Anti-mouse CD31 / DIA-310

Rat monoclonal anti-mouse endothelial cell marker CD31 (PECAM-1), Clone SZ31

Product Information

Catalog No.:	**DIA-310** (100µg) DIA-310-M (20µg)
Clone:	SZ31
Concentration:	0.2 mg/ml
Isotype:	Rat IgG2a
Specificity:	Murine CD31 (PECAM-1) (adult and embryonic endothelial cells)
Immunogen:	Murine amino acid fragment (amino acids 610-691 of mouse CD31)
Species Reactivity:	Mouse, pig, does not crossreact with rat or human
Physical State:	Lyophilized powder
Reconstitution:	DIA-310 (100 µg), restore to 500 µl DIA-310-M (20 µg), restore to 100 µl Reconstitute with sterile distilled water by gentle shaking for 10 minutes
Presentation:	PBS with 2% BSA, 0.05% NaN3, pH 7.4. Antibody purified from culture supernatant
Applications:	Immunohistochemistry (standard formalin-fixed paraffin and frozen sections) Western blot
Dilutions:	1:20 Immunohistochemistry (IHC) 1:5000 Western Blot (General recommendation, validation of antibody performance/protocol using proper controls is the responsibility of the end user.)

Reactivity

Antibody clone SZ31 is the first antibody which reacts specifically with murine CD31 in formalin-fixed paraffin-embedded tissue sections.
CD31, also known as PECAM-1 (Platelet Endothelial Cell Adhesion Molecule-1) is expressed constitutively on the surface of embryonic and adult endothelial cells. It 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. CD31 is a 130kDa integral membrane glycoprotein and as a member of the immunoglobulin superfamily involved in the mediation of cell-to-cell adhesion. CD31-mediated endothelial cell-cell interactions play a major role in angiogenesis. Studies have shown CD31 to be a superior marker in human angiogenesis, which reportedly predicts tumor recurrence. Pathophysiological studies of CD31 in murine model systems had limitations because standard formalin-fixed sections were excluded. The clone SZ31 eliminates these restrictions by allowing high quality immunohistochemical analysis of standard formalin-fixed paraffin sections in mice.

Instructions for Use

Immunohistochemical staining of standard formalin-fixed paraffin sections

Indirect alkaline phosphatase staining (Other techniques, e.g. Avidin-Biotin-alkaline phosphatase (ABAP), alkaline phosphatase anti-alkaline phosphatase (APAAP) or horseradish peroxidase (HRP) -method are also possible).

1. Deparaffinize formalin-fixed paraffin-embedded mouse tissue sections by a standard procedure using xylol/ethanol
2. Antigen retrieval: high temperature heating of sections in citrate buffer pH 6,0 according to standard procedures
3. Block with 5% rabbit serum, 10 min RT
4. Wash with TBS, 3 x 5 min
5. Incubate with DIA-310 (1:10-1:20), 30min RT
6. Wash with TBS, 3 x 5 min
7. Incubate with rabbit anti-rat IgG (H+L) alkaline phosphatase (1:200), 30min RT
8. Wash with TBS, 3 x 5 min
9. Add substrate, e.g. Neufuchsin, 30min RT
10. Counterstain, e.g. with Hematoxylin-Papanicolaou

Storage and Stability

The antibody clone SZ31 in lyophilised form is stable for at least one year (-20°). As reconstituted liquid store at 2-8°C short term (several weeks). For long term storage aliquot and freeze at -20°C or -80°C. Avoid repeated freeze / thaw cycles

Safety Notes

The material contains 0.05% sodium azide as preservative. Although the quantity of azide is very small, appropriate care should be taken when handling this material. Avoid skin and eye contact, inhalation, and ingestion.

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Figure 1

Immunohistochemistry of mouse CD31 (PECAM-1) in formalin-fixed paraffin-embedded tissue sections
(pictures courtesy of Prof. Dr. Robert Klopfleisch, Institute of Pathology, Department of Veterinary Pathology, Berlin, Germany)

The monoclonal antibody clone SZ31 reacts specifically with endothelial cells in vessels and capillaries of aorta (**A**), aortic origin (**B**), endocardium (**C**), small intestine (**D, E**), Colon (**F**), brain (**G**), lymph nodes (**H**), bone marrow (**I**), mesenterial vessels (**J**), kidney (**K**) and pancreas (**L**). All sections were stained by an indirect horseradish peroxidase (HRP)-method according to standard procedures, counterstaining with Hämatoxylin.

