

DESCRIPTION

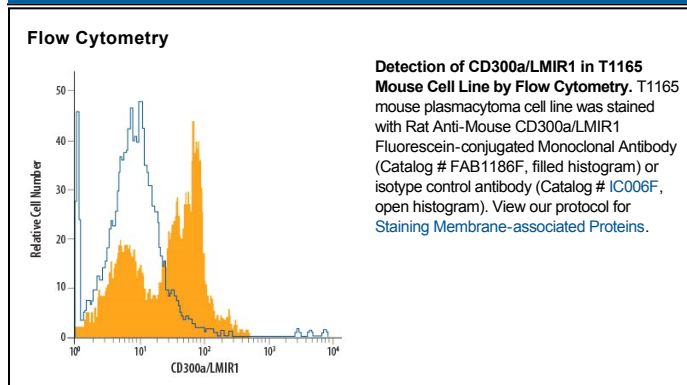
Species Reactivity	Mouse
Specificity	Detects mouse CD300a/LMIR1 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human LMIR1, 2, 3, 4, 5, 6, recombinant mouse LMIR3, 4, or 5 is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 172224
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse CD300a/LMIR1 Leu28-Arg183 Accession # BAC80268
Conjugate	Fluorescein Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm (FITC)
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. ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

CD300a, also known as LMIR1, CMRF-35H, IRp60, CLM-8, and MAIR-1, is a 60 kDa glycoprotein member of the immunoglobulin superfamily (1). Mouse CD300a consists of a 158 amino acid (aa) extracellular domain (ECD) with one Ig-like V-type domain, a 21 aa transmembrane segment, and a 112 aa cytoplasmic domain that contains three immunoreceptor tyrosine-based inhibitory motifs (ITIMs) and a non-canonical ITIM (2, 3). Within the ECD, mouse CD300a shares 40% and 66% aa sequence identity with human and rat CD300a, respectively. Alternate splicing generates an additional mouse CD300a isoform with a 4 aa deletion following the Ig-like domain (3). In mouse, CD300a is expressed on peripheral eosinophils, mast cells, neutrophils, dendritic cells, macrophages, and some B cells (2-4). Antibody cross-linking of CD300a induces phosphorylation of tyrosine residues in the cytoplasmic domain. This leads to the recruitment of phosphatases SHIP, SHP-1, and SHP-2 and inhibition of NK cell, eosinophil, and mast cell activation (2, 3, 5-7). Cross-linking of CD300a to other surface proteins such as SCF R or Fc epsilon RI on mast cells, Fc gamma RIIA on neutrophils, or CCR3 on mast cells and eosinophils inhibits downstream signaling from those receptors (4, 8-10). CD300a cross-linking also limits the *in vivo* activities of these cells with a subsequent reduction of allergic inflammation symptoms (4, 7, 9).

References:

1. Clark, G.J. *et al.* (2009) Trends Immunol. **30**:209.
2. Kumagai, H. *et al.* (2003) Biochem. Biophys. Res. Commun. **307**:719.
3. Yotsumoto, K. *et al.* (2003) J. Exp. Med. **198**:223.
4. Munitz, A. *et al.* (2006) J. Allergy Clin. Immunol. **118**:1082.
5. Cantoni, C. *et al.* (1999) Eur. J. Immunol. **29**:3148.
6. Munitz, A. *et al.* (2006) Blood **107**:1996.
7. Bachelet, I. *et al.* (2005) J. Immunol. **175**:7989.
8. Bachelet, I. *et al.* (2008) J. Immunol. **180**:6064.
9. Bachelet, I. *et al.* (2006) J. Allergy Clin. Immunol. **117**:1314.
10. Alvarez, Y. *et al.* (2008) Mol. Immunol. **45**:253.