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CD31 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1104a

Specification

CD31 Antibody - Product Information

Application	**WB, IHC, ICC, E**
Primary Accession	P16284
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG1**

Description
CD31, also known as platelet endothelial cell adhesion molecule 1 (PECAM1), is a type I integral membrane glycoprotein and a member of the immunoglobulin superfamily of cell surface receptors.It is constitutively expressed on the surface of endothelial cells, and concentrated at the junction between them. The antibody reacts with the murine form of the Platelet-Endothelial Cell Adhesion Molecule. The reactivity of the antibody is restricted to the isoform of the molecule that is selectively expressed by endothelial cells.The antigen is predominantly present at the lateral borders of endothelial cells as described for human PECAM-1.It is also weakly expressed on many peripheral lymphoid cells and platelets.CD31 has been used to measure angiogenesis in association with tumor recurrence. Other studies have also indicated that CD31 and CD34 can be used as markers for myeloid progenitor cells and recognize different subsets of myeloid leukemia infiltrates (granular sarcomas).

Immunogen
Purified recombinant fragment of human CD31 expressed in E. Coli.

Formulation
Ascitic fluid containing 0.03% sodium azide.

CD31 Antibody - Additional Information

Gene ID 5175

Other Names
Platelet endothelial cell adhesion molecule, PECAM-1, EndoCAM, GPIIA', PECA1, CD31, PECAM1

Dilution
WB~~1/500 - 1/2000
IHC~~1/500 - 1/2000
ICC~~N/A
E~~N/A

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

CD31 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

CD31 Antibody - Protein Information

Name PECAM1

Function
Cell adhesion molecule which is required for leukocyte transendothelial migration (TEM) under most inflammatory conditions (PubMed:17580308, PubMed:19342684). Tyr-690 plays a critical role in TEM and is required for efficient trafficking of PECAM1 to and from the lateral border recycling compartment (LBRC) and is also essential for the LBRC membrane to be targeted around migrating leukocytes (PubMed:19342684). Trans-homophilic interaction may play a role in endothelial cell-cell adhesion via cell junctions (PubMed:27958302). Heterophilic interaction with CD177 plays a role in transendothelial migration of neutrophils (PubMed:17580308). Homophilic ligation of PECAM1 prevents macrophage-mediated phagocytosis of neighboring viable leukocytes by transmitting a detachment signal (PubMed:12110892). Promotes macrophage-mediated phagocytosis of apoptotic leukocytes by tethering them to the phagocytic cells; PECAM1-mediated detachment signal appears to be disabled in apoptotic leukocytes (PubMed:12110892). Modulates bradykinin receptor BDKRB2 activation (PubMed:18672896). Regulates bradykinin- and hyperosmotic shock-induced ERK1/2 activation in endothelial cells (PubMed:18672896). Induces susceptibility to atherosclerosis (By similarity).

Cellular Location
Cell membrane; Single-pass type I membrane protein. Note=Cell surface expression on neutrophils is down-regulated upon fMLP or CXCL8/IL8- mediated stimulation. [Isoform Delta15]: Cell junction. Note=Localizes to the lateral border recycling compartment (LBRC) and recycles from the LBRC to the junction in resting endothelial cells

Tissue Location
Expressed on platelets and leukocytes and is primarily concentrated at the borders between endothelial cells (PubMed:18388311, PubMed:21464369). Expressed in human umbilical vein endothelial cells (HUVECs) (at protein level) (PubMed:17580308, PubMed:19342684). Expressed on neutrophils (at protein level) (PubMed:17580308). Isoform Long predominates in all tissues examined (PubMed:12433657). Isoform Delta12 is detected only in trachea (PubMed:12433657). Isoform Delta14-15 is only detected in lung (PubMed:12433657). Isoform Delta14 is detected in all tissues examined with the strongest expression in heart (PubMed:12433657). Isoform Delta15 is expressed in brain, testis, ovary, cell surface of platelets, human umbilical vein endothelial cells (HUVECs), Jurkat T- cell leukemia, human erythroleukemia (HEL) and U-937 histiocytic lymphoma cell lines (at protein level) (PubMed:12433657, PubMed:18388311).

CD31 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot

- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

CD31 Antibody - Images

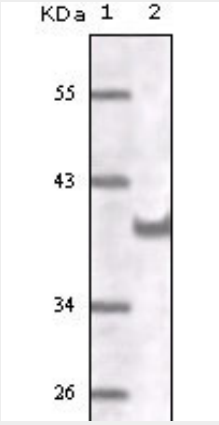

Figure 1: Western blot analysis using CD31 mouse mAb against truncated CD31 recombinant protein.

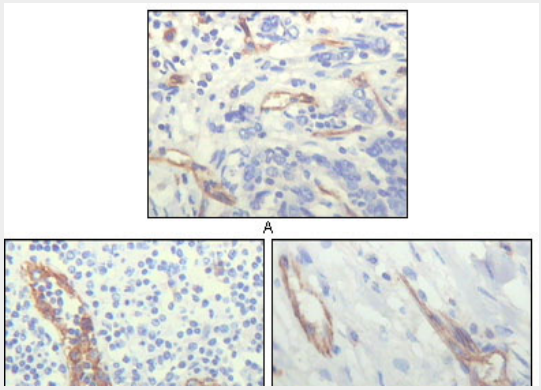

Figure 2: Immunohistochemical analysis of paraffin-embedded human lung cancer (A), lymphonodus tissue (B) and breast cancer (C), showing cytoplasmic localization of vascular endothelial cells using CD31 mouse mAb with DAB staining.

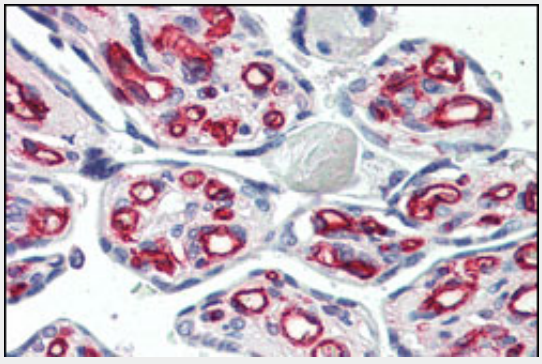

Figure 3: Immunohistochemical analysis of paraffin-embedded human placenta using CD31

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mouse mAb.

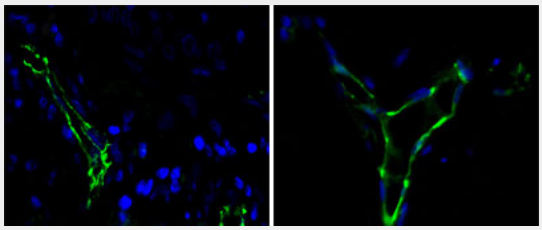

Figure 4:Immunofluorescence analysis of paraffin-embedded human lung cancer(left) and breast cancer(right) cells using CD31 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

CD31 Antibody - References

1. Mayr U et al. Circ Res 98:412-20 (2006). 2. Bingle L et al. Br J Cancer 94:101-7 (2006). 3. Wynne F et al. Reproduction 131:721-32 (2006).