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IL-33

Catalog # PVGS1417

Specification

IL-33 - Product Information

Primary Accession O95760

Species
Human

Sequence
Ser112-Thr270

Purity
> 95% as analyzed by SDS-PAGE

Endotoxin Level
< 0.2 EU/ µg of protein by gel clotting method

Biological Activity
ED₅₀ < 0.5 ng/ml, measured by a cell proliferation assay using D10S cells, corresponding to a specific activity of > 2.0 × 10⁶ units/mg.

Expression System
E. coli

Formulation **Lyophilized after extensive dialysis against PBS.**

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 ddH_2O up to 100 µg/ml.

Storage & Stability
Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

IL-33 - Additional Information

Gene ID 90865

Other Names
Interleukin-33, IL-33, Interleukin-1 family member 11, IL-1F11, Nuclear factor from high endothelial venules, NF-HEV, Interleukin-33 (95-270), Interleukin-33 (99-270), Interleukin-33 (109-270), IL33 (HGNC:16028), C9orf26, IL1F11, NFHEV

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.

IL-33 - Protein Information

Name IL33 (HGNC:16028)

Synonyms C9orf26, IL1F11, NFHEV

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:16286016, PubMed:19841166). Involved in the maturation of Th2 cells inducing the secretion of T-helper type 2- associated cytokines (PubMed:17853410, PubMed:18836528). Also involved in activation of mast cells, basophils, eosinophils and natural killer cells (PubMed:17853410, PubMed:18836528). Acts as an enhancer of polarization of alternatively activated macrophages (PubMed:19841166). Acts as a chemoattractant for Th2 cells, and may function as an 'alarmin', that amplifies immune responses during tissue injury (PubMed:17853410, PubMed:18836528). 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 (By similarity).

Cellular Location
Nucleus. Chromosome. Cytoplasm Cytoplasmic vesicle, secretory vesicle Secreted Note=Secreted and released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore following cleavage by CELA1 (PubMed:35794369). Associates with heterochromatin and mitotic chromosomes (PubMed:17185418). 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 (PubMed:32272059).

Tissue Location
Expressed at high level in high endothelial venules found in tonsils, Peyer patches and mesenteric lymph nodes. Almost undetectable in placenta.

IL-33 - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

IL-33 - Images