

## Technical Data Sheet

## FITC Rat Anti-Mouse CD31

## Product Information

<b>Material Number:</b>	558738
<b>Alternate Name:</b>	PECAM-1
<b>Size:</b>	0.1 mg
<b>Concentration:</b>	0.5 mg/ml
<b>Clone:</b>	390
<b>Immunogen:</b>	C3H/HeJ mouse hematopoietic progenitor cell line 32D
<b>Isotype:</b>	Rat (LEW) IgG2a, $\kappa$
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing $\leq 0.09\%$ sodium azide.

## Description

The 390 antibody reacts with CD31, also known as PECAM-1 (platelet endothelial cell adhesion molecule). CD31 is a ~130 kDa integral membrane glycoprotein, a member of the immunoglobulin superfamily, that mediates homophilic and heterophilic cell-cell adhesion. CD31 is expressed constitutively on the surface of adult and embryonic endothelial cells and is weakly 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 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 390 mAb inhibits a variety of in vitro and in vivo functions mediated by CD31.

This antibody is routinely tested by flow cytometric analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.

## Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. The antibody was conjugated with FITC under optimum conditions, and unreacted FITC was removed. Store undiluted at 4° C and protected from prolonged exposure to light. Do not freeze.

## Application Notes

## Application

Flow cytometry	Routinely Tested
----------------	------------------

## Suggested Companion Products

Catalog Number	Name	Size	Clone
553929	FITC Rat IgG2a, $\kappa$ Isotype Control	0.25 mg	R35-95

## Product Notices

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

## BD Biosciences

[www.bdbiosciences.com](http://www.bdbiosciences.com)

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.259.0187	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country-specific contact information, visit [www.bdbiosciences.com/how\\_to\\_order/](http://www.bdbiosciences.com/how_to_order/)

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

BD, BD Logo and all other trademarks are the property of Becton, Dickinson and Company. ©2007 BD



## 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.(Immunogen)
- Buck CA, Baldwin HS, DeLisser H, et al. Cell adhesion receptors and early mammalian heart development: an overview. *C R Acad Sci III*. 1993; 316(9):849-859. (Biology)
- Buck CA, Edelman JM, Buck CE, Kennedy G, Baldwin HS. Expression patterns of adhesion receptors in the developing mouse lung: functional implications. *Cell Adhes Commun*. 1996; 4(2):69-87.(Biology)
- 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.(Biology)
- 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)
- 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)
- Iguchi A, Okuyama R, Koguma M, Obinata M, Yanai N. Selective stimulation of granulopoiesis in vitro by established bone marrow stromal cells. *Cell Struct Funct*. 1997; 22(3):357-364.(Clone-specific)
- 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, Nelson GH, Wormley B, Werner P, Wang J, Shih CC. Role of platelet-endothelial cell adhesion molecule (PECAM) in platelet adhesion/aggregation over injured but not denuded endothelium in vivo and ex vivo. *Stroke*. 1996; 27(4):709-711.(Clone-specific)

## BD Biosciences

[www.bdbiosciences.com](http://www.bdbiosciences.com)

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.259.0187	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country-specific contact information, visit [www.bdbiosciences.com/how\\_to\\_order/](http://www.bdbiosciences.com/how_to_order/)

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

BD, BD Logo and all other trademarks are the property of Becton, Dickinson and Company. ©2007 BD

