoimmun.* 108:102422. [PubMed](#)
4. Vidard L, *et al.* 2019. *J Immunol.* 203:676. [PubMed](#)

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.
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, <i>et al.</i> 2000. <i>Nature</i> 408:57. 2. De Toter D, <i>et al.</i> 2006. <i>Blood</i> 107:3708. 3. Korn T, <i>et al.</i> 2007. <i>Nature</i> 448:484. 4. Coquet JM, <i>et al.</i> 2008. <i>J. Immunol.</i> 180:7097. 5. Dienz O, <i>et al.</i> 2009. <i>J. Exp. Med.</i> 206:69. 6. Kaplan MH, <i>et al.</i> 2011. <i>Blood</i> 117:6198. 7. Eto D, <i>et al.</i> 2011. <i>PLoS One</i> 6:e17739.
Gene ID	59067

Product Data



Human IL-21 induced-production of IFN γ by NK-92 cells.

For research use only. Not for diagnostic 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.

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

BioLegend Inc., 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