Human ST2/IL-33 R Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF523

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ST2/IL-33 R in direct ELISAs and Western blots. In direct ELISAs, approximately 25% cross-reactivity with recombinant mouse (rm) ST2/IL-33 R is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human ST2/IL-33 R Lys19-Phe328 Accession # BAA02233
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.

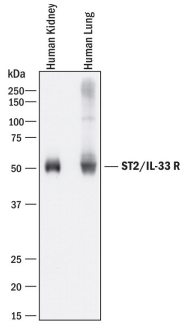
APPLICATIONS

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	0.2 µg/mL	See Below
Flow Cytometry	0.25 µg/10^6 cells	See Below
Simple Western	2 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Neutralization	Measured by its ability to neutralize IL−33-induced IFN-γ secretion in Human Peripheral Blood Mononuclear cells (PBMC). Blom, L and Poulsen, LK (2012) JI 189:4331. The Neutralization Dose (ND_{50}) is typically 0.1-0.6 µg/mL in the presence of 1 ng/mL Recombinant Human IL−33.	

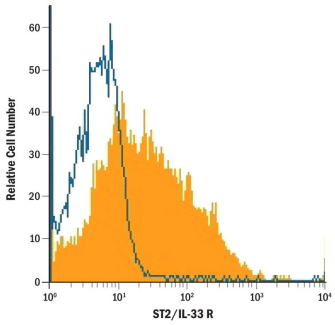
DATA

Western Blot



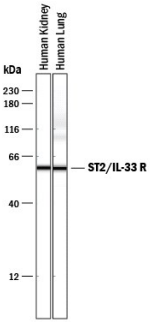
Detection of Human ST2/IL-33 R by Western Blot. Western blot shows lysates of human kidney tissue and human lung tissue. PVDF membrane was probed with 0.2 µg/mL of Goat Anti-Human ST2/IL-33 R Antigen Affinity-purified Polyclonal Antibody (Catalog # AF523) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for ST2/IL-33 R at approximately 50 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



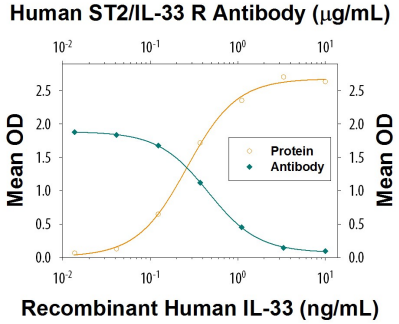
Detection of ST2/IL-33 R in KG-1a Human Cell Line by Flow Cytometry. KG-1a human acute myelogenous leukemia cell line was stained with Goat Anti-Human ST2/IL-33 R Antigen Affinity-purified Polyclonal Antibody (Catalog # AF523, filled histogram) or isotype control antibody (Catalog # AB-108-C, open histogram), followed by Allophycocyanin-conjugated Anti-Goat IgG Secondary Antibody (Catalog # F0108).

Simple Western



Detection of Human ST2/IL-33 R by Simple Western™. Simple Western lane view shows lysates of human kidney tissue and human lung tissue, loaded at 0.2 mg/mL. A specific band was detected for ST2/IL-33 R at approximately 60 kDa (as indicated) using 2 µg/mL of Goat Anti-Human ST2/IL-33 R Antigen Affinity-purified Polyclonal Antibody (Catalog # AF523) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

Neutralization



IFN-γ Secretion Induced by IL-33 and Neutralization by Human ST2/IL-33 R Antibody. Recombinant Human IL-33 induces IFN-γ secretion in Human Peripheral Blood Mononuclear cells (PBMC) in the presence of 0.25 ng/mL Recombinant Human IL-12 (Catalog # 219-IL) in a dose-dependent manner (orange line), as measured by the Human IFN-γ Q-kit (Catalog # DIF50). Under these conditions, IFN-γ secretion elicited by IL-33 is neutralized (green line) by increasing concentrations of Goat Anti-Human ST2/IL-33 R Antigen Affinity-purified Polyclonal Antibody (Catalog # AF523). The ND_{50} is typically 0.1-0.6 µg/mL.

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Human ST2/IL-33 R Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF523

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.

BACKGROUND

ST2, also known as IL-1 R4 and T1, is an Interleukin-1 receptor family glycoprotein that contributes to Th2 immune responses (1, 2). Human ST2 consists of a 310 amino acid (aa) extracellular domain (ECD) with three Ig-like domains, a 21 aa transmembrane segment, and a 207 aa cytoplasmic domain with an intracellular TIR domain (3, 4). Alternate splicing of the 120 kDa human ST2 generates a soluble 60 kDa isoform that lacks the transmembrane and cytoplasmic regions as well as an isoform that additionally lacks the third Ig-like domain (4). Within the ECD, human ST2 shares 68% and 64% aa sequence identity with mouse and rat ST2, respectively. ST2 is expressed on the surface of mast cells, activated Th2 cells, macrophages, and cardiac myocytes (5-8). It binds IL-33, a cytokine that is upregulated by inflammation or mechanical strain in smooth muscle cells, airway epithelia, keratinocytes, and cardiac fibroblasts (5, 9). IL-33 binding induces the association of ST2 with IL-1R AcP, a shared signaling subunit that also associates with IL-1 RI and IL-1 R rp2 (1, 10, 11). In macrophages, ST2 interferes with signaling from IL-1 RI and TLR4 by sequestering the adaptor proteins MyD88 and Mal (7). In addition to its role in promoting mast cell and Th2 dependent inflammation, ST2 activation enhances antigen induced hypernociception and protects from atherosclerosis and cardiac hypertrophy (5, 12-14). The soluble ST2 isoform is released by activated Th2 cells and strained cardiac myocytes and is elevated in the serum in allergic asthma (6, 8, 15). Soluble ST2 functions as a decoy receptor that blocks IL-33's ability to signal through transmembrane ST2 (10, 13-15).

References:

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