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Anti-PECAM-1/CD31 Antibody

Catalog # ABO11802

Product Information

Application	WB, IHC-P, IHC-F, FC, ICC
Primary Accession	P16284
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Platelet endothelial cell adhesion molecule(PECAM1) detection. Tested with WB, IHC-P, IHC-F, ICC, FCM in Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	5175
Other Names	Platelet endothelial cell adhesion molecule, PECAM-1, EndoCAM, GPIIA', PECA1, CD31, PECAM1
Calculated MW	82522
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, By Heat Immunohistochemistry(Frozen Section), 0.5-1 □g/ml Immunocytochemistry, 0.5-1 □g/ml Western blot, 0.1-0.5 □g/ml Flow Cytometry, 1-3 □¼g/1x10^{6}cells
Subcellular Localization	Isoform Long: Cell membrane; Single-pass type I membrane protein. Cell membrane; Lipid-anchor. Cell junction. Localizes to the lateral border recycling compartment (LBRC) and recycles from the LBRC to the junction in resting endothelial cells.
Tissue Specificity	Expressed on platelets and leukocytes and is primarily concentrated at the borders between endothelial cells. Isoform Long predominates in all tissues examined. Isoform Delta12 is detected only in trachea. Isoform Delta14-15 is only detected in lung. Isoform Delta14 is detected in all tissues examined with the strongest expression in heart. 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). .
Source	Eukaryota

Protein Name	Platelet endothelial cell adhesion molecule
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	E.coli-derived human CD31 recombinant protein (Position: Q28-G382). Human CD31 shares 65% and 68% amino acid (aa) sequences identity with mouse and rat CD31, respectively.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Contains 6 Ig-like C2-type (immunoglobulin-like) domains.

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).

Background

CD31 also known as Platelet endothelial cell adhesion molecule (PECAM-1), is a protein that in human is encoded by the PECAM1 gene. Encoded protein is a member of the immunoglobulin superfamily, CD31 is mapped to 17q23.3. CD31 is found on the surface of platelets, monocytes, neutrophils, and some types of T-cells, and makes up a large portion of endothelial cell intercellular junctions. It is demonstrated that CD31 expression on human PBSCs may positively affect both neutrophil and platelet engraftment. Meanwhile, CD31 is involved in leukocyte migration and angiogenesis, which are key components of venous thrombus resolution.

Images

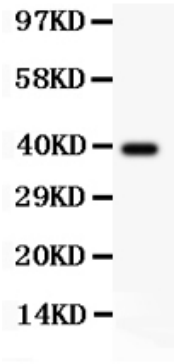


Figure 1. Western blot analysis of CD31 using anti-CD31 antibody (ABO11802). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. lane 1: recombinant human CD31 protein 0.5ng. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-CD31 antigen affinity purified polyclonal antibody (Catalog # ABO11802) at 0.5 □¼g/mL overnight at 4 □°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for CD31 at approximately 39KD. The expected band size for CD31 is at 39KD.

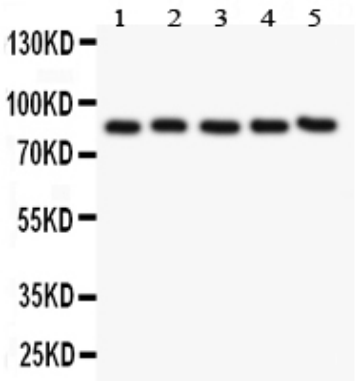


Figure 2. Western blot analysis of CD31 using anti-CD31 antibody (ABO11802). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. lane 1: HELA whole cell lysate,lane 2: U937 whole cell lysate,lane 3: MM231 whole cell lysate,lane 4: JURKAT whole cell lysate,lane 5: RAJI whole cell lysate. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-CD31 antigen affinity purified polyclonal antibody (Catalog # ABO11802) at 0.5 □¼g/mL overnight at 4 □°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for CD31 at approximately 82KD. The expected band size for CD31 is at 82KD.

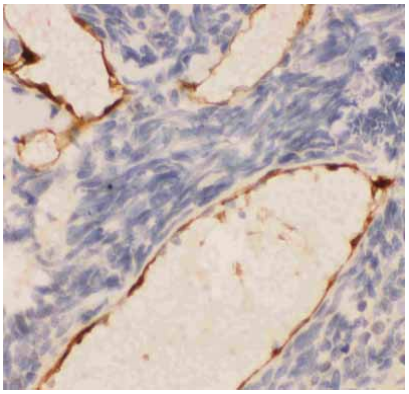


Figure 3. IHC analysis of CD31 using anti-CD31 antibody (ABO11802).CD31 was detected in paraffin-embedded section of human lung cancer tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-CD31 Antibody (ABO11802) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

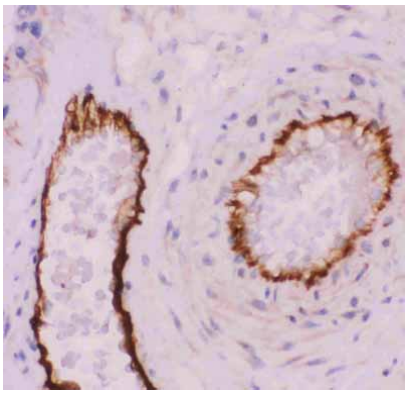


Figure 4. IHC analysis of CD31 using anti-CD31 antibody (ABO11802).CD31 was detected in paraffin-embedded section of human placenta tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-CD31 Antibody (ABO11802) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

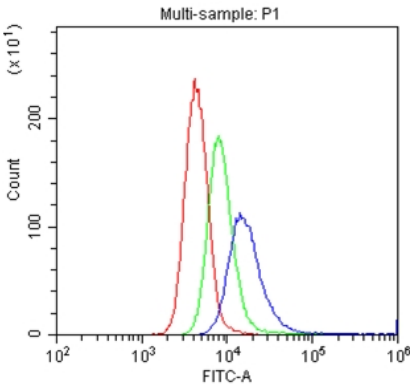


Figure 5. Flow Cytometry analysis of U937 cells using anti-CD31 antibody (ABO11802).Overlay histogram showing U937 cells stained with ABO11802 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-CD31 Antibody (ABO11802,1 □¼g/1x106 cells) for 30 min at 20 □°C. DyLight?488 conjugated goat anti-rabbit IgG (BA1127, 5-10 □¼g/1x106 cells) was used as secondary antibody for 30 minutes at 20 □°C. Isotype control antibody (Green line) was rabbit IgG (1 □¼g/1x106) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

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