Porcine CD31/PECAM-1 Antibody

Monoclonal Rat IgG_1 Clone # 377537

Catalog Number: MAB33871

DESCRIPTION

Species Reactivity	Porcine
Specificity	Detects porcine CD31/PECAM-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) CD31, recombinant mouse (rm) CD31, rhVCAM-1, rhICAM-1, rhICAM-2, rhICAM-3, rmICAM-5, or rmMADCAM-1 is observed.
Source	Monoclonal Rat IgG_1 Clone # 377537
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant porcine CD31/PECAM-1 Gln28-Lys602 (predicted) Accession # Q95242
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

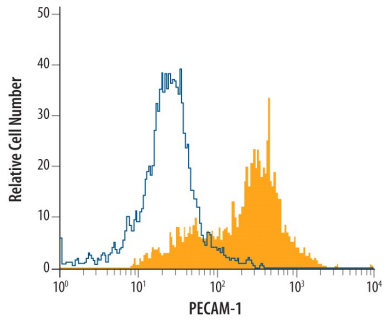
APPLICATIONS

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
Western Blot	1 µg/mL	Recombinant Porcine CD31/PECAM-1 (Catalog # 3387-PC)
Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Flow Cytometry



Detection of CD31/PECAM-1 in Porcine PBMCs by Flow Cytometry. Porcine peripheral blood mononuclear cells were stained with Rat Anti-Porcine CD31/PECAM-1 Monoclonal Antibody (Catalog # MAB33871, filled histogram) or isotype control antibody (Catalog # MAB005, open histogram), followed by Phycoerythrin-conjugated Anti-Rat IgG $F(ab')_2$ Secondary Antibody (Catalog # F0105B).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	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
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CD31, also known as PECAM-1 (platelet-endothelial cell adhesion molecule-1), is a 130 kDa type I transmembrane glycoprotein adhesion molecule in the immunoglobulin superfamily (1, 2). Expression is restricted to the vascular system, especially endothelial cells, platelets, monocytes, neutrophils and lymphocyte subsets. CD31 is concentrated at cell-cell junctions and is required for transendothelial migration (TEM) (1-3). The extracellular domain (ECD) of CD31 has ten potential N-glycosylation sites and six C2-type Ig-like domains, the first of which is critical for adhesion and extravasation (3, 4). The cytoplasmic domain contains immunoregulatory tyrosine-based inhibitory and switch motifs (ITIM, ITSM) that mediate both inhibition and activation via phosphotyrosine-mediated engagement of SH2-containing signaling molecules (1, 5). Metalloproteinase-mediated ectodomain shedding occurs during apoptosis (6) but increased serum CD31 ectodomain in HIV and active multiple sclerosis occurs independent of apoptosis (7, 8). In humans, expression of six isoforms with exon deletions in the cytoplasmic domain is tissue- and stage-specific, but full-length CD31 is predominant. A form lacking the ITSM predominates in mouse (9). Porcine CD31 ECD shows 74%, 73%, 70%, 63% and 62% amino acid (aa) identity with bovine, canine, human, mouse and rat CD31, respectively. CD31 participates with other adhesion molecules for most functions but is the critical molecule for TEM. Homotypic CD31 adhesion in trans combined with cycling of CD31 to and from surface-connected endothelial cell vesicles leads leukocytes across endothelial tight junctions (3, 10). Homotypic adhesion and signaling functions also strongly suppress mitochondria-dependent apoptosis (11). In platelets, PECAM-1 is necessary for limiting thrombus formation (12) and promoting integrin-mediated clot retraction and platelet spreading (13), but mechanisms for these phenomena are unclear. $CD31^{-/-}$ mice are deficient in chemokine-mediated chemotaxis (14).

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