

DESCRIPTION

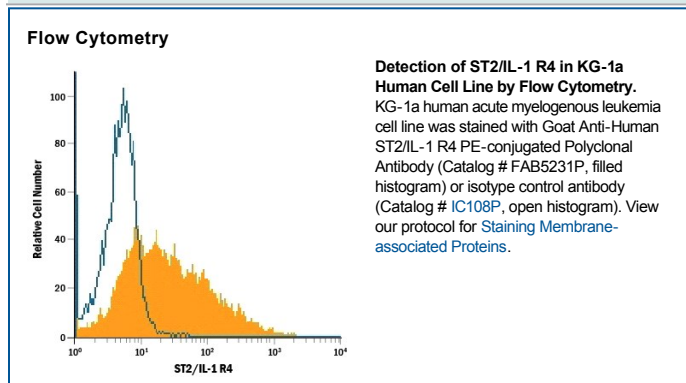
Species Reactivity	Human
Specificity	Detects human ST2/IL-1 R4 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) IL-1 RI, rhIL-1 RII, rhIL-18 RI, and rhST-7 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human ST2/IL-1 R4 Lys19-Phe328 Accession # BAA02233
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

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 Rrp2 (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:

1. Barksby, H.E. *et al.* (2007) *Clin. Exp. Immunol.* **149**:217.
2. Gadina, M. and C.A. Jefferies (2007) *Science STKE* **2007**:pe31.
3. Tominaga, S. *et al.* (1992) *Biochim. Biophys. Acta* **1171**:215.
4. Li, H. *et al.* (2000) *Genomics* **67**:284.
5. Schmitz, J. *et al.* (2005) *Immunity* **23**:479.
6. Lecart, S. *et al.* (2002) *Eur. J. Immunol.* **32**:2979.
7. Brint, E.K. *et al.* (2004) *Nat. Immunol.* **5**:373.
8. Weinberg, E.O. *et al.* (2002) *Circulation* **106**:2961.
9. Sanada S. *et al.* (2007) *J. Clin. Invest.* **117**:1538.
10. Palmer, G. *et al.* (2008) *Cytokine* **42**:358.
11. Chackerian, A.A. *et al.* (2007) *J. Immunol.* **179**:2551.
12. Allakhverdi, Z. *et al.* (2007) *J. Immunol.* **179**:2051.
13. Verri Jr., W.A. *et al.* (2008) *Proc. Natl. Acad. Sci.* **105**:2723.
14. Miller, A.M. *et al.* (2008) *J. Exp. Med.* **205**:339.
15. Hayakawa, H. *et al.* (2007) *J. Biol. Chem.* **282**:26369.