

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse CD300a/LMIR1 in direct ELISAs. In direct ELISAs, approximately 2% cross-reactivity with recombinant mouse (rm) LMIR2 is observed and no cross-reactivity with recombinant human LMIR1, 2, 3, 4, 5, 6, or rmlMIR3, 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	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2 mg/mL 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	0.25-1 µg/10 ⁶ cells	Mouse T1165 plasmocytoma cell line

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-I, 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:

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