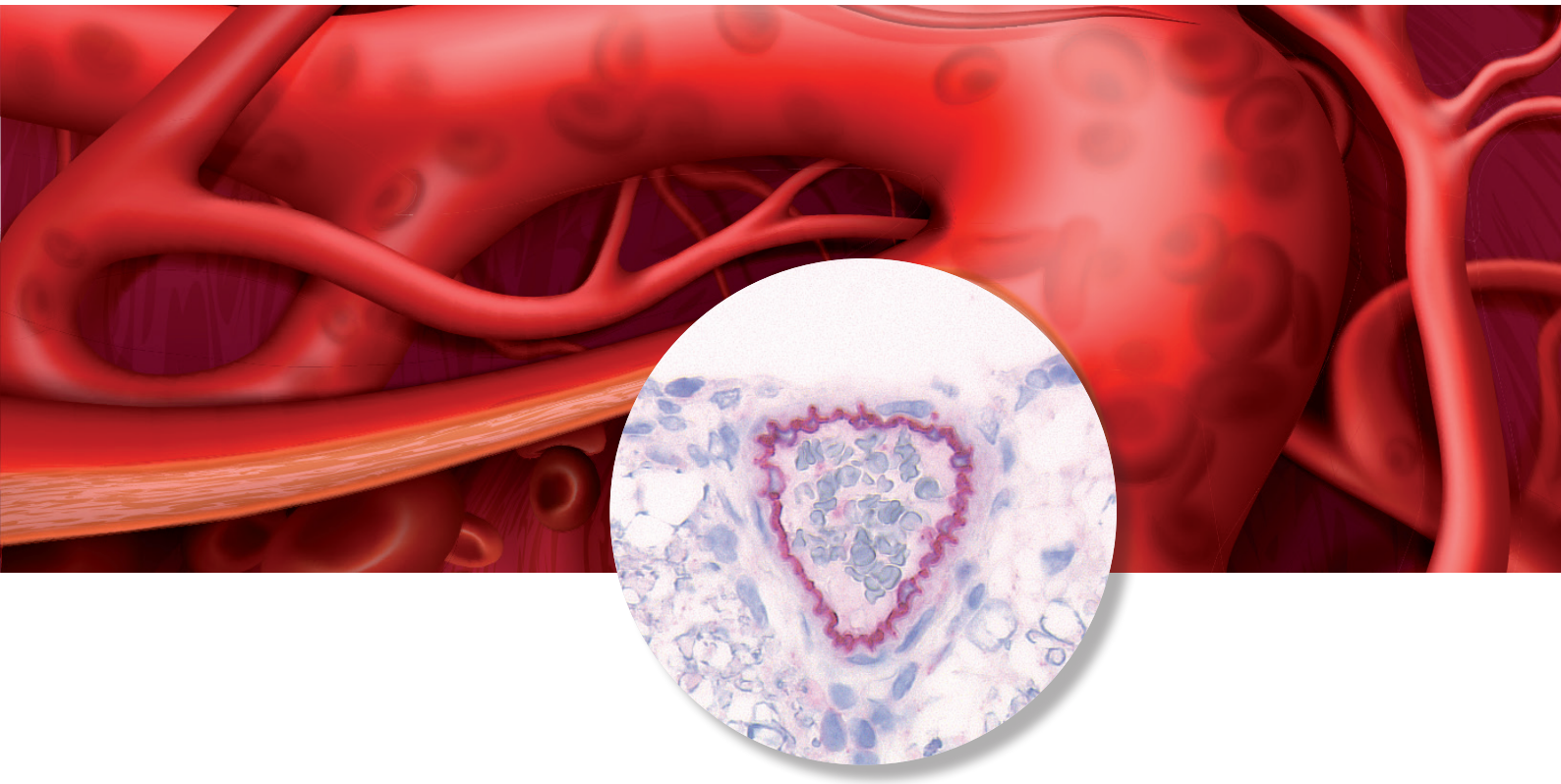
More than 300 Publications

Vascular Research

Anti mouse CD31 Antibody SZ31 overcomes the FFPE staining challenge



Endothelial Cell Marker

- Strong labelling of small and large vessels
- Works in standard formalin-fixed paraffin-embedded murine tissues
- No cross-reaction with human CD31

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Precision labeling of Endothelial Cells in formalin-fixed paraffin embedded Mouse Tissues using CD31 Antibody Clone SZ31

Anti-CD31

Key Antibody Features

- works on normal formalin-fixed and paraffin-embedded mouse tissues after standard HIER pretreatment with citrate buffer pH 6.0
- no cross-reaction with human - ideal for xenografts in mice
- stains endothelial cell subtypes of vertebrate vasculogenesis, endothelial progenitor cells as well as circulating endothelial cells and stem cell-derived vascular endothelial cells

CD31 - Expression and Protein Function

CD31, also known as PECAM-1 (Platelet Endothelial Cell Adhesion Molecule-1) is expressed constitutively on the surface of embryonic and adult endothelial cells. CD31 is major constituent of the endothelial cell intercellular junctions. It plays a key role in the transendothelial leukocyte migration (leukocyte transmigration), integrin activation and it is significantly involved in angiogenesis. CD31 is also expressed on cell surfaces of monocytes, neutrophils, platelets and certain T-cell subsets. It has been detected on bone marrow-derived hematopoetic stem cells and embryonic stem cells.

