

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 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 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:

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.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.