abcam

Product datasheet

# Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free ab56299

7 Abreviews 72 References 6 Images

## Overview

| | |
|---|---|
| **Product name** | Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free |
| **Description** | Rat monoclonal [RM0032-1D12] to CD31 - BSA and Azide free |
| **Host species** | Rat |
| **Tested applications** | **Suitable for:** IHC-P |
| **Species reactivity** | **Reacts with:** Mouse |
| **Immunogen** | Full length protein corresponding to Mouse CD31. Endothelial membrane protein |
| **Positive control** | IHC-P: Mouse kidney, lung, heart and liver tissue. |
| **General notes** | **Proteinase K antigen retrieval is essential.**<br><br>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.<br><br>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As |

## Properties

| | |
|---|---|
| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles. |
| **Storage buffer** | Constituent: PBS |
| **Carrier free** | Yes |
| **Purity** | Protein G purified |
| **Purification notes** | Purified from tissue culture supernatant and lyophilized from a 0.2 µm filtered solution in phosphate-buffered saline (PBS). |
| **Clonality** | Monoclonal |
| **Clone number** | RM0032-1D12 |
| **Isotype** | IgG2a |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab56299 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application | Abreviews | Notes |
|---|---|---|
| **IHC-P** | ★★★★☆ **(5)** | 1/50 - 1/400.<br>4% PFA ix preferred fixative over formalin. Fixation should be overnight. Carrying out Proteinase K enzymatic retrieval is essential (please see specific protocol below and Abreviews). A sensitive detection system such as HRP polymer system is recommended.<br>The ideal fixation time will depend on the size of the tissue block |

## Target

**Function** Induces susceptibility to atherosclerosis (By similarity). Cell adhesion molecule which is required for leukocyte transendothelial migration (TEM) under most inflammatory conditions. 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. Prevents phagocyte ingestion of closely apposed viable cells by transmitting 'detachment' signals, and changes function on apoptosis, promoting tethering of dying cells to phagocytes (the encounter of a viable cell with a phagocyte via the homophilic interaction of PECAM1 on both cell surfaces leads to the viable cell's active repulsion from the phagocyte. During apoptosis, the inside-out signaling of PECAM1 is somehow disabled so that the apoptotic cell does not actively reject the phagocyte anymore. The lack of this repulsion signal together with the interaction of the eat-me signals and their respective receptors causes the attachment of the apoptotic cell to the phagocyte, thus triggering the process of engulfment). Isoform Delta15 is unable to protect against apoptosis. Modulates BDKRB2 activation. Regulates bradykinin- and hyperosmotic shock-induced ERK1/2 activation in human umbilical cord vein cells (HUVEC).

**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 U937 histiocytic lymphoma cell lines (at protein level).

**Sequence similarities** Contains 6 Ig-like C2-type (immunoglobulin-like) domains.

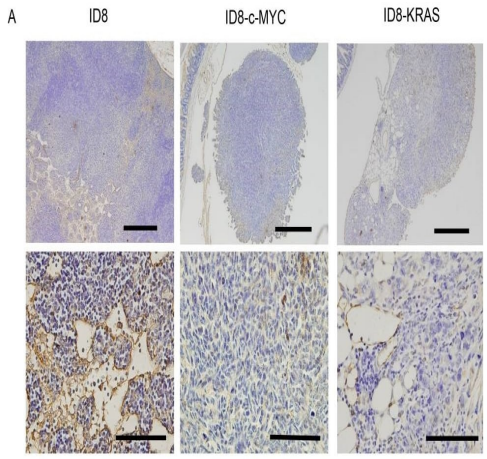
**Domain** The Ig-like C2-type domains 2 and 3 contribute to formation of the complex with BDKRB2 and in regulation of its activity.

**Post-translational modifications** Phosphorylated on Ser and Tyr residues after cellular activation. In endothelial cells Fyn mediates mechanical-force (stretch or pull) induced tyrosine phosphorylation.

**Cellular localization** Membrane. Cell junction. Localizes to the lateral border recycling compartment (LBRC) and recycles from the LBRC to the junction in resting endothelial cells and Cell junction. Localizes to the lateral border recycling compartment (LBRC) and recycles from the LBRC to the junction in

resting endothelial cells.

## Images




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free (ab56299)

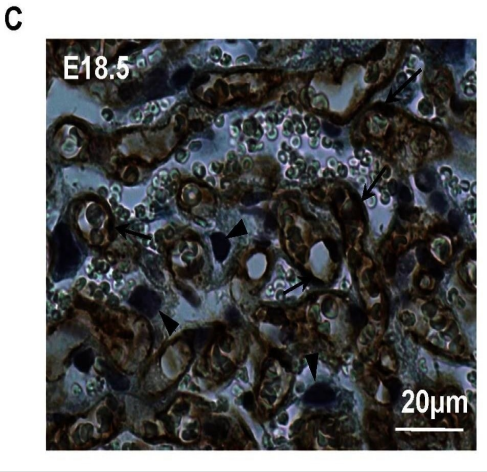
Yoshida et al PLoS One. 2016 Aug 2;11(8):e0160330. doi: 10.1371/journal.pone.0160330. eCollection 2016. Fig 2. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

**Tumor vascularization and VEGF in ascites.**

**(A)** ID8, ID8-c-MYC, or ID8-KRAS cells ($2 \times 10^6$) were intra-peritoneal injected into C57/BL6 mice. Mice were sacrificed when the body weight reached 23 g. Disseminations were obtained from mice when sacrificed. Tumor vascularization of each dissemination was assessed using CD31 immunohistochemistry (ab56299).

