

Recombinant Mouse IL-21R-Fc chimera (carrier-free)

Catalog# / Size	797504 / 25 µg 797506 / 100 µg
Regulatory Status	RUO
Other Names	Interleukin-21 receptor, IL-21 receptor, IL-21R, novel interleukin receptor, NLR, CD360
Description	<p>IL-21R is a type I transmembrane protein, belonging to the class I cytokine receptor family. IL-21R contains the WSXWS motif, closely resembling IL-2Rβ and IL-4Rα. The intracellular domain of IL-21R includes the Box 1 and Box 2 elements, which are similar to the IL-9R intracellular region. IL-21R is expressed on B cells and at various levels on NK and T cells, and it is up-regulated after activation. Some leukemia and lymphoma have high levels of IL-21R, and its expression is also elevated by CD40 triggering. IL-21R forms a heterodimer with the common γ subunit (CD132), which is shared by the receptors for other interleukins, including IL-2, IL-4, IL-7, IL-9, and IL-15. Upon IL-21 ligation, IL-21R associates with JAK1 and induces phosphorylation cascade and STAT1, 3, 5 transduction pathways. Several evidences shows that IL-21/IL-21R signaling is essential for proliferation and differentiation of B, NK, and T cells. In normal B cells, IL-21 mediates cell proliferation, growth arrest, and terminal differentiation, or apoptosis, depending on their activation status. In addition, mice lacking IL-21R have increased production of serum IgE and decreased production of IgG1. After immunization, antigen-specific IgG production was impaired, indicating IL-21/IL-21R is critical for regulating immunoglobulin production. B cell development and acute CD8⁺ T cell response are normal in IL-21R-deficient mice, but development of memory B cells and maintenance of T cell function during chronic viral infection are impaired. IL-21/IL-21R can enhance NK cytotoxic activity and IFNγ production. In human, the loss of function in IL-21R gene leads to autosomal recessive IL21R immunodeficiency (IL21RID), resulting in dysfunction of B cells, T cells and NK cells, and a primary immunodeficiency syndrome.</p>

Product Details

Source	Mouse IL-21R, amino acid (Cys20-Pro236) (Accession: # Q9JHX3), with a linker and a C-terminal human IgG1 (Pro100-Lys330), was expressed in 293E cells.
Molecular Mass	The 450 amino acid recombinant protein has a predicted molecular mass of approximately 50.98 kD. The DTT-reduced and non-reduced protein migrates at approximately 60 and 120kD respectively by SDS-PAGE. The predicted N-terminal amino acid is Cys.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.22 µm filtered protein solution is in PBS pH 7.2.
Endotoxin Level	Less than 0.1 EU per µg cytokine as determined by the LAL method
Concentration	25 µg size is bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial (please contact technical support for concentration and total µg amount, or use our Lookup tool if you have a lot number.)
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	Recombinant mouse IL-21R-Fc chimera binds to immobilized recombinant mouse IL-21 (Cat. No. 574502) at 2.5 µg/mL in a dose-dependent manner. The ED ₅₀ for this effect is 0.025 – 0.125 µg/mL
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 validated in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any

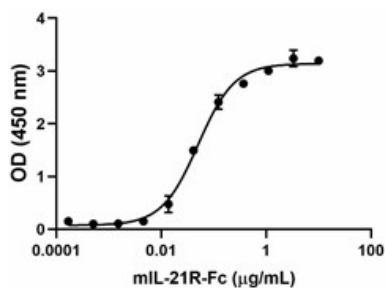
concerns, contact us at tech@biolegend.com.

Antigen Details

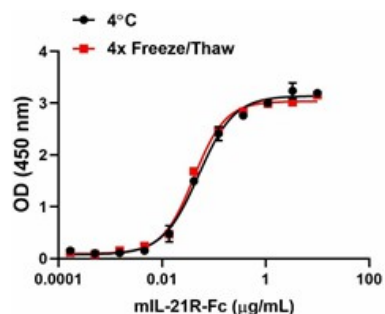
Structure	Cytokine receptor, disulfide bond-linked
Distribution	Resting and activated B cells, T cells, NK cells and dendritic cells, activated macrophages, leukemia, lymphoma; plasma membrane
Function	IL-21/IL-21R induces T and B cell proliferation, B cell Ig class switching to IgG production, decreases dendritic cell function, enhances differentiation of effector and central memory T cells, and regulates T cell and hematopoietic progenitor cell homeostasis.
Interaction	JAK
Ligand/Receptor	IL-21
Bioactivity	Recombinant mouse IL-21R-Fc chimera binds to immobilized recombinant mouse IL-21 (Cat. No. 574502) in a dose-dependent manner.
Cell Type	B cells, Leukocytes, Lymphocytes, NK cells, T cells
Biology Area	Adaptive Immunity, Cell Biology, Cell Proliferation and Viability, Immuno-Oncology, Immunology
Molecular Family	CD Molecules, Cytokine/Chemokine Receptors, Soluble Receptors
Antigen References	<ol style="list-style-type: none">1. Parrish-Noval J, <i>et al.</i> 2000. <i>Nature</i>. 408: 57-63.2. Hamming OJ, <i>et al.</i> 2012. <i>J Biol Chem</i>. 287: 9454-60.3. Fröhlich A, <i>et al.</i> 2009. <i>Science</i>. 324: 1576-80.4. de Tero D, <i>et al.</i> 2006. <i>Blood</i>. 107: 3708-15.5. Ozaki K, <i>et al.</i> 2002. <i>Science</i>. 298: 1630-4.6. Kasaian MT, <i>et al.</i> 2002. <i>Immunity</i>. 16: 559-69.7. Rankin AL, <i>et al.</i> 2011. <i>J Immunol</i>. 186: 667-74.8. Kotlarz D, <i>et al.</i> 2013. <i>J Exp Med</i>. 210: 433-43.9. Akamatsu N, <i>et al.</i> 2007. <i>Cancer Lett</i>. 256: 196-206.10. Mehta DS, <i>et al.</i> 2004. <i>Immunol Rev</i>. 202: 84-95.

Gene ID [60504](#)

Product Data



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Recombinant mouse IL-21R-Fc chimera was aliquoted in PBS, pH 7 at 0.2 mg/mL. One aliquot was frozen and thawed four times (4x Freeze/Thaw) and compared to the control that was kept at 4°C (Control). The samples were tested for their ability to bind to immobilized recombinant mouse IL-21 (Cat. No. 574502) at 2.5 µg/mL in a dose-dependent manner. The ED₅₀ for this effect is 0.025 – 0.125 µg/mL.

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