

Recombinant Human IL-34 (carrier free)

Catalog# / Size	577902 / 10 µg 577904 / 25 µg 577906 / 100 µg
Regulatory Status	RUO
Other Names	IL34, C16orf77 homolog
Description	Human IL-34 shares a sequence identity of 99.6%, 72% and 71% with chimpanzee, rat, and mouse IL-34, respectively, on the amino acid level. The IL-34 gene is syntenic in the human, chimpanzee, rat, and mouse genomes. IL-34 has no apparent consensus structural domain or motif, and does not share sequence homology with M-CSF; nevertheless, it binds to the CSFR. These two cytokines are not identical in biological activity and signal activation. IL-34 and CSF show an equivalent ability to support cell growth or survival. However, these cytokines have differing ability to induce the production of chemokines (MCP-1 and eotaxin-2) in primary macrophages, the morphological change in TF-1-fms cells, and the migration of J774A.1 cells. The use of monoclonal antibodies against the CSFR suggests a differential domain binding in the receptor to IL-34 and CSF and, as a result, different bioactivities and signal activation kinetics/strength are produced for these cytokines.

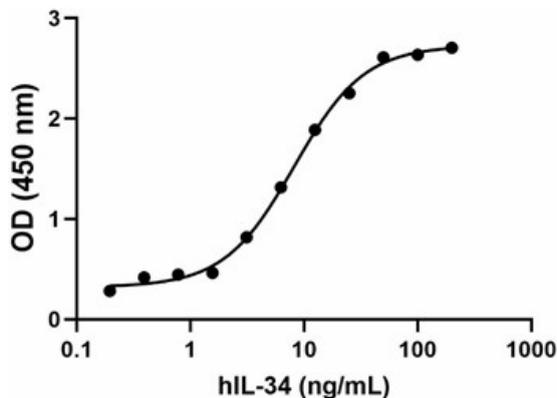
Product Details

Source	The human IL-34 (Accession# NM_152456.2: Met1 - Pro242 with a C-terminal 8His tag) was expressed CHO cells.
Molecular Mass	The 235 amino acid recombinant protein has a predicted molecular mass of 26.7 kD. The DTT-reduced protein migrates at approximately 40 kD, and the non-reduced protein migrates with slightly greater mobility by SDS-PAGE.
Purity	>95%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in 10 mM NaH ₂ PO ₄ , 0.5 M NaCl, pH 7.4.
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	Human IL-34 induces MCP-1 (CCL2) production in human peripheral blood mononuclear cells (PBMC) 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 .
Product Citations	1. Rexach JE, <i>et al.</i> 2020. Cell Rep. 33:108398. PubMed

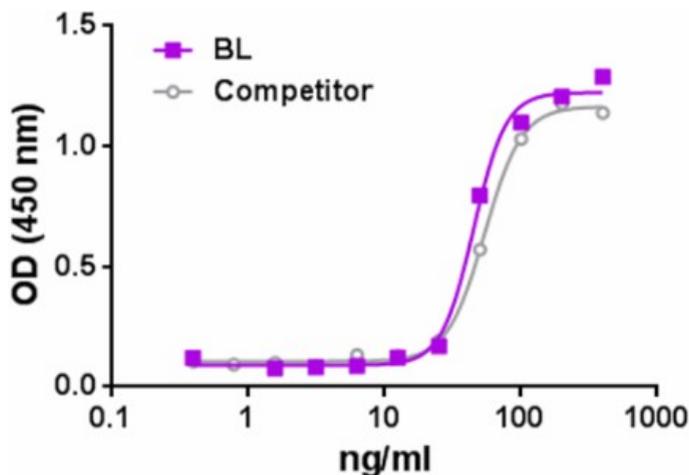
Antigen Details

Structure	Homodimer
Distribution	IL-34 mRNA is expressed in different tissues, including spleen, heart, brain, lung, liver, kidney, thymus, testes, ovary, small intestine, prostate, and colon.
Function	IL-34 increases monocyte's viability, induces macrophage proliferation, and synergizes with other cytokines to generate macrophages and osteoclasts from cultured progenitors. IL-34 promotes the formation of the colony-forming unit-macrophage (CFU-M) in human bone marrow culture. IL-34 supports RANKL-induced osteoclastogenesis by promoting the adhesion and proliferation of osteoclast progenitors. Human IL-34 promotes the osteoclast differentiation from peripheral blood mononucleated cells. In addition, systematic administration of IL-34 to mouse increases the number of CD11b+ cells and reduces bone mass. IL-1 β and TNF- α induce the expression of interleukin-34 mRNA in osteoblast. IL-34 is induced in macrophages infected with equine infectious anemia virus (EIAV).
Interaction	Macrophages, monocytes, myeloid cells.
Ligand/Receptor	CSF-1R.
Biology Area	Immunology, Innate Immunity, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Clanchy F, <i>et al.</i> 2006. <i>J. Leukoc. Biol.</i> 79:757.2. Lin H, <i>et al.</i> 2008. <i>Science</i> 320:807.3. Chihara T, <i>et al.</i> 2010. <i>Cell. Death Differ.</i> 17:1917.4. Wei S, <i>et al.</i> 2010. <i>J. Leukoc. Biol.</i> 88:495.5. Eda H, <i>et al.</i> 2010. <i>Rheumatol. Int.</i> epub.6. Covaleda L, <i>et al.</i> 2010. <i>Virology</i> 397:217.7. Chen Z, <i>et al.</i> 2011. <i>PLoS One</i> 6:e18689.
Gene ID	146433

Product Data



Human IL-34 induces MCP-1 (CCL2) production in human peripheral blood mononuclear cells (PBMC) in a dose-dependent manner. The ED₅₀ for this effect is 4 - 20 ng/mL.



Recombinant human IL-34 induces MCP-1 production in human PBMCs in a dose-dependent manner. BioLegend's protein was compared side-by-side to the leading competitor's equivalent product.

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