Scale bars represent 200 μm and 50 μm at low and high magnification, respectively.

Paraffin sections (4-μm-thick) of the biggest tumor sections from ID8, ID8-c-MYC, and ID8-KRAS mice were dewaxed in xylene and rehydrated through graded ethanol to water. Antigens were retrieved by boiling in 10 mM citrate buffer (pH 6.0) for 30 min. The cooled sections were incubated in a peroxidase blocking solution for 10 min to quench endogenous peroxidase. Sections were incubated in a protein blocking solution at room temperature for 10 min to block non-specific binding. Sections were then stained for Ki67 using rabbit monoclonal antibody against mouse Ki67, CD31 using a rat monoclonal antibody against mouse CD31 (ab56299, Abcam 1:100 dilution).

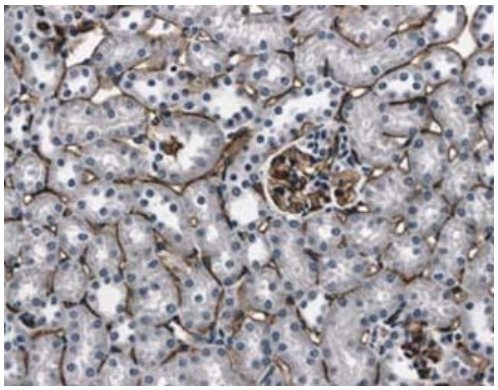



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free (ab56299)

Vasilopoulou et al PLoS One. 2013 Jun 12;8(6):e65402. doi: 10.1371/journal.pone.0065402. Print 2013. Fig 8. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

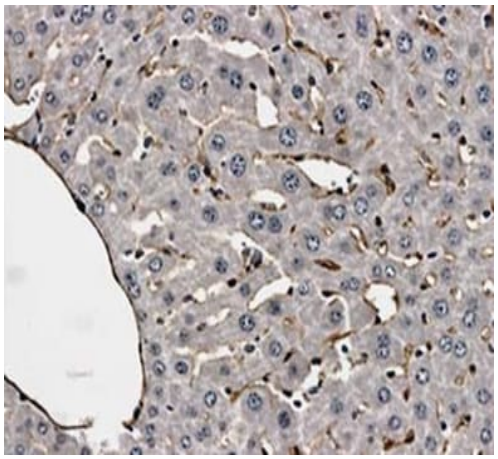
**Proliferation and cell number in male wild-type (+/y) and male Mct8 knockout (−/y) placentae.**

**(Panel C):** Representative picture demonstrating CD31 immunoreactivity (marker of endothelial cells represented by brown staining) in the mouse placenta at E18.5. The nuclei were counterstained using hematoxylin. Endothelial cells are indicated by arrows and trophoblast cells by arrowheads.



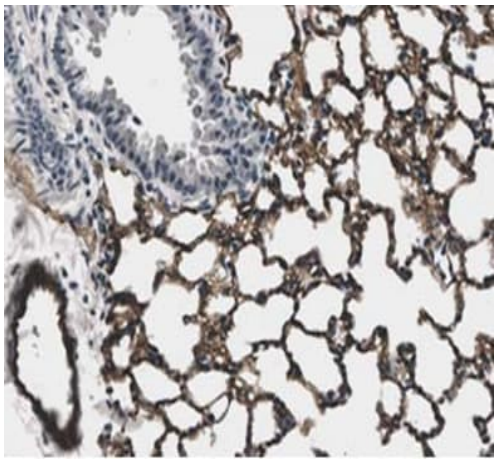
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free (ab56299)

ab56299 at 1/400 staining CD31 in LPS treated mouse kidney tissue section by Immunohistochemistry (Formalin/PFA fixed paraffin-embedded sections).



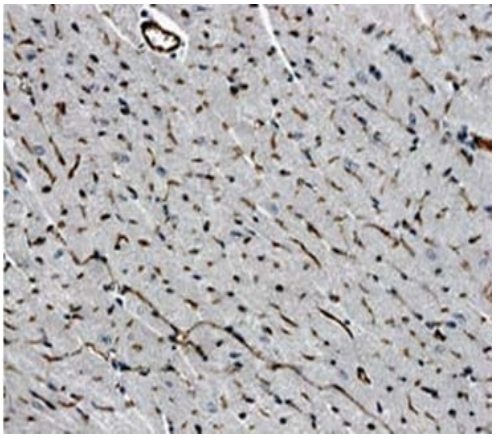
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free (ab56299)

ab56299 at 1/400 dilution, staining CD31 in LPS treated mouse liver tissue section by Immunohistochemistry (Formalin/PFA fixed paraffin-embedded sections).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free (ab56299)

ab56299 at 1/400 staining CD31 in LPS treated mouse lung tissue section by Immunohistochemistry (Formalin/PFA fixed paraffin-embedded sections).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD31 antibody [RM0032-1D12] - BSA and Azide free (ab56299)

ab56299 at 1/400 dilution, staining CD31 in LPS treated mouse heart tissue section by Immunohistochemistry (Formalin/PFA fixed paraffin-embedded sections).



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