

Cell-Vive™ GMP Recombinant Human IL-27 (carrier-free)

Catalog# / Size	589214 / 25 µg 589216 / 100 µg
Other Names	IL-27 (28K subunit), IL-27 (EBI3 subunit)
Description	IL-27 is a heterodimeric cytokine that consists of EBI3, an IL-12p40-related protein, and p28, an IL-12p35-related polypeptide. IL-27 can be allocated to the IL-6/IL-12 superfamily of cytokines which also includes IL-23. This family is defined based on similarities in the structural motifs of the ligands, such as a common four-helix bundle and their receptors, which contain a hematopoietin receptor domain. IL-27 signaling occurs via a receptor complex composed of the signal transducing receptor chains WSX-1 and glycoprotein (gp) 130. Whereas WSX-1 is the IL-27-specific receptor chain, gp130 is the common receptor subunit of IL-6 type cytokines. IL-27 is expressed at sites of inflammation in cytokine-driven autoimmune/inflammatory diseases, such as rheumatoid arthritis, psoriasis, inflammatory bowel disease, and sarcoidosis.
Quality Statement	BioLegend Cell-Vive™ 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 in a dedicated GMP facility compliant with ISO 13485:2016. Specifications and processes include: <ul style="list-style-type: none">• Low endotoxin level (≤ 0.1 EU/µg)• Purity ($\geq 95\%$ or higher)• Bioburden testing• Mycoplasma testing• Batch-to-batch consistency• Vendor qualification• Raw material traceability and documentation• Documented procedures and employee training• Equipment maintenance and monitoring records• Lot-specific certificates of analysis• Quality audits per ISO 13485:2016• QA review of released products

Product Details

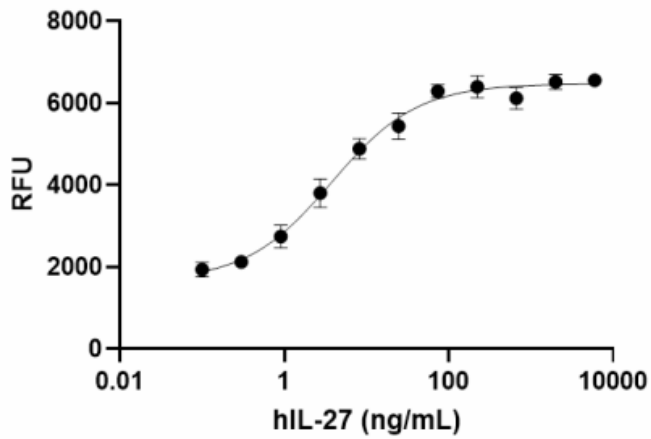
Source	Expressed in CHO cells. Human IL-27 consists of two subunits linked via a 4x(GGGS) bridge: EBV-3 induced gene 3 (EBI3) (Accession# NM_005755.2 Arg21 - Lys229) and p28 (Accession# NM_145659 Phe29 - Pro243) 10 His-tag.
Molecular Mass	The total predicted molecular weight is 50 kD. The non-reduced and the DTT-reduced proteins migrate as one band at approximately 60 kD by SDS-PAGE.
N-terminal Sequence Analysis	Arg-Lys-Gly-Pro-Pro-Ala-Ala-Leu-Thr-Leu
Purity	$\geq 95\%$, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in 20 mM HEPES, 300 mM NaCl, 2 mM CHAPS, pH 7.2
Endotoxin Level	Less than or equal to 0.1 EU per µg of protein as determined by LAL method
Residual Host Cell Protein Content	≤ 0.500 ng/µg by ELISA
Concentration	25 µg and 100 µg sizes are bottled at 0.2 mg/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	Recombinant Human IL-27 induces the proliferation of TF-1 human erythroleukemic cells in a dose-dependent manner. The ED ₅₀ for this effect is 1.5 - 9 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 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 .
Application References	1. Khanam A, <i>et al.</i> 2021. <i>Front Immunol.</i> 11:599648. PubMed
(PubMed link indicates BioLegend citation)	
Disclaimer	BioLegend Cell-Vive™ GMP Recombinant proteins are for research use only. Suitable for <i>ex vivo</i> cell processing. Not for injection or diagnostic or therapeutic 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.

Antigen Details

Structure	Heterodimer
Distribution	Monocytes, macrophages, DC
Function	IL-27 triggers rapid clonal expansion of antigen-specific naive human and mouse CD4 T cell. IL-27 promotes the early Th1 differentiation through up-regulation of ICAM-1 and T-bet, and suppresses the differentiation to Th2 and Th17. In addition, IL-27 suppresses the cytokine production by activated CD4+ T cells in vitro, and TNF-α and IL-12 production by macrophages. This suppressive mechanism is considered to be mediated through IL-10. IL-27 plays a dominant function together with TGF-β in generating IL-10-producing anti-inflammatory Tr1 cells. Additionally, IL-27 exerts IFN-like functions in liver cells, and is a negative regulator of human neutrophils function. IL-27 is predominantly produced early after stimulation of APCs by TLR ligands or infectious agents, and it is induced by TNF-α in human macrophages.
Interaction	Activated T cells, resting NK cells, resting NKT cells, neutrophils, eosinophils, mast cells, hepatic stellate cells, hepatoma cells, and hepatocytes
Ligand/Receptor	IL-27RA (also known as WSX-1 or TCCR) paired with gp130
Bioactivity	Human IL-27 induces proliferation of TF-1 human erythroleukemic cells.
Antigen References	<ol style="list-style-type: none"> 1. Pflanz S, <i>et al.</i> 2002. <i>Immunity.</i> 16:779. 2. Owaki. T, <i>et al.</i> 2005. <i>J Immunol.</i> 175:2191-200. 3. Batten M, <i>et al.</i> 2006. <i>Nat Immunol.</i> 7:929-36. 4. Villarino VA, <i>et al.</i> 2006. <i>J. Immunol.</i> 176:237. 5. Stumhofer JS, <i>et al.</i> 2007. <i>Nat. Immunol.</i> 8:1363-71. 6. Awasthi A, <i>et al.</i> 2007. <i>Nat Immunol.</i> 8:1380-9. 7. Pot C, <i>et al.</i> 2009. <i>J Immunol.</i> 183:797-801. 8. Bender H, <i>et al.</i> 2009. <i>Hepatology.</i> 50:585. 9. Kalliolias GD, <i>et al.</i> 2010. <i>J. Immunol.</i> PMID:20971923.
Gene ID	246778

Product Data



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For Research Use Only. Suitable for *ex vivo* cell processing. Not for injection or diagnostic or therapeutic use.

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