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IL-33 Antibody [12H6D12]

Catalog # ASC12002

Product Information

Application	WB, E, IHC-P
Primary Accession	O95760
Other Accession	NP_254274, 15559209
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	12H6D12
Calculated MW	30759
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IL-33 antibody can be used for the detection of IL-33 by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL.

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, C9orf26, IL1F11, NFHEV
Target/Specificity	IL33;
Reconstitution & Storage	IL-33 monoclonal antibody can be stored at -20℃, stable for one year.
Precautions	IL-33 Antibody [12H6D12] is for research use only and not for use in diagnostic or therapeutic procedures.

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.

Background

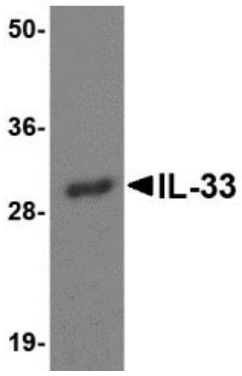
IL-33 Monoclonal Antibody: Interleukin-33 (IL-33) is a recently identified member of the IL-1 family of cytokines whose other members include IL-1αβ, IL-1Ra and IL-18. Its receptor has been shown to be ST2, an IL-1 receptor family member that also acts as a negative regulator of TLR-IL-1R signaling and IL-1R accessory protein (IL-1RAcP). Receptor binding of IL-33 activates NF-κB and MAP kinases and induces the expression of TH2-associated cytokines such as IL-4, IL-5 and IL-6. Prolonged IL-33 treatment of mice led to the development of eosinophilia, splenomegaly, and severe pathological changes in mucosal organs such as lungs, esophagus and small intestine. Recent experiments have shown that IL-33 can also co-localize with heterochromatin and possesses transcriptional repressor activities, indicating that IL-33 may function as both a proinflammatory cytokine and an intracellular nuclear factor with transcriptional regulatory properties. Despite its predicted molecular weight, IL-33 will often run at higher molecular weight in SDS-PAGE.

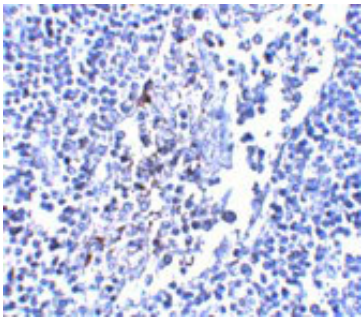
References

Schmitz J, Owyang A, Oldham E, et al. IL-33, and interleukin-1-like cytokine that signals via the IL-1 receptor-related protein ST2 and induces T helper type 2-associated cytokines. Immunity 2005; 23:479-90.
Dinarello CA. Interleukin-18, a proinflammatory cytokine. Eur. Cytokine Netw. 2000; 11:483-6.
Brint EK, Xu D, Liu H, et al. ST2 is an inhibitor of interleukin 1 receptor and Toll-like receptor 4 signaling and maintains endotoxin tolerance. Nat. Immunol. 2004; 5:373-9.
Chackerian AA, Oldham ER, Murphy EE, et al. IL-1 receptor accessory protein and ST2 comprise the IL-33 receptor complex. J. Immunol. 2007; 179:2551-5.

Images

Western blot analysis of IL-33 using 125ng of recombinant IL-33 with IL-33 antibody at 1 µg/mL.





Immunohistochemistry of IL-33 in human lymph node tissue with IL-33 antibody at 5 µg/mL.