abcam

ab9498

Anti-PECAM-1/CD31 antibody [JC/70A]

Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498) is a mouse monoclonal antibody detecting PECAM-1/CD31 in **Western Blot, Flow Cytometry, IHC-P, IHC-Fr, ICC/IF**. Suitable for **Human**.

- Over 260 publications
- Trusted since 2002

Lab Essentials

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	JC/70A
Purification technique	Affinity purification
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	0.5 µg/mL
Notes	The ideal fixation time will depend on the size of the tissue block and the type of tissue, but fixation between 18–24h is suitable for most samples. Positive Control: Hu tonsil tissue Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Cynomolgus monkey
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/20
Notes	-

Predicted

Species	Cynomolgus monkey
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	Treat samples with PNGase F or phosphatase to confirm the specificity of bands if necessary. The observed band size of CD31 may not the same as predicted MWs in WB due to the different forms and modifications of CD31.

Hu Isoform 1-6: 79-83 kDa (predicted)
Observed band size is around 130 kDa
Positive Control: HUVEC and Jurkat cell lysates (ab7899); Human spleen and kidney tissue lysate.
Negative Control: NIH/3T3 whole cell lysate (ab7179).

Predicted

Species	Cynomolgus monkey
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Predicted

Species	Cynomolgus monkey
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	Use 0.3M glycine to quench autofluorescence caused by aldehydes.

Predicted

Species	Cynomolgus monkey
Dilution info	-

Notes	-

Target data

See full target information PECAM-1/CD31

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). Isoform Delta15. Does not protect against apoptosis.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Anti-CD31 antibody [JC/70A] (ab9498) is a mouse monoclonal antibody and is validated for use in Flow Cyt, ICC/IF, IHC-Fr, IHC-P and WB.

Abcam's high quality validation processes ensure Anti-CD31 antibody [JC/70A] (ab9498) has high sensitivity and specificity.

Anti-CD31 antibody [JC/70A] (ab9498) has 38 independent reviews from customers.

Anti-CD31 antibody [JC/70A] (ab9498) specifically detects CD31 (UniProt ID: P16284; Molecular weight: 80kDa) and is sold in 100 ug selling sizes.

Conjugation-ready, carrier free format available for antibody clone JC/70A - ab264090.

Antibody clone JC/70A is also available pre-conjugated to a variety of labels for your convenience - PE, Alexa Fluor® 488, Alexa Fluor® 647 (ab21566, ab215911, ab215912).

CD31 (PECAM-1) is a protein expressed on endothelial and immune cells, playing a crucial role in tumor angiogenesis and immune cell trafficking. In immuno-oncology, it influences the tumor microenvironment and modulates the immune response to cancer

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

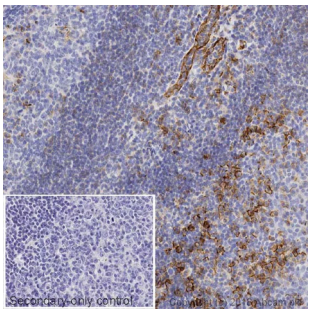
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

11 product images

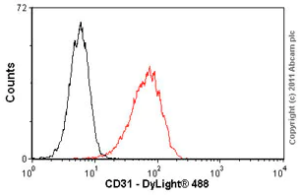


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PECAM-1/CD31 antibody

IHC image of CD31 staining in a section of formalin-fixed paraffin-embedded normal human tonsil* performed on a Leica BOND^{TM} system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab9498, 0.5ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody. For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

** Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre*

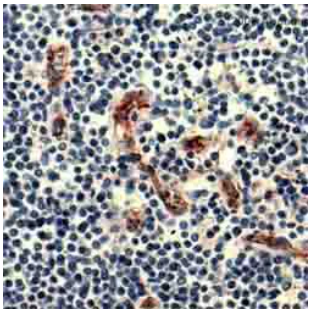


Flow Cytometry - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Flow Cytometry staining using mouse Anti-PECAM-1/CD31 antibody

Overlay histogram showing Jurkat cells stained with ab9498 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab9498, 1/20 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in Jurkat cells fixed with methanol (5 min) used under the same conditions.