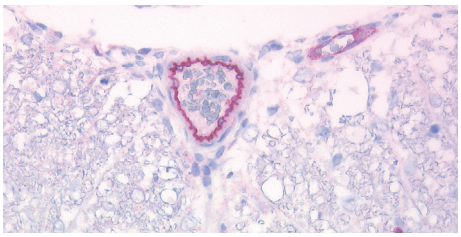


Fig. 1: Spinal Cord

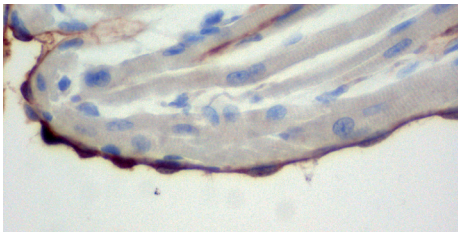


Fig. 2: Endocardium

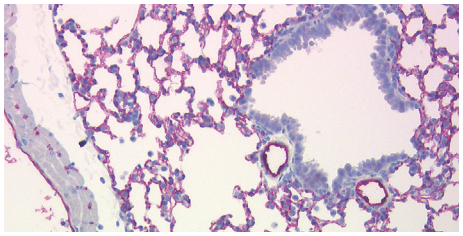


Fig. 3: Lung

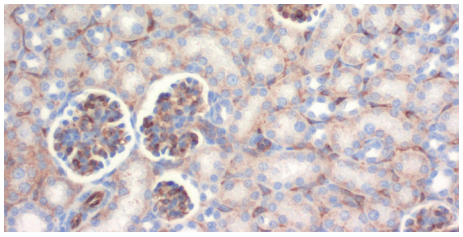


Fig. 4: Kidney

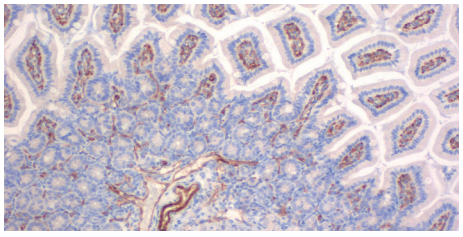


Fig. 5 Small Intestine

CD31 as outstandig Marker for Angiogenesis in Mouse Model Systems

Studies have shown CD31 to be a superior marker in human angiogenesis, which reportedly predicts tumor recurrence. But pathophysiological studies of CD31 in murine model systems previously had limitations because standard formalin-fixed sections were excluded. Antibody clone SZ31 eliminates these restrictions by allowing high quality immunohistochemical analysis of standard formalin-fixed paraffin sections in mice.

Why is CD31 important in pre-clinical Studies?

The endothelial system is involved in the regulation of the exchange of substances between blood and tissue, the regulation of vascular tone and vasodilation, the maintenance of the hemostatic balance, blood coagulation, the mediation of platelet and leukocyte interaction and angiogenesis.

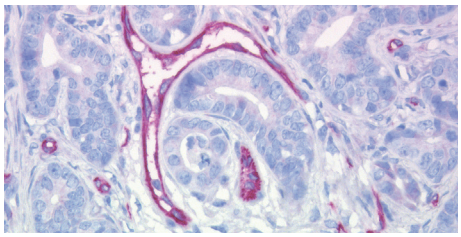


Fig. 6: Adenocarcinoma

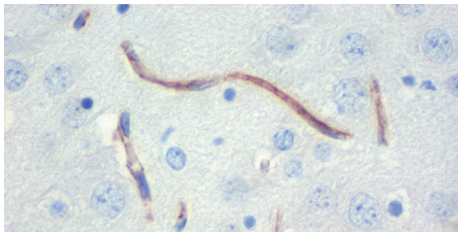


Fig. 7: Brain

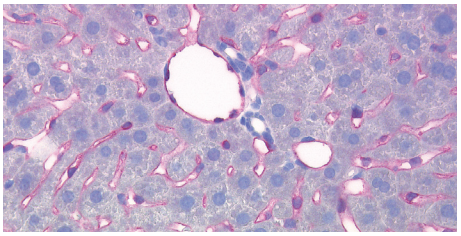


Fig. 8 Liver

Changes in endothelial cells and the vasculature play a central role in the pathogenesis of many serious human diseases, such as Cancer, Coronary Artery disease, Atherosclerosis, Stroke, Kidney disease and others.

Thus, research that target endothelium-associated processes, make up an important part of drug research.

Particularly noteworthy are angiogenesis inhibitors, as tumor growth and the process of metastasis are crucially dependent on the formation of new blood vessels in the tumor. In many tumors, CD31 expression correlates with the microvessel density and is directly related to the tumor mass. In regenerative medicine the development of treatments for therapeutic angiogenesis play an important role in cardiovascular disease.

