

Recombinant Mouse IL-33 (carrier-free)

Catalog# / Size	580502 / 10 µg 580504 / 25 µg 580506 / 100 µg 580508 / 500 µg
Regulatory Status	RUO
Other Names	IL-1f11, Nuclear factor from high endothelial venules (NF-HEV)
Description	IL-33 belongs to the IL-1 family and is closely related in structure to IL-18 and IL-1b. IL-33, IL-1b, and IL-18 are synthesized as biologically inactive precursor 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-1b. In addition, IL-33 is a nuclear factor (NF-HEV) abundantly expressed in high endothelial venules from lymphoid organs that associates with chromatin and exhibits transcriptional regulatory properties.

Product Details

Source	Mouse IL-33, amino acids Ser109-Ile266 (Accession# AAH03847.1) was expressed in <i>E. coli</i> .
Molecular Mass	The 158 amino acid recombinant protein has a predicted molecular mass of approximately 17,554 Da. The DTT-reduced and non-reduced protein migrate at approximately 20 kDa by SDS-PAGE. The N-terminal amino acid is Serine.
Purity	Purity is > 98%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in 20 mM HEPES, 150 mM NaCl, pH 7.2, 10 mM TCEP.
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 and expiration, please enter the lot number in our Certificate of Analysis online tool.
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	ED ₅₀ = 0.0125 - 0.0625 ng/ml determined by the dose dependent stimulation of D10.G4.1 cell proliferation.
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 .

Application References

(PubMed link indicates BioLegend citation)

1. Miller AM, *et al.* 2010. *Circ Res.* 107:650. [PubMed](#)
2. Zaiss MM, *et al.* 2011. *J. Immunol.* 186:6097. [PubMed](#)
3. Barlow JL, *et al.* 2012. *J Allergy Clin Immunol.* 129:191. [PubMed](#)
4. Rosen MJ, *et al.* 2013. *J. Immunol.* 190:1849. [PubMed](#)

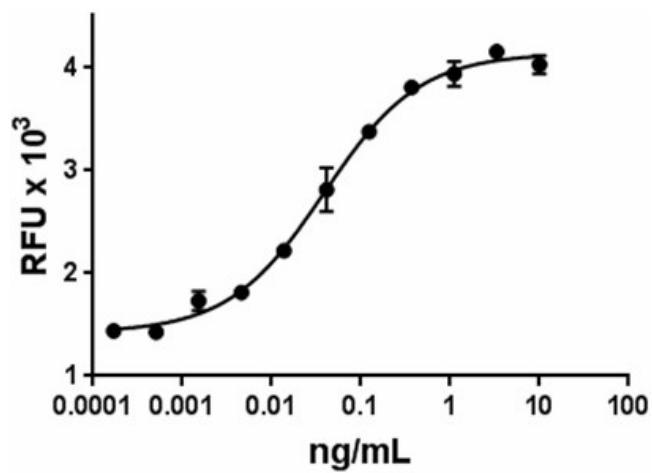
Product Citations

1. Xiao Y, *et al.* 2019. *Cell Mol Gastroenterol Hepatol.* 8:21. [PubMed](#)
2. Dalmas E *et al.* 2017. *Immunity.* 47(5):928-942. [PubMed](#)
3. Frisbee AL, *et al.* 2019. *Nat Commun.* 10:2712. [PubMed](#)
4. Caslin H, *et al.* 2017. *Cell Immunol.* 10.1016/j.cellimm.2017.04.013. [PubMed](#)
5. Bielecki P, *et al.* 2021. *Nature.* 592:128. [PubMed](#)
6. Billroth-MacLurg, AC, *et al.* 2016. *J Immunol.* 197:2208-2218. [PubMed](#)
7. Kenswil KJG, *et al.* 2018. *Cell Rep.* 22:666. [PubMed](#)
8. Boothby IC, *et al.* 2021. *Nature.* 599:667. [PubMed](#)
9. Kienzl M, *et al.* 2020. *Oncoimmunology.* 9:1776059. [PubMed](#)
10. Gao Y, *et al.* 2020. *Front Neurosci.* 1.206944444. [PubMed](#)
11. Hurrell BP, *et al.* 2019. *Cell Rep.* 29:4509. [PubMed](#)
12. Camacho DF, *et al.* 2022. *JCI Insight.* 7:. [PubMed](#)

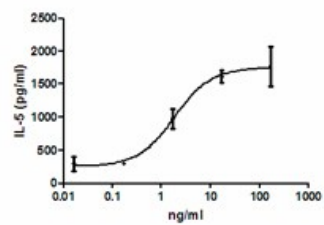
Antigen Details

Distribution	High levels of mouse IL-33 mRNA are detected in the stomach, lung, spinal cord, brain, and skin. Expression within these organs is restricted to a few cell types, such as epithelial cells, fibroblasts, and smooth muscle cells. In addition, mouse IL-33 mRNA is found in resting dendritic cells and activated macrophages. Endothelial cells constitute a major source of IL-33 mRNA in chronically inflamed tissues.
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 <i>in vitro</i> and <i>in vivo</i> . TNF- α and IL-1 β 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)
Biology Area	Cell Biology, Immunology, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Schmitz J, <i>et al. Immunity</i> 2005 23:479-490.2. Barksby HE, <i>et al. C Exp Immunol</i> 2007 149:217-225.3. Arend WP, <i>et al. ImmRev</i> 2008 223:20-38.4. Suzukawa M, <i>et al. J. Immunol.</i> 2008 181:5981-5989.5. Moussio C, <i>et al. PlosOne</i> 2008 10:e3331.
Gene ID	77125

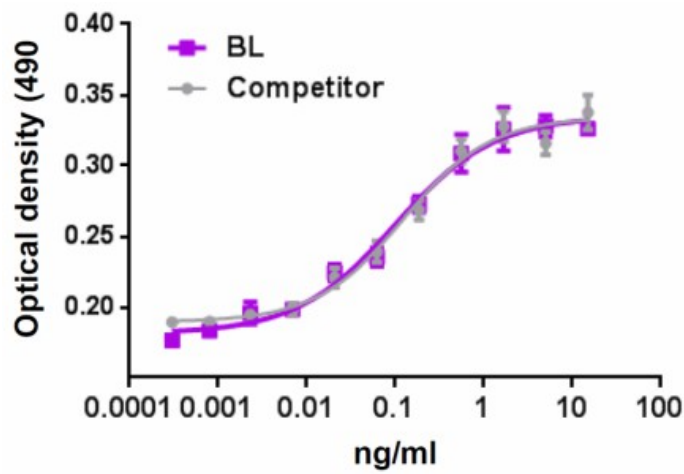
Product Data



Mouse IL-33 induces the proliferation of D10.G4.1 mouse T lymphocytes in a dose dependent manner.



IL-5 induction by mouse IL-33 in splenocytes activated by anti-CD3 and anti-CD28. Data kindly provided Dr. Foo Y. Liew.



Recombinant mouse IL-33 induces proliferation in murine helper T lymphocyte (Th-2) D10.G4.1 cells in a dose dependent manner. BioLegend's product was compared side-by-side to the leading competitor's equivalent product.

For research use only. Not for diagnostic 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.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for

research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

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