Please note that Abcam do not have data for use of this antibody on non-fixed cells. We welcome any customer feedback.

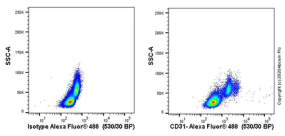


This image is courtesy of an anonymous customer review

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PECAM-1/CD31 antibody

ab9498 at 1/100 staining human lymph node tissue sections by IHC-P. The tissue was paraformaldehyde fixed and a heat based antigen retrieval step was performed. The tissue was then blocked with serum and incubated with ab9498 overnight. An HRP conjugated goat antibody was used as the secondary.

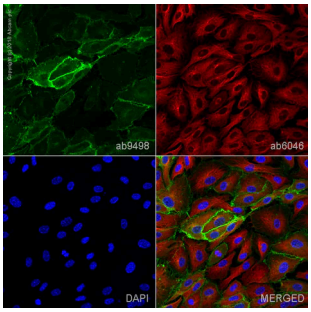


Flow Cytometry - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Flow Cytometry staining using mouse Anti-PECAM-1/CD31 antibody

Flow cytometry staining of human peripheral blood mononuclear cells (PBMCs) with ab9498 (right) or mouse IgG1κ; (ab170190) isotype (left). PBMCs were incubated for 30 min on ice in 1x PBS containing 10 µg/ml human IgG and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab9498) or mouse IgG1κ; (ab170190) isotype ($1x10^6$ in 100 µL at 0.04 µg/ml) for 30 min on ice.
The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor ® 488, pre-adsorbed) (ab150117) was used at 1:2000 dilution for 30 min on ice.

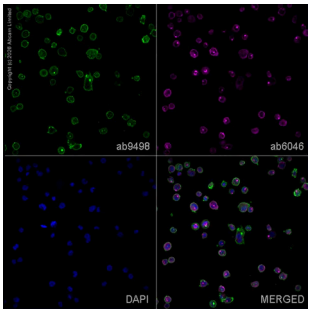
Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter. Events were gated on alive cells.



Immunocytochemistry - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunocytochemistry staining of HUVEC cells using mouse Anti-PECAM-1/CD31 antibody

ab9498 staining CD31 in HUVEC cells. The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1%PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab9498 at 1µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control, at 1/1000 dilution. Cells were then incubated with ab150117, Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (shown in green) and ab150084, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolor red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

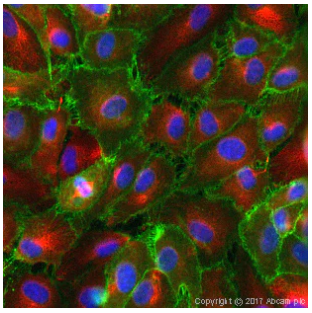


Immunocytochemistry/ Immunofluorescence - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunocytochemistry/ Immunofluorescence staining of THP-1 using mouse Anti-PECAM-1/CD31 antibody

ab9498 staining CD31 in THP-1 cells. The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1%PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab9498 at 1µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control, at 1/1000 dilution. Cells were then incubated with ab150117, Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (shown in green) and ab150080, Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolor red). Nuclear DNA was labelled with DAPI (shown in blue).

