**Product datasheet**

**Anti-CD31 antibody [P2B1] ab24590**

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**Overview**

**Product name**
Anti-CD31 antibody [P2B1]

**Description**
Mouse monoclonal [P2B1] to CD31

**Host species**
Mouse

**Tested applications**
Suitable for: ICC/IF, IHC - Wholemount, WB, IP
Unsuitable for: IHC-Fr or IHC-P

**Species reactivity**
Reacts with: Mouse, Rat, Human
Does not react with: Cow

**Immunogen**
Tissue, cells or virus corresponding to Human CD31.

**General notes**
- ab24590 activates the binding of human T-lymphocytes to endothelial cells.
- This antibody clone is manufactured by Abcam.
- If you require this antibody in a particular buffer formulation or a particular conjugate for your experiments, please contact orders@abcam.com or you can find further information here.
- Abcam recommended secondaries - Goat Anti-Mouse HRP (ab205719) and Goat Anti-Mouse Alexa Fluor® 488 (ab150113).
- See other anti-mouse secondary antibodies that can be used with this antibody.

**Properties**

**Form**
Liquid

**Storage instructions**
Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.

**Storage buffer**
pH: 7.40
Preservative: 0.02% Sodium azide
Constituents: PBS, 6.97% L-Arginine

**Purity**
Protein G purified

**Primary antibody notes**
ab24590 activates the binding of human T-lymphocytes to endothelial cells.

**Clonality**
Monoclonal

**Clone number**
P2B1

**Isotype**
IgG1
Applications

Our Abpromise guarantee covers the use of ab24590 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC/IF</td>
<td>★★★★☆☆</td>
<td>1/100 - 1/1000.</td>
</tr>
<tr>
<td>IHC - Wholemount</td>
<td>★★★★☆☆</td>
<td>1/100.</td>
</tr>
<tr>
<td>WB</td>
<td>★★★★☆☆</td>
<td>Use a concentration of 1 - 5 µg/ml. Detects a band of approximately 120 kDa (predicted molecular weight: 83 kDa). We recommend using 3% milk as the blocking agent for Western blot.</td>
</tr>
<tr>
<td>IP</td>
<td></td>
<td>1/1000.</td>
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</tbody>
</table>

Application notes
Is unsuitable for IHC-Fr or IHC-P.

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, tests, 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

Images of isolated capillaries triple labeled for EC marker protein CD31 (red channel), PC marker protein NG-2 (green channel), and Hoechst for nuclei (blue channel).

Cochlear stria vascularis capillaries were isolated from 6-week-old CBA/CaJ mice. The capillary isolation was achieved with a special procedure we developed and named the "sandwich-dissociation" method. The tissue samples were fixed in 4% paraformaldehyde at 4°C for 2 h, washed in PBS for 30 min, permeabilized in 0.5% Triton X-100, then immunoblocked in a solution of 10% goat serum in 1% bovine albumin in PBS for 30 min. The specimens were incubated with primary antibodies and secondary antibodies (goat Alexa Fluo 488-conjugated anti-mouse and anti-rabbit IgG antibodies).

Positive immunocytochemical staining of human primary choroidal endothelial cells using ab24590 at a dilution of 1/100. The tissue was fixed with paraformaldehyde and the antibody was incubated for 3 hours. An Alexa Fluor® 488 goat anti-mouse antibody was used as a secondary antibody.
ab24590 staining CD31 in the HEK 293T cell line by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with formaldehyde, permeabilized with 1% Triton and blocked with 3% BSA for 1 hour at RT. Samples were incubated with primary antibody (1/50 in PBS + 3% BSA) for 1 hour. A Alexa Fluor® 555-conjugated Donkey anti-mouse polyclonal was used as the secondary antibody (1/500).

All lanes: Anti-CD31 antibody [P2B1] (ab24590) at 5 µg/ml

Lane 1: Jurkat (Human T cell lymphoblast-like cell line) WCL
Lane 2: THP1 (Human acute monocytic leukemia cell line) WCL
Lane 3: HUVEC (Human Umbilical Vein Endothelial Cell) Whole Cell Lysate
Lane 4: Human Platelets

Lysates/proteins at 20 µg per lane.

Secondary

All lanes: Goat polyclonal to Mouse IgG - H&L - Pre-Adsorbed (HRP) at 1/5000 dilution

Performed under reducing conditions.

Predicted band size: 83 kDa
Observed band size: 120 kDa

why is the actual band size different from the predicted?
Exposure time: 4 minutes

We recommend using 3% milk as the blocking agent for Western blot.

Please note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

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