

## Technical Data Sheet

## Purified NA/LE Rat Anti-Mouse CD31

## Product Information

<b>Material Number:</b>	553369
<b>Alternate Name:</b>	PECAM-1
<b>Size:</b>	0.5 mg
<b>Concentration:</b>	1.0 mg/ml
<b>Clone:</b>	MEC 13.3
<b>Immunogen:</b>	129/Sv mouse-derived endothelioma cell line tEnd.1
<b>Isotype:</b>	Rat (LEW) IgG2a, $\kappa$
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	No azide/low endotoxin: Aqueous buffered solution containing no preservative, 0.2 $\mu$ m sterile filtered. Endotoxin level is $\leq 0.01$ EU/ $\mu$ g ( $\leq 0.001$ ng/ $\mu$ g) of protein as determined by the LAL assay.

## Description

The MEC13.3 antibody reacts with 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 ( $\alpha$ v $\beta$ 3 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.

## Preparation and Storage

Store undiluted at 4°C.

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

This preparation contains no preservatives, thus it should be handled under aseptic conditions.

## Application Notes

## Application

Flow cytometry	Routinely Tested
Blocking	Reported
Immunoprecipitation	Reported
Immunohistochemistry-zinc-fixed	Reported
Immunohistochemistry-frozen	Reported
Immunohistochemistry-formalin (antigen retrieval required)	Not Recommended

## Recommended Assay Procedure:

For immunohistochemistry, the use of formulated Purified Rat Anti-Mouse CD31 clone MEC13.3 antibody (Cat. No. 550274) is recommended.

## Suggested Companion Products

Catalog Number	Name	Size	Clone
553926	Purified NA/LE Rat IgG2a $\kappa$ Isotype Control	0.5 mg	R35-95
555988	FITC Goat Anti-Mouse IgG/IgM	0.5 mg	Polyclonal
553370	Purified Rat Anti-Mouse CD31	0.5 mg	MEC 13.3
550274	Purified Rat Anti-Mouse CD31	1.0 ml	MEC 13.3

## Product Notices

- Since applications vary, each investigator should titrate the reagent to obtain optimal results.
- Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.

## References

Baldwin HS, Shen HM, Yan HC, et al. Platelet endothelial cell adhesion molecule-1 (PECAM-1/CD31): alternatively spliced, functionally distinct isoforms expressed during mammalian cardiovascular development. *Development*. 1994; 120(9):2539-2953. (Clone-specific: Blocking)

Christofidou-Solomidou M, Nakada MT, Williams J, Muller WA, DeLisser HM. Neutrophil platelet endothelial cell adhesion molecule-1 participates in neutrophil recruitment at inflammatory sites and is down-regulated after leukocyte extravasation. *J Immunol*. 1997; 158(10):4872-4878. (Clone-specific: Blocking)

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DeLisser HM, Christofidou-Solomidou M, Strieter RM, et al. Involvement of endothelial PECAM-1/CD31 in angiogenesis. *Am J Pathol.* 1997; 151(3):671-677. (Clone-specific: Blocking)

DeLisser HM, Newman PJ, Albelda SM. Molecular and functional aspects of PECAM-1/CD31. *Immunol Today.* 1994; 15(10):490-495. (Biology)

Duncan GS, Andrew DP, Takimoto H, et al. Genetic evidence for functional redundancy of Platelet/Endothelial cell adhesion molecule-1 (PECAM-1): CD31-deficient mice reveal PECAM-1-dependent and PECAM-1-independent functions. *J Immunol.* 1999; 162(5):3022-3030. (Biology)

Famiglietti J, Sun J, DeLisser HM, Albelda SM. Tyrosine residue in exon 14 of the cytoplasmic domain of platelet endothelial cell adhesion molecule-1 (PECAM-1/CD31) regulates ligand binding specificity. *J Cell Biol.* 1997; 138(6):1425-1435. (Biology)

Horenstein AL, Stockinger H, Imhof BA, Malavasi F. CD38 binding to human myeloid cells is mediated by mouse and human CD31. *Biochem J.* 1998; 330(3):1129-1135. (Biology)

Ling V, Luxenberg D, Wang J, et al. Structural identification of the hematopoietic progenitor antigen ER-MP12 as the vascular endothelial adhesion molecule PECAM-1 (CD31). *Eur J Immunol.* 1997; 27(2):509-514. (Biology)

Piali L, Hammel P, Uhrek C, et al. CD31/PECAM-1 is a ligand for alpha v beta 3 integrin involved in adhesion of leukocytes to endothelium. *J Cell Biol.* 1995; 130(2):451-460. (Biology)

Rosenblum WI, Murata S, Nelson GH, Werner PK, Ranken R, Harmon RC. Anti-CD31 delays platelet adhesion/aggregation at sites of endothelial injury in mouse cerebral arterioles. *Am J Pathol.* 1994; 145(1):33-36. (Clone-specific: Blocking)

Suri C, Jones PF, Patan S, et al. Requisite role of angiopoietin-1, a ligand for the TIE2 receptor, during embryonic angiogenesis. *Cell.* 1996; 87(7):1171-1180. (Biology)

Vanzulli S, Gazzaniga S, Braidot MF, et al. Detection of endothelial cells by MEC 13.3 monoclonal antibody in mice mammary tumors. *Biocell.* 1997; 21(1):39-46. (Clone-specific: Immunohistochemistry)

Vecchi A, Garlanda C, Lampugnani MG, et al. Monoclonal antibodies specific for endothelial cells of mouse blood vessels. Their application in the identification of adult and embryonic endothelium. *Eur J Cell Biol.* 1994; 63(2):247-254. (Immunogen)

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