Studies in mice are particularly suitable in order to investigate new drug candidates and pathophysiological changes of endothelial cells. Stainings of endothelial cell changes in mouse paraffin tissues can contribute significantly to our knowledge of the pathophysiology of endothelial cells and the mode of action of potential drugs and therapies on endothelial cell involvement in many diseases.

Ordering Information

Ordering #	Quantity	Format
dia-310	0,5 ml	unconjugated
DIA-310-BA-2	200 µg	Azide and BSA-free

Fig 1-8 show stainings of standard FFPE-fixed Tissues with anti-CD31 Antibody Clone SZ31. Fig. 1, 3, 6 and 8 courtesy of Prof. Harald Stein, Charite, Berlin. Fig 2, 4, 5 and 7 courtesy Prof. Robert Klopfleisch, Freie Universität Berlin.

Antibody Information

Specificity
- mouse CD31 / PECAM-1

Reactivity
- Mouse
- Swine

no cross-reaction to human

Clone
- SZ31

Host / Isotype
- Rat IgG2A

Application:
- IHC-P (FFPE), IHC-F, IF, IC, WB

Recommended Dilution:

- IHC-P: 1:100 - 1:800

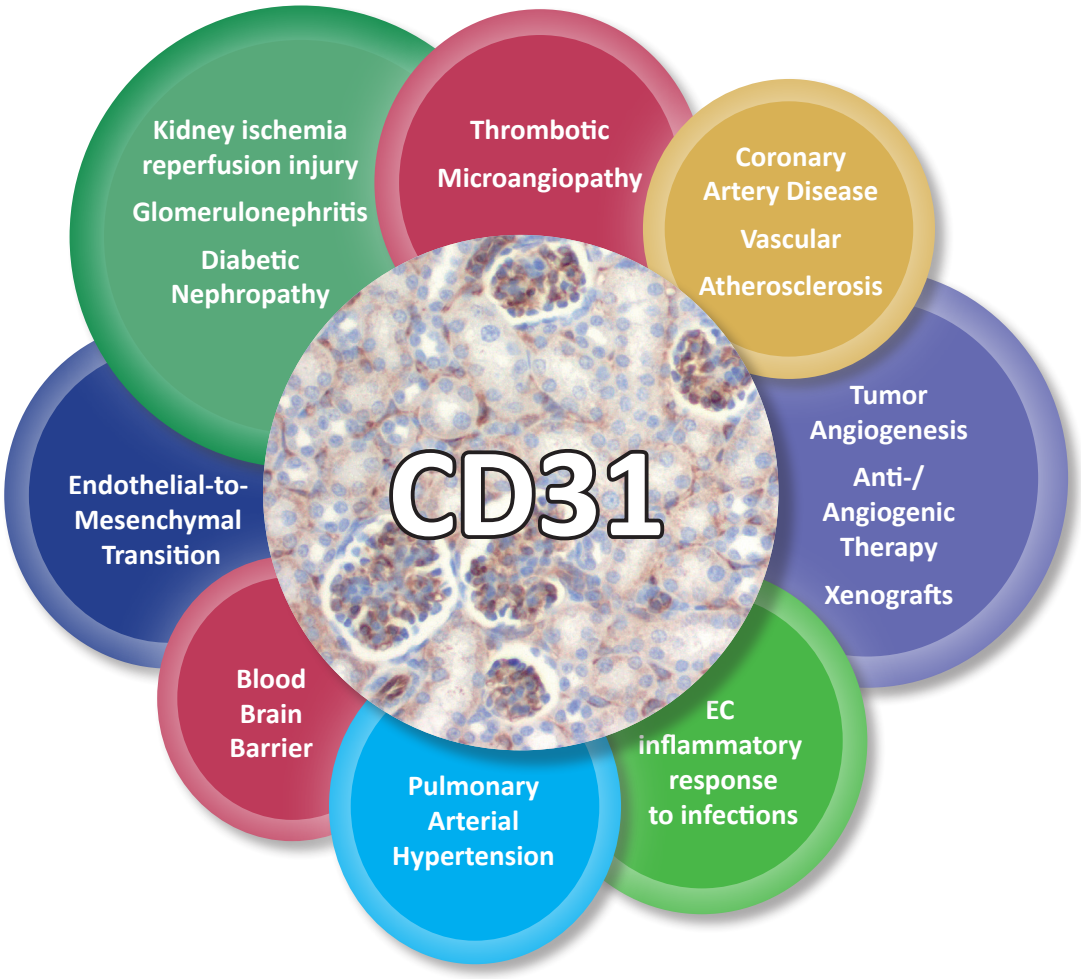
Antibody References

With more than 300 publications, dianova's clone SZ31 is the benchmark for endothelial cell staining in mouse paraffin sections.

For a complete list of references visit

www.dianova.com/CD31/

Enhancing Your Preclinical Research



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Under the brand dianova™ BIOZOL presents a growing selection of premium antibodies available world wide. This selection comprises different product lines. Highlights are outstanding antibodies for human pathology, that are suitable for standard formalin-fixed paraffin-embedded tissue sections and other antibodies with unique properties such as CD31 clone SZ31.

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