

# Technical Data Sheet

## BUV496 Rat Anti-Mouse CD31

### Product Information

|                    |   |
|--------------------|---|
| Material Number:   | 741084  |
| Size:              | 50 µg   |
| Clone:             | 390   |
| Alternative Name:  | Platelet endothelial cell adhesion molecule; Pecam1; PECAM-1; Pecam-1 |
| Reactivity:        | Mouse (Tested in Development)   |
| Isotype:           | Rat LEW, also known as Lewis IgG2a, κ                                 |
| Immunogen:         | C3H/HeJ mouse hematopoietic progenitor cell line 32D                  |
| Application:       | Flow cytometry (Qualified)  |
| Concentration:     | 0.2 mg/ml   |
| Entrez Gene ID:    | 18613   |
| Storage Buffer:    | Aqueous buffered solution containing ≤0.09% sodium azide.             |
| Regulatory Status: | RUO   |

### Description

The 390 monoclonal antibody specifically binds to 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 (αvβ3 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.

The antibody was conjugated to BD Horizon™ BUV496 which is part of the BD Horizon Brilliant™ Ultraviolet family of dyes. This dye is a tandem fluorochrome of BD Horizon BUV395 with an Ex Max of 348-nm and an acceptor dye with an Em Max at 496-nm. BD Horizon BUV496 can be excited by the ultraviolet laser (355 nm) and detected with a 515/30 nm filter with a 450LP. Due to the excitation of the acceptor dye by other laser lines, there may be significant spillover into the channel detecting BD Horizon V500 or BV510 (eg, 525/40-nm filter). However, the spillover can be corrected through compensation as with any other dye combination.

### Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze. The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. The antibody was conjugated with BD Horizon BUV496 under optimal conditions that minimize unconjugated dye and antibody.

### Recommended Assay Procedure

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes (including BD OptiBuild Brilliant reagents) are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794).

### Suggested Companion Products

| Catalog Number | Name                                | Size      | Clone  |
|----------------|-------------------------------------|-----------|--------|
| 612951         | BUV496 Rat IgG2a, κ Isotype Control | 50 µg     | R35-95 |
| 554656         | Stain Buffer (FBS)                  | 500 mL    |        |
| 554657         | Stain Buffer (BSA)                  | 500 mL    |        |
| 563794         | Brilliant Stain Buffer              | 100 Tests |        |

|        |  |        |       |
|--------|--|--------|-------|
| 555899 | Lysing Buffer  | 100 mL |       |
| 553141 | Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) | 0.1 mg | 2.4G2 |

## Product Notices

1. This antibody was developed for use in flow cytometry.
2. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
3. Researchers should determine the optimal concentration of this reagent for their individual applications.
4. An isotype control should be used at the same concentration as the antibody of interest.
5. 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.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at [wwwbdbiosciences.com/colors](http://wwwbdbiosciences.com/colors).
7. Please refer to [wwwbdbiosciences.com/us/s/resources](http://wwwbdbiosciences.com/us/s/resources) for technical protocols.
8. BD Horizon Brilliant Stain Buffer is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,575,303; 8,354,239.
9. BD Horizon Brilliant Ultraviolet 496 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,575,303; and 8,354,239.

## 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: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- DeLisser HM, Newman PJ, Albelda SM. Molecular and functional aspects of PECAM-1/CD31. *Immunol Today*. 1994; 15(10):490-495. (Biology: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- 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: Flow cytometry).
- Piali L, Hammel P, Uherek 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: Flow cytometry).
- 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: Flow cytometry).

## BD Biosciences

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

|                               |                        |                         |                       |                              |  |
|-------------------------------|------------------------|-------------------------|-----------------------|------------------------------|--|
| United States<br>877.232.8995 | Canada<br>888.268.5430 | Europe<br>32.53.720.550 | Japan<br>0120.8555.90 | Asia Pacific<br>65.6861.0633 | Latin America/Caribbean<br>0800.771.7157 |
|-------------------------------|------------------------|-------------------------|-----------------------|------------------------------|--|



For country contact information, visit [bdbiosciences.com/contact](http://bdbiosciences.com/contact)

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 a 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.

©2020 BD. All rights reserved. Unless otherwise noted, BD, the BD Logo and all other trademarks are the property of Becton, Dickinson and Company or its affiliates.