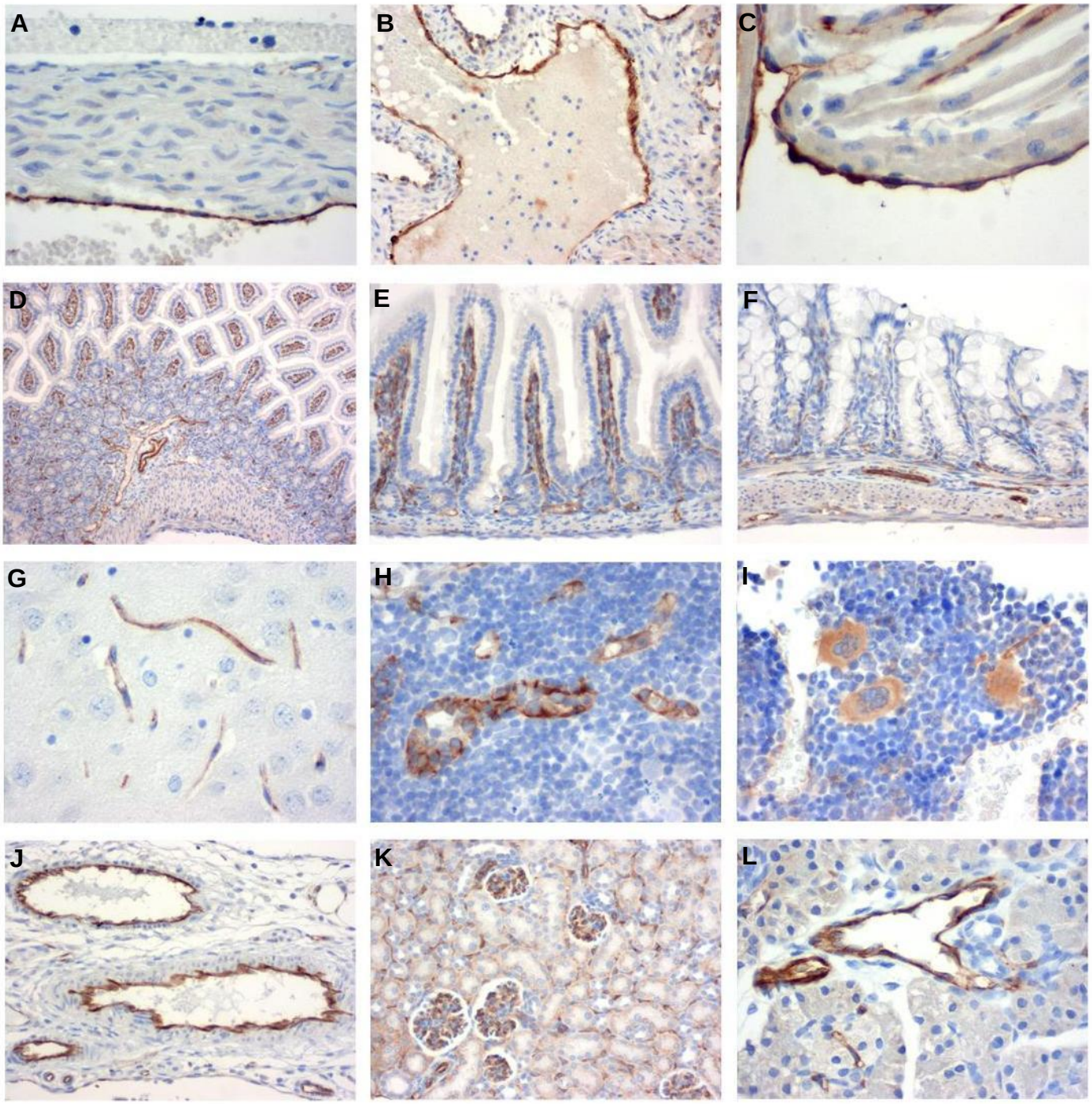

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Figure 2

Immunohistochemistry of mouse CD31 (PECAM-1) in formalin-fixed paraffin-embedded tissue sections
(pictures courtesy of Prof.Dr.H.Stein, Institute of Pathology, Charité Campus Benjamin Franklin, Berlin, Germany)

The monoclonal antibody clone SZ31 reacts specifically with endothelial cells in vessels and capillaries of murine lung (**A**), skeletal muscle (**B**),spinal cord (**C**), liver (**D**), and murine adenocarcinoma (**E, F**). All sections were stained by an indirect alkaline phosphatase method according to standard procedures with antigen retrieval by high-temperature heating in citrate buffer and counterstaining with Hämatoxylin-Papanicolaou.