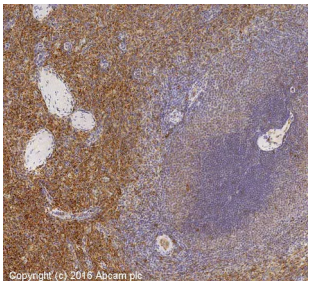
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunocytochemistry - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunocytochemistry staining using mouse Anti-PECAM-1/CD31 antibody

ab9498 stained in HUVEC cells. Cells were fixed with 100% methanol (5 min) at room temperature and incubated with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 1h at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab9498 at 5 µg/ml and ab6046 (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at +4°C. The secondary antibodies were ab150080 (pseudo-colored red) and ab150117 (colored green) used at 1 ug/ml for 1hour at room temperature. DAPI was used to stain the cell nuclei (colored blue) at a concentration of 1.43µM for 1hour at room temperature



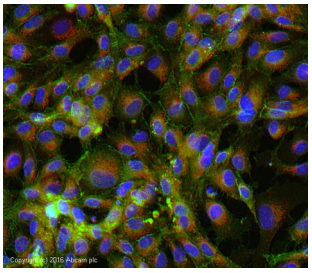
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PECAM-1/CD31 antibody

IHC image of CD31 staining in human spleen formalin fixed paraffin embedded tissue section*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab9498, 5µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

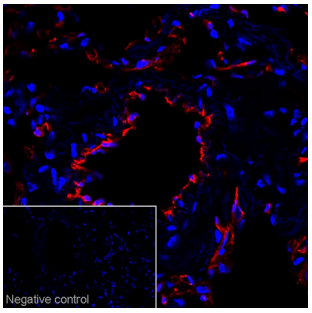
* *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre*



Immunocytochemistry - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunocytochemistry staining using mouse Anti-PECAM-1/CD31 antibody

ab9498 stained HUVEC cells. The cells were 100% methanol fixed for 5 minutes at -20°C and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1hour at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab9498 at 5µg/ml) overnight at +4°C. The secondary antibody (pseudo-colored green) was Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed (ab150117) used at a 1/1000 dilution for 1hour at room temperature. Alexa Fluor® 594 WGA was used to label plasma membranes (pseudo-colored red) at a 1/200 dilution for 1hour at room temperature. DAPI was used to stain the cell nuclei (pseudo-colored blue) at a concentration of 1.43µM for 1hour at room temperature.



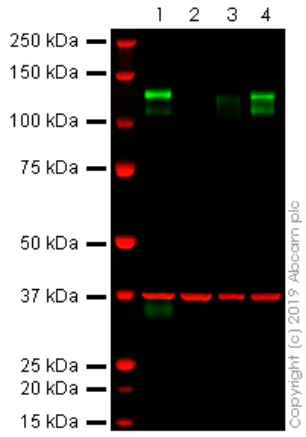
Immunohistochemistry (Frozen sections) - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Immunohistochemistry (Frozen sections) staining using mouse Anti-PECAM-1/CD31 antibody

IHC image of ab9498 staining in 10% formaldehyde fixed frozen tissue section of human lung. Non-specific protein-protein interactions were blocked using TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 3% (w/v) BSA for 1 hour at room temperature. The section was then incubated with ab9498 (1µg/ml concentration) in TBS containing 0.025% (v/v) Triton X-100 and 3% (w/v) BSA overnight at +4°C. The section was then incubated with ab150119 (Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 647)) and DAPI for 1 hour at room temperature.

The DAPI only control (no antibody) inset shows no autofluorescence, demonstrating that any Alexa Fluor® 647 signal is derived directly from bound ab9498.

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antibody concentrations and incubation times.



Western blot - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498)

PECAM-1/CD31 Western blot staining using mouse Anti-PECAM-1/CD31 antibody

This blot was produced using a 4-12% Bis-tris under the MOPS buffer system. The gel was run at 200V for 55 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was blocked for an hour using 3% milk before ab9498 and ab181602 (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at a 1ug/ml concentration and 1/20000 dilution respectively. Antibody binding was detected using Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-PECAM-1/CD31 antibody [JC/70A] (ab9498) at 1 µg/mL

Lane 1:
HUVEC whole cell lysate at 20 µg

Lane 2:
HeLa whole cell lysate at 20 µg

Lane 3:
Human kidney tissue lysate at 20 µg

Lane 4:
Human spleen tissue lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 82 kDa

Observed band size: 130 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.