

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse ST2/IL-33 R in ELISAs.
Source	Monoclonal Rat IgG _{2B} Clone # 245707
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	S. frugiperda insect ovarian cell line Sf 21-derived recombinant mouse ST2/IL-33 R Ser27-Arg332 Accession # P14719
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
Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
Mouse ST2/IL-33 R Sandwich Immunoassay		Reagent
ELISA Capture	2-8 µg/mL	Mouse ST2/IL-33 R Antibody (Catalog # MAB10041)
ELISA Detection Standard	0.1-0.4 µg/mL	Mouse ST2/IL-33 R Biotinylated Antibody (Catalog # BAF1004) Recombinant Mouse ST2/IL-33 R Fc Chimera (Catalog # 1004-MR)
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 proliferation in the D10.G4.1 mouse helper T cell line. Schmitz, J. et al. (2005) Immunity 23:479. The Neutralization Dose (ND ₅₀) is typically 0.5-3 µg/mL in the presence of 1 ng/mL Recombinant Human IL-33.	

DATA

Flow Cytometry

Detection of ST2/IL-33 R in P815 Mouse Cell Line by Flow Cytometry.
P815 mouse mastocytoma cell line was stained with Rat Anti-Mouse ST2/IL-33 R Monoclonal Antibody (Catalog # MAB10041, filled histogram) or isotype control antibody (Catalog # MAB0061, open histogram), followed by Allophycocyanin-conjugated Anti-Rat IgG F(ab)₂ Secondary Antibody (Catalog # F0113).

Neutralization

Cell Proliferation Induced by IL-33 and Neutralization by Mouse ST2/IL-33 R Antibody. Recombinant Human IL-33 induces proliferation in the D10.G4.1 mouse helper T cell line in a dose-dependent manner (orange line), as measured by the Resazurin (Catalog # AR002). Under these conditions, proliferation elicited by IL-33 is neutralized (green line) by increasing concentrations of Rat Anti-Mouse ST2/IL-33 R Monoclonal Antibody (Catalog # MAB10041). The ND₅₀ is typically 0.5-3 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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. <ul style="list-style-type: none"> ● 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). Mouse ST2 consists of a 306 amino acid (aa) extracellular domain (ECD) with three Ig-like domains, a 23 aa transmembrane segment, and a 212 aa cytoplasmic domain with an intracellular TIR domain (3). Alternate splicing of the 120 kDa mouse ST2 generates a soluble 60 kDa isoform that lacks the transmembrane and cytoplasmic regions (3). Within the ECD, mouse ST2 shares 68% and 81% aa sequence identity with human and rat ST2, respectively. ST2 is expressed on the surface of mast cells, activated Th2 cells, macrophages, and cardiac myocytes (4-7). It binds IL-33, a cytokine that is up-regulated by inflammation or mechanical strain in smooth muscle cells, airway epithelia, keratinocytes, and cardiac fibroblasts (4, 8). 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 Rrp2 (1, 9, 10). In macrophages, ST2 interferes with signaling from IL-1 RI and TLR4 by sequestering the adaptor proteins MyD88 and Mal (6). 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 (4, 11-13). The soluble ST2 isoform is released by activated Th2 cells and strained cardiac myocytes and is elevated in the serum in allergic asthma (5, 7, 14). Soluble ST2 functions as a decoy receptor that blocks IL-33's ability to signal through transmembrane ST2 (9, 12-14).

References:

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