

# IL-33

Catalog # PVGS1067

## Product Information

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<b>Primary Accession Species</b>	<a href="#">Q8BVZ5</a> Mouse
<b>Sequence</b>	Ser109-Ile266
<b>Purity</b>	> 98% as analyzed by SDS-PAGE > 98% as analyzed by HPLC
<b>Endotoxin Level Biological Activity</b>	Fully biologically active when compared to standard. The ED <sub>50</sub> as determined by a cell proliferation assay using murine D10S cells is less than 0.5 ng/ml, corresponding to a specific activity of $> 2.0 \times 10^6$ IU/mg.
<b>Expression System</b>	E. coli
<b>Theoretical Molecular Weight</b>	17.5 kDa
<b>Formulation Reconstitution</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS, 1 mM EDTA. It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/ml.
<b>Storage &amp; Stability</b>	Upon receiving, this product remains stable for up to 6 months at -70°C or -20°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles.

## Additional Information

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<b>Gene ID</b>	77125
<b>Other Names</b>	Interleukin-33, IL-33, Interleukin-33(102-266), Interleukin-33(109-266), IL33 {ECO:0000312 MGI:MGI:1924375}
<b>Target Background</b>	Interleukin-33 (IL-33) is a proinflammatory cytokine that belongs to the IL-1 family. IL-33 is expressed in a variety of cells, including epithelial and endothelial cells, smooth muscle cells, macrophages and fibroblasts. The primary receptors for IL-33 are ST2 and IL-1 receptor accessory protein (IL-1RAcP), both of which belong to the IL-1 receptor family. IL-33 is localized to the nucleus of resting cells where it binds to chromatin in the H2A-H2B histone complex as a transcriptional suppressor. IL-33 is secreted by cells during injury which induces a T-helper 2 type inflammatory response. Evidence suggests IL-33 plays a role in autoimmune disease. IL-33's interaction with ST2 can drive allergic pathology and IL-33 has been reported

to play a role in the development of rheumatoid arthritis and systemic lupus erythematosus.

## Protein Information

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<b>Name</b>	IL33 {ECO:0000312 MGI:MGI:1924375}
<b>Function</b>	Cytokine that binds to and signals through the IL1RL1/ST2 receptor which in turn activates NF-kappa-B and MAPK signaling pathways in target cells (PubMed: <a href="#">29045903</a> ). Involved in the maturation of Th2 cells inducing the secretion of T-helper type 2-associated cytokines (By similarity). Also involved in activation of mast cells, basophils, eosinophils and natural killer cells (By similarity). Acts as an enhancer of polarization of alternatively activated macrophages (By similarity). Acts as a chemoattractant for Th2 cells, and may function as an 'alarmin', that amplifies immune responses during tissue injury (By similarity). Induces rapid UCP2-dependent mitochondrial rewiring that attenuates the generation of reactive oxygen species and preserves the integrity of Krebs cycle required for persistent production of itaconate and subsequent GATA3-dependent differentiation of inflammation-resolving alternatively activated macrophages (PubMed: <a href="#">34644537</a> ).
<b>Cellular Location</b>	Nucleus. Chromosome {ECO:0000250 UniProtKB:O95760}. Cytoplasm {ECO:0000250 UniProtKB:O95760}. Cytoplasmic vesicle, secretory vesicle {ECO:0000250 UniProtKB:O95760}. Secreted. Note=Secreted and released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore following cleavage by CELA1 (PubMed:35749514, PubMed:35794369) Associates with heterochromatin and mitotic chromosomes (By similarity). The secretion is dependent on protein unfolding and facilitated by the cargo receptor TMED10; it results in protein translocation from the cytoplasm into the ERGIC (endoplasmic reticulum- Golgi intermediate compartment) followed by vesicle entry and secretion (By similarity). {ECO:0000250 UniProtKB:O95760, ECO:0000269 PubMed:35749514, ECO:0000269 PubMed:35794369}

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