# Mouse CD31/PECAM-1
# Alexa Fluor® 647-conjugated Antibody

Monoclonal Rat $IgG_1$ Clone # 693102

Catalog Number: FAB3628R

100 µg

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Mouse |
| **Specificity** | Detects mouse CD31/PECAM-1 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse (rm) DCC, rmICAM-1, -2, -5, rmMAdCAM-1, rmVCAM-1, recombinant porcine CD31/PECAM-1, recombinant human (rh) CD31/PECAM-1, rhCEACAM-1, rhSIGIRR, rhICAM-3, or rhICAM-4 is observed. |
| **Source** | Monoclonal Rat $IgG_1$ Clone # 693102 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | NS0 mouse myeloma cell line transfected with mouse CD31/PECAM-1<br>Glu18-Lys590<br>Accession # Q08481 |
| **Conjugate** | Alexa Fluor 647<br>Excitation Wavelength: 650 nm<br>Emission Wavelength: 668 nm |
| **Formulation** | Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.<br><br>*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 splenocytes |

## PREPARATION AND STORAGE

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|---|---|
| **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.**<br>● 12 months from date of receipt, 2 to 8 °C as supplied. |

## BACKGROUND

PECAM-1 (platelet-endothelial cell adhesion molecule-1; also known as CD31) is a 130 kDa type I transmembrane glycoprotein adhesion molecule in the immunoglobulin superfamily (1, 2). Expression is restricted to cells involved in circulation, 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-linked 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). Mouse CD31 ECD shows 77%, 63%, 63%, 63% and 61% amino acid (aa) identity with rat, human, canine, porcine and bovine CD31, respectively. CD31 participates with other adhesion molecules in some 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, CD31 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).

**References:**


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