Technical Data Sheet

Purified Rat Anti-Mouse CD31

Product Information

- **Material Number:** 550274
- **Alternate Name:** EndoCAM; GPIIA; PECA1; PECAM1; Platelet endothelial cell adhesion molecule
- **Size:** 1 mL
- **Concentration:** 15.625 µg/ml
- **Clone:** MEC 13.3
- **Immunogen:** 129/Sv mouse-derived endothelioma cell line tEnd.1
- **Isotype:** Rat (LEW) IgG2a, κ
- **Reactivity:** QC Testing: Mouse
- **Storage Buffer:** Aqueous buffered solution containing BSA, goat serum, and ≤0.09% sodium azide.

Description

The MEC13.3 antibody specifically recognizes CD31, also known as PECAM-1 (Platelet Endothelial Cell Adhesion Molecule-1). CD31 is a 130 kDa integral membrane protein, a member of the immunoglobulin superfamily, that mediates cell-to-cell adhesion. CD31 is expressed constitutively on the surface of adult and embryonic endothelial cells and is also expressed on many peripheral leukocytes and platelets. It has also been detected on bone marrow-derived hematopoietic stem cells and embryonic stem cells. CD31 is involved in the transendothelial emigration of neutrophils, and neutrophil PECAM-1 appears to be down-regulated after extravasation into inflamed tissues. Multiple alternatively spliced isoforms are detected during early post-implantation embryonic development; this alternative splicing is involved in the regulation of ligand specificity. CD38 and vitronectin receptor (αvβ3 integrin, CD51/CD61) are proposed to be ligands for CD31. CD31-mediated endothelial cell-cell interactions are involved in angiogenesis. The MEC13.3 mAb inhibits a variety of in vitro and in vivo functions mediated by CD31.

Immunohistochemical staining of endothelial cells. The zinc-fixed paraffin-embedded section of U-87 MG tumor in mouse brain was stained with MEC13.3 mAb. Note the brown labeling of endothelia of blood vessels in the tumor.

Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

**Application**

<table>
<thead>
<tr>
<th>Application</th>
<th>Recommended Assay Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow cytometry</td>
<td>Routinely Tested</td>
</tr>
<tr>
<td>Immunohistochemistry-frozen</td>
<td>Tested During Development</td>
</tr>
<tr>
<td>Immunohistochemistry-zinc-fixed</td>
<td>Tested During Development</td>
</tr>
<tr>
<td>Immunoprecipitation</td>
<td>Reported</td>
</tr>
<tr>
<td>Blocking</td>
<td>Reported</td>
</tr>
<tr>
<td>Immunohistochemistry-formalin (antigen retrieval required)</td>
<td>Not Recommended</td>
</tr>
</tbody>
</table>

**Recommended Assay Procedure:**

**Immunohistochemistry:** The MEC13.3 antibody is recommended to test for immunohistochemical staining of Zinc-fixed paraffin sections. Tissues tested were mouse spleen, lung, heart, and thymus. Immunohistochemistry of acetone-fixed frozen sections has been reported. The antibody stains endothelial cells on small and large blood vessels. The isotype control recommended for use with this antibody is purified rat IgG2a (Cat. No. 559073). For optimal indirect immunohistochemical staining, the MEC13.3 antibody should be titrated (1:10 to 1:50 dilution)
and visualized via a three-step staining procedure in combination of biotinylated polyclonal anti-rat IgGs (multiple adsorption) (Cat. No. 559286) as
the secondary antibody and Streptavidin-HRP (Cat. No. 550946) together with the DAB Substrate Kit (Cat. No. 550880). Alternatively, the
anti-rat Ig HRP Detection Kit (Cat. No. 551013) can be used to accomplish the three-step staining procedure. The clone MEC13.3 is not
recommended for formalin-fixed paraffin embedded sections

Suggested Companion Products

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
</tr>
</thead>
<tbody>
<tr>
<td>559073</td>
<td>Purified Rat IgG2a x Isotype Control</td>
<td>0.25 mg</td>
<td>R35-95</td>
</tr>
<tr>
<td>559286</td>
<td>Biotin Goat Anti-Rat Ig</td>
<td>0.5 mg</td>
<td>Polyclonal</td>
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<tr>
<td>550880</td>
<td>DAB Substrate Kit</td>
<td>500 Tests</td>
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<tr>
<td>550946</td>
<td>Streptavidin HRP</td>
<td>50 mL</td>
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<tr>
<td>551013</td>
<td>Anti-Rat Ig HRP Detection Kit</td>
<td>200 Tests</td>
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<tr>
<td>550523</td>
<td>IHC Zinc Fixative</td>
<td>1000 mL</td>
<td>(none)</td>
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</tbody>
</table>

Product Notices
1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before
discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. This antibody has been developed for the immunohistochemistry application. However, a routine immunohistochemistry test is not
performed on every lot. Researchers are encouraged to titrate the reagent for optimal performance.
5. An isotype control should be used at the same concentration as the antibody of interest.

References
expressed during mammalian cardiovascular development. Development. 1994; 120(9):2539-2553. (Clone-specific: Blocking)
Christofidou-Solomidou M, Nakada MT, Williams J, Muller WA, DeLisser HM. Neutrophil platelet endothelial cell adhesion molecule-1 participates in neutrophil
(Clone-specific: Blocking)
130(2):451-460. (Biology)
Vecchi A, Garlanda C, Lampugnani MG, et al. Monoclonal antibodies specific for endothelial cells of mouse blood vessels. Their application in the identification of