

## DESCRIPTION

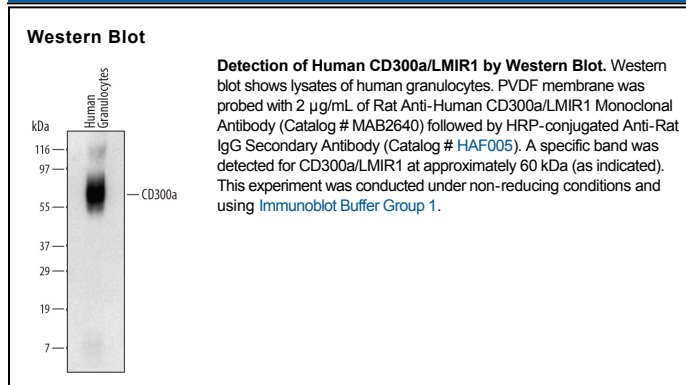
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human CD300a/LMIR1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, 100% cross-reactivity with recombinant human LMIR2 (CMRF-35A) is observed and no cross-reactivity with recombinant human LMIR3, 4, 5, or 6 is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 232612
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Y3 rat myeloid cell line transfected with human CD300a/LMIR1
<b>Formulation</b>	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
<b>Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	Human whole blood
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
<b>Western Blot</b>	Human granulocytes under non-reducing conditions only	

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

CD300a, also known as LMIR1 (in rodents), CMRF-35H, IRp60, CLM-8, and MAIR-I, is a 60 kDa glycoprotein member of the immunoglobulin superfamily (1). Human CD300a consists of a 163 amino acid (aa) extracellular domain (ECD) with one Ig-like V-type domain, a 21 aa transmembrane segment, and a 98 aa cytoplasmic domain that contains three immunoreceptor tyrosine-based inhibitory motifs (ITIMs) and a non-canonical ITIM (2). Alternative splicing may generate additional isoforms that either lack the Ig-like domain or contain only the cytoplasmic domain. Within the ECD, human CD300a shares 40% and 43% aa sequence identity with mouse and rat LMIR1, respectively. In human, CD300a is expressed on peripheral blood eosinophils, mast cells, neutrophils, plasmacytoid dendritic cells, and various T cell subsets (3-7). Antibody crosslinking 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). Crosslinking 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 (5, 10-12). CD300a crosslinking also limits the *in vivo* activities of these cells with a subsequent reduction of allergic inflammation symptoms (4, 11, 12).

**References:**

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