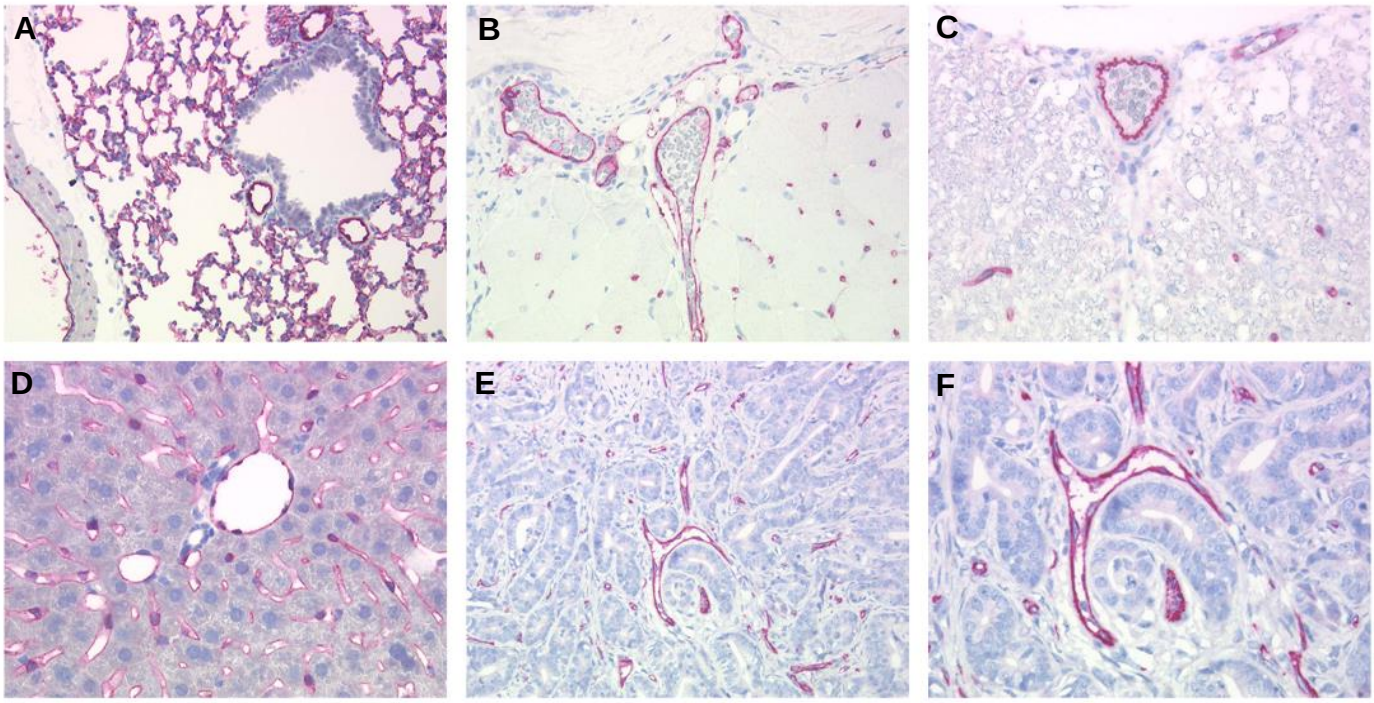
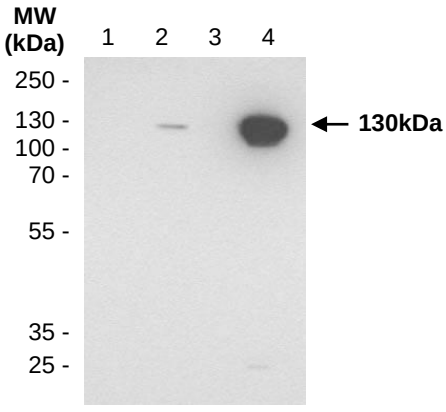


Figure 3

Western blot analysis: Immunoblot of extracts from murine lung, J558L cells and m-Lend cells using CD31 rat monoclonal antibody clone SZ31 (DIA-310 1:5.000) and goat anti-rat-HRP antibody (1:10.000)

Lane:	1	J558 cells (CD31-), 25µg lysate
	2	murine lung, 25µg lysate
	3	blank
	4	m-Lend cells (CD31+), 12.5µg lysate



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References for anti-ms CD31, clone SZ31

1. Hölscher et al. Cardiomyocyte-specific prolyl-4-hydroxylase domain 2 knock out protects from acute myocardial ischemic injury. *J.Biol.Chem.* 286: 11185-11194, 2011
2. Kröger C et al. Placental vasculogenesis is regulated by keratin-mediated hyperoxia in murine decidual tissues. *Am.J.Pathol.* 178(4): 1587-1590, 2011
3. Agliano A et al. Therapeutic effect of lenalidomide in a novel xenograft mouse model of human blastic NK cell lymphoma/blastic plasmacytoid dendritic cell neoplasm. Clin Cancer Res. 1;17(19):6163-73, 2011
4. Ferretti E et al. Absence of IL-12R?2 in CD33(+)CD38(+) pediatric acute myeloid leukemia cells favours progression in NOD/SCID/IL2R?C-deficient mice. Leukemia 26(2):225-35, 2012
5. Jiang J et al. NAHA, a Novel Hydroxamic Acid-Derivative, Inhibits Growth and Angiogenesis of Breast Cancer In Vitro and In Vivo. *PLoS ONE* 7(3): e34283, 2012
6. Karasawa F et al. Essential role of gastric gland mucin in preventing gastric cancer in mice. *J Clin Invest* 122(3):923-934, 2012
7. Copeland BT et al. Genetic Ablation of the Tetraspanin CD151 Reduces Spontaneous Metastatic Spread of Prostate Cancer in the TRAMP Model. *Mol Cancer Res.* 11(1):95-105, 2013
8. Abel et al. et al. Specific gene delivery to liver sinusoidal and artery endothelial cells. *Blood* 122(12):2030-2038, 2013
9. Woik N. et al. Kelch-like ECT2-interacting protein KLEIP regulates late-stage pulmonary maturation via Hif-2α in mice. *Disease Model. Mech.* 7(6): 683-692, 2014