Recombinant Human IL-33 (carrier-free)

Catalog# / Size	581802 / 10 µg 581804 / 25 µg 581806 / 100 µg 581808 / 500 µg
Regulatory Status	RUO
Other Names	IL-1F11
Description	IL-33 belongs to the IL-1 family and is closely related in structure to IL-18 and IL-1β. IL-33, IL-1β, and IL-18 are synthesized as biologically inactive precursors and are cleaved by the enzyme caspase-1 to be secreted as active mature forms. IL-33 stimulates target cells by binding to the IL-1R/TLR superfamily member ST2 and, subsequently, activates NF-κB and MAPK pathways via identical signalling events to those observed for IL-1β. In addition, IL-33 is a nuclear factor (NF-HEV) abundantly expressed in high endothelial venules from lymphoid organs that associate with chromatin and exhibit transcriptional regulatory properties.

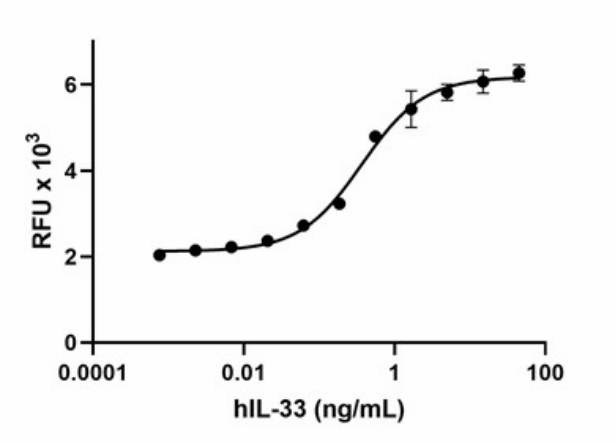
Product Details

Source	Human IL-33, amino acids Ser112-Thr270 (Accession# NM_ 033439) was expressed in *E. coli*.
Molecular Mass	The 159 amino acid recombinant protein has a predicted molecular mass of approximately 18 kD. The DTT-reduced protein migrates at approximately 19 kD and non-reduced protein migrates at approximately 20 kD by SDS-PAGE. The N-terminal amino acid is Serine.
Purity	>95%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in PBS, pH 7.2, 1 mM EDTA, and 2 mM DTT.
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-33 induces the proliferation of mouse D10.G4.1 cells in a dose-dependent manner. The ED_{50} for this effect is 0.1 to 0.5 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. Orzalli MH, *et al.* 2018. Mol Cell. 71:825. PubMed 2. Hurrell BP, *et al.* 2019. Cell Rep. 29:4509. PubMed 3. Lu Y, *et al.* 2020. Immunity. 52:782. PubMed

Antigen Details

Distribution	IL-33 mRNA is expressed in a broad range of human tissues, such as heart, small intestine, brain, ovary, testis, pancreas, and colon. Higher IL-33 expression was detected in human keratinocyte, fibroblast, myocyte, and alveolar cells.
Function	IL-33 drives production of Th2-associated cytokines from *in vitro* polarized Th2 cells. In mice, IL-33 injection induced the expression of IL-4, IL-5, and IL-13 and led to severe pathological changes in the lung and the digestive tract. In addition, IL-33 acts as a chemoattractant for Th2 cells, both *in vitro* and *in vivo*. TNF-α and IL-1β are activators of IL-33 transcription in fibroblasts and keratinocytes.
Ligand/Receptor	IL-33 binds to the IL-1 family receptor T1/ST2 and IL-1RAcP (IL-1 receptor associated protein).
Bioactivity	Activity was tested by D10.G4.1 cell proliferation induced by human IL-33. The ED_{50} is 0.05 to 0.2 ng/ml, corresponding to a specific activity of 5×10^6 to 2×10^7 units/mg.
Biology Area	Cell Biology, Immunology, Stem Cells, Transcription Factors
Molecular Family	Cytokines/Chemokines
Antigen References	1. Schmitz J, *et al.* 2005. *Immunity* 23:479. 2. Barksby HE, *et al.* 2007. *Clin. Exp. Immunol.* 149:217. 3. Arend WP, *et al.* 2008. *Immunol. Rev.* 223:20. 4. Suzukawa M, *et al.* 2008. *J. Immunol.* 181:5981. 5. Moussion C, *et al.* 2008. *PLoS One* 3:e3331. 6. Mildner M, *et al.* 2010. *Cardiovasc. Res.* 87:769.
Gene ID	90865

Product Data



Human IL-33 induces the proliferation of mouse D10.G4.1 cells in a dose-dependent manner. The ED_{50} for this effect is 0.1 to 0.5 ng/mL.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587