

Recombinant Human IL-7R α /CD127 (carrier-free)

Catalog# / Size	771008 / 500 μ g 771002 / 10 μ g 771004 / 25 μ g 771006 / 100 μ g
Regulatory Status	RUO
Other Names	IL-7RA, IL-7 Receptor Subunit Alpha, Interleukin 7 Receptor, IL-7R-Alpha, CD127 Antigen, CDW127, Interleukin 7 Receptor Alpha Chain
Description	<p>IL-7 was initially described as a stromal derived factor which is capable of inducing the growth of pre-B cells <i>in vitro</i>. IL-7 acts on a variety of cells through its receptor (IL-7R), a heterodimer consisting of IL-7Rα (CD127) and a common γc chain (CD132) shared by other cytokine (IL-2, IL-4, IL-9, IL-15, and IL-21) receptors. In addition, IL-7Rα is shared with TSLP. The generation of IL-7-deficient and IL-7Rα-deficient mice and monoclonal antibody blocking experiments confirmed the requirement of IL-7 for B-cell development in mice. Nevertheless, mutations in the α chain of the IL-7 receptor in patients with severe combined immunodeficiency (SCID) confirmed that IL-7 is indispensable for T-cell development in humans. However, the presence of B cells in these individuals suggests important differences between the role of IL-7 in murine and human lymphocyte development. Thus, although human B-cell development does not appear to require IL-7, immature human B cells do proliferate in response to IL-7. Nevertheless, most recent information suggests that IL-7 dependence in human lymphopoiesis increases during the progression of ontogeny in cord blood and bone marrow. IL-7 can be associated to hepatocyte growth factor (HGFβ) to form a hybrid cytokine (IL-7/HGFβ), which induces greater proliferation of CFU-S, SLPs, and pre-pro-B cells than does native IL-7. The hybrid cytokine signals through both IL-7R (IL-7Rα plus γc) and c-Met. Soluble forms of the IL-7R α chain (sCD127) have been identified. They are derived from alternative splicing and by release of membrane-bound sCD127. sCD127 acts as an antagonist and is increased by immune activation. sCD127 concentration is increased in Type I diabetes patients, and it is glycosylated. The glycosylated form does not act as an antagonist of IL-7-mediated T-cell expansion. Alterations of the soluble form of IL-7Rα influences risk of multiple sclerosis.</p>

Product Details

Molecular Mass	The 463 amino acid recombinant protein has a predicted molecular mass of approximately 52.7 kD. The DTT-reduced and non-reduced protein migrate at approximately 70 kD and 140 kD respectively by SDS-PAGE. The predicted N-terminal amino acid is Glu.
Purity	> 95% by SDS-PAGE gel as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 μ m filtered protein solution is in PBS pH 7.2.
Endotoxin Level	Less than 0.1 EU per μ g (0.01 ng/ μ g) cytokine as determined by the LAL method.
Concentration	10-25 μ g sizes are bottled at 200 μ g/mL. 100 μ g and larger sizes and larger are bottled at the concentration indicated on the vial.
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% 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	Immobilized recombinant human IL-7R α , at 2 μ g/mL, binds recombinant human IL-7 (Cat. No. 581902) in a dose dependent manner. The ED ₅₀ for this effect is 4 - 20 ng/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 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 .

Antigen Details

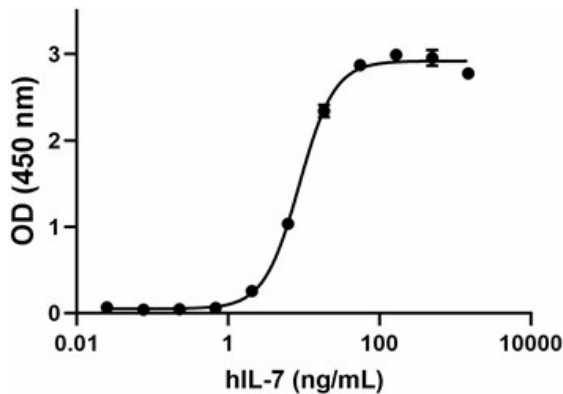
Structure	Homodimer
Distribution	High levels of soluble IL-7Ra in plasma indicate pathologic T-cell immunity in autoimmune, inflammatory, and chronic viral diseases.
Function	Modulation of T-cell functions, development and homeostasis of T cells, promotes antigen-specific T-cell responses, generation of memory T cells.
Ligand/Receptor	IL-7, IL-7/HGF β
Bioactivity	IL-7R inhibits the proliferation of TF-1 cells.
Biology Area	Stem Cells
Molecular Family	Soluble Receptors

Antigen References

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2. Goodwin RG, *et al.* 1990. *Cell.* 60:941.
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4. Lai L, *et al.* 2006. *Blood.* 107:1776.
5. Link A, *et al.* 2007. *Nat. Immunol.* 8:1255.
6. Lundmark F, *et al.* 2007. *Nat. Genet.* 39:1108.
7. Wofford J, *et al.* 2008. *Blood.* 111:2101.
8. Parrish YK, *et al.* 2009. *J. Immunol.* 182:4255.
9. Saini M, *et al.* 2009. *Blood.* 113:5793.
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11. Monti P, *et al.* 2013. *Diabetes.* 62:2500.
12. Lundtoft C, *et al.* 2017. *PLoS Pathog.* 13(6):e1006425.

Gene ID [3575](#)

Product Data



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