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IL-33

Catalog # PVGS1067

Product Information

Primary Accession	Q8BVZ5
Species	Mouse
Sequence	Ser109-Ile266
Purity	> 98% as analyzed by SDS-PAGE > 98% as analyzed by HPLC
Endotoxin Level	
Biological Activity	Fully biologically active when compared to standard. The ED_{50} as determined by a cell proliferation assay using murine D10S cells is less than 0.5 ng/ml, corresponding to a specific activity of > 2.0×10^6 IU/mg.
Expression System	E. coli
Theoretical Molecular Weight	17.5 kDa
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS, 1 mM EDTA.
Reconstitution	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.
Storage & Stability	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

Gene ID	77125
Other Names	Interleukin-33, IL-33, Interleukin-33(102-266), Interleukin-33(109-266), Il33 {ECO:0000312|MGI:MGI:1924375}
Target Background	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

Name	Il33 {ECO:0000312|MGI:MGI:1924375}
Function	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:29045903). 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:34644537).
Cellular Location	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}

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.