

Recombinant Human IL-22 (carrier-free)

Catalog# / Size	571308 / 500 µg 571302 / 10 µg 571304 / 25 µg 571306 / 100 µg
Regulatory Status	RUO
Other Names	IL22, IL-D110, IL-TIF, ILTIF, MGC79382, MGC79384, TIFIL-23, TIFa, zcyto18
Description	IL-22 is a cytokine structurally related to IL-10. It was originally identified in mouse as a gene induced by IL-9 in T cells and mast cells. IL-22 was initially designated as ILTIF (IL-10-related T cell-derived inducible factor). IL-22 belongs to a family of cytokines with limited homology to IL-10, namely IL-10, IL-19, IL-20, IL-24, IL-26, IL-28A, IL-28B and IL-29 (the later three also known as IFN-λ). Human IL-22 shares 79% amino acid identity with mouse IL-22 and 25% identity with human IL-10. IL-22 biological activity is initiated by the binding to a cell surface complex composed of IL-22R1 and IL-10R2 receptor chains and further regulated by interactions with a soluble binding protein, IL-22BP, which share sequence similarity with an extracellular region of IL-22R1 (sIL-22R1). Both chains of the IL-22R complex belong to the class II CRF. Two types of IL-22 binding receptors have been discovered, a membrane-bound receptor and a soluble receptor, both encoded by different genes. IL-22 is produced by immune cells and acts on nonimmune cells to regulate local tissue inflammation. As a product of T helper 17 lineage of CD4 (+) effector lymphocytes, IL-22 plays a critical role in mucosal immunity as well as in deregulated inflammation observed in autoimmune diseases.

Product Details

Source	Human IL-22, amino acids Ala34-Ile179 (Accession # NM_020525) was expressed in <i>E. coli</i> .
Molecular Mass	The 147 amino acid N-terminal methionylated recombinant protein has a predicted molecular mass of 16,880 Da. The DTT-reduced protein migrates at approximately 15kDa and the non-reduced protein migrates at approximately 14kDa by SDS-PAGE.
Purity	Purity is >98%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in 10mM NaH ₂ PO ₄ , 150mM NaCl, pH7.2.
Endotoxin Level	Endotoxin level is <0.1 EU/µg (<0.01ng/µg) protein 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 0.062-0.177 ng/ml, corresponding to a specific activity of 1.61-0.56 X10 ⁷ units/mg, as determined by a dose dependent stimulation of human Colo205 cells in production of IL-10.
Application	Bioassay
Recommended Usage	Use when high specific biological activity is required.
Application Notes	Ligand Blocking: This IL-22 protein is useful as a ligand-blocking specificity control for immunohistochemical or immunofluorescent staining. Bioassay: This IL-22 protein is biologically active, and can be used for in vitro assays. 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.

Application References

(PubMed link indicates BioLegend citation)

1. Dhiman R, *et al.* 2009. *J. Immunol.* 183:6639. [Pubmed](#)

Product Citations

1. Cook L, *et al.* 2019. *Gastroenterology.* 157:1584. [PubMed](#)
2. Ibrahim ML, *et al.* 2018. *Cell Rep.* 25:3036. [PubMed](#)
3. Gorzelak-Pabiś P, *et al.* 2017. *Adv Clin Exp Med.* 26:461. [PubMed](#)

Antigen Details

Structure	Cytokine
Distribution	thymic lymphomas, T cells, activated T cells, macrophages, and mast cells
Function	Enhances the production of acute phase proteins in a hepatocyte cell line, HepG2; Promotes Th17 cells to transmigrate through the blood-brain barrier in multiple sclerosis
Interaction	Interacts with a cell surface complex composed of IL-22R1 and IL-10R2 receptor chains which are expressed in epithelial cells of inflammatory diseases such as psoriasis, Crohn's disease, rheumatoid arthritis, or allergic asthma
Ligand/Receptor	IL-22R1 and IL-10R2 receptor chains
Bioactivity	IL-22 bioactivity was measured by its ability to induce IL-10 in human Colo205 cells
Biology Area	Stem Cells, Immunology, Cell Biology
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Nagalakshmi ML, <i>et al.</i> <i>Intern Immunopharmacol</i> 4:679-691 2004.2. Kebir H, <i>et al.</i> <i>Nat. Med.</i> 13:1173-1175 2007.3. Gu Y, <i>et al.</i> <i>Eur. J. Immunol.</i> 38:1807-1813 2008.4. Pene J, <i>et al.</i> <i>J. Immunol.</i> 180:7423-7430 2008.5. Dumotier L, <i>et al.</i> <i>J Immune</i> 164:1814-1819 2000.6. Xie MH, <i>et al.</i> <i>J. Biol. Chem.</i> 765:31335-31339 2000.7. Jones BC, <i>et al.</i> <i>Structure</i> July 2 2008.8. Kotenko SV, <i>et al.</i> <i>J. Immunol.</i> 166:7096-71033 2001.9. Chang C, <i>et al.</i> <i>Cell Res</i> 16:902-907 2006.
Gene ID	50616

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