Human IL-33 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF3625

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-33 in ELISAs and Western blots. In sandwich ELISAs, less than 0.05% cross-reactivity with recombinant mouse (rm) IL-33 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human IL-33 Ser112-Thr270 Accession # O95760
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

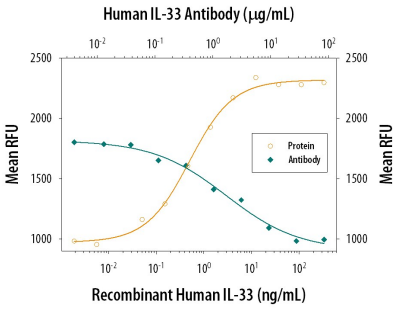
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human IL-33 (Catalog # 3625-IL)
Immunocytochemistry	5-15 µg/mL	Immersion fixed human peripheral blood mononuclear cells treated with PMA and calcium ionomycin
Immunohistochemistry	5-15 µg/mL	See Below
Human IL-33 Sandwich Immunoassay		**Reagent**
ELISA Capture	0.2-0.8 µg/mL	Human IL-33 Antibody (Catalog # AF3625)
ELISA Detection	0.1-0.4 µg/mL	Human IL-33 Biotinylated Antibody (Catalog # BAF3625)
Standard		Recombinant Human IL-33 (Catalog # 3625-IL)
Neutralization	Measured by its ability to neutralize IL-33-induced proliferation in the D10.G4.1 mouse helper T cell line. The Neutralization Dose (ND_{50}) is typically 0.75-3.0 µg/mL in the presence of 1 ng/mL Recombinant Human IL-33 and sub-optimal amounts of Mouse CD3ε Monoclonal Antibody.	

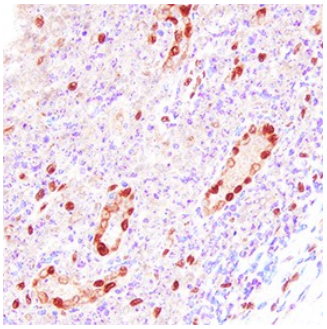
DATA

Neutralization



Cell Proliferation Induced by IL-33 and Neutralization by Human IL-33 Antibody. In the presence of sub-optimal amounts of Hamster Anti-Mouse CD3ε Monoclonal Antibody (Catalog # MAB484), Recombinant Human IL-33 (Catalog # 3625-IL) stimulates proliferation in the D10.G4.1 mouse helper T cell line in a dose-dependent manner (orange line). Under these conditions, proliferation elicited by Recombinant Human IL-33 (1 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human IL-33 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3625). The ND_{50} is typically 0.75-3.0 µg/mL.

Immunohistochemistry



IL-33 in Human Tonsil. IL-33 was detected in immersion fixed paraffin-embedded sections of human tonsil using Goat Anti-Human IL-33 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3625) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to nuclei. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

IL-33, also known as NF-HEV and DVS 27, is a 30 kDa proinflammatory protein that may also regulate gene transcription (1-3). DVS 27 was identifed as a gene that is up-regulated in vasospastic cerebral arteries (1). NF-HEV was described as a nuclear factor that is preferentially expressed in the endothelial cells of high endothelial venules relative to endothelial cells from other tissues (2). IL-33 was identified based on sequence and structural homology with IL-1 family cytokines (3). DVS 27, NF-HEV, and IL-33 share 100% amino acid sequence identity. IL-33 is constitutively expressed in smooth muscle and airway epithelia. It is up-regulated in arterial smooth muscle, dermal fibroblasts, and keratinocytes following IL-1α or IL-1β stimulation (1, 3). Similar to IL-1, IL-33 can be cleaved *in vitro* by caspase-1, generating an N-terminal fragment that is slightly shorter than the C-terminal fragment (3, 4). The N-terminal portion of full length IL-33 contains a predicted bipartite nuclear localization sequence and a homeodomain-like helix-turn-helix DNA binding domain. By immunofluorescence, full length IL-33 localizes to the nucleus in HUVECs and transfectants (2). The C-terminal fragment, corresponding to mature IL-33, binds and triggers signaling through mast cell IL-1 R4/ST2L, a longtime orphan receptor involved in the augmentation of Th2 cell responses (3, 5-7). A ternary signaling complex is formed by the subsequent association of IL-33 and ST2L with IL-1R AcP (8). Stimulation of Th2 polarized lymphocytes with mature IL-33 *in vitro* induces IL-5 and IL-13 secretion (3). *In vivo* administration of mature IL-33 promotes increased production of IL-5, IL-13, IgE, and IgA, as well as splenomegaly and inflammatory infiltration of mucosal tissues (3). Full length and mature human IL-33 share 52-58% aa sequence identity with mouse and rat IL-33. Human IL-33 shares less than 20% aa sequence identity with other IL-1 family proteins.

References:

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