CD31 (PECAM-1)

Concentrated and Prediluted Monoclonal Antibody
901-347-072917

BIOCARE MEDICAL

Catalog Number:	CM 347 A, C	PM 347 AA
Description:	0.1, 1.0 ml, concentrated	6.0 ml, prediluted
Dilution:	1:200	Ready-to-use
Diluent:	Renoir Red	N/A

Intended Use:

For In Vitro Diagnostic Use

CD31 (PECAM-1) [BC2] is a mouse monoclonal antibody that is intended for laboratory use in the qualitative identification of CD31 protein by immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence should be complemented by morphological studies using proper controls and should be evaluated within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

Summary and Explanation:

CD31 recognizes a 100kDA glycoprotein in endothelial cells and 130kD in platelets. It reacts weakly with mantle zone B-cells, peripheral T-cells, and neutrophils. CD31 can detect vascular endothelium associated antigen and has been used as a marker for benign and malignant human vascular disorders, myeloid leukemia infiltrates and megakaryocytes in normal bone marrow. When compared to Factor VIII and CD34 antibodies, studies have shown CD31 to be a superior marker for angiogenesis. CD31 has been used to measure angiogenesis, which reportedly predicts tumor recurrence. CD31 used in a panel with CD34 and Factor VIII has also been used to mark Kaposi's sarcoma and angiosarcomas. Other studies have also indicated that CD31 and CD34 can be used as markers for myeloid progenitor cells that recognize different subsets of myeloid leukemia infiltrates (granular sarcomas).

Principle of Procedure:

Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, an enzyme labeled polymer is added to bind to the primary antibody. This detection of the bound antibody is evidenced by a colorimetric reaction.

Source: Mouse monoclonal

Species Reactivity: Human; others not tested

Clone: BC2

Isotype: IgG1/kappa

Epitope/Antigen: CD31

Cellular Localization: Cytoplasmic/membrane

Positive Control: Tonsil, angiosarcoma, or colon cancer

Total Protein Concentration: ~10 mg/ml. Call for lot specific Ig concentration.

Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

Supplied As: Buffer with protein carrier and preservative

Storage and Stability:

Store at 2ºC to 8ºC. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Protocol Recommendations:

Peroxide Block: Block for 5 minutes with Biocare's Peroxidazed 1.

Pretreatment: Perform heat retrieval using Biocare's Diva Decloaker. Refer to the Diva Decloaker data sheet for specific instructions.

Protocol Recommendations Cont'd:

Protein Block (Optional): Incubate for 5-10 minutes at RT with Biocare's Background Punisher.

Primary Antibody: Incubate for 30 minutes at RT.

Probe: N/A

Polymer: Incubate for 30 minutes at RT with a secondary-conjugated polymer.

Chromogen:

Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with Biocare's Warp Red.

Counterstain:

Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:

This antibody has been standardized with Biocare's MACH 2 detection system. Use TBS buffer for washing steps.

Limitations:

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. The clinical interpretation of any positive or negative staining should be evaluated within the context of clinical presentation, morphology and other histopathological criteria by a qualified pathologist. The clinical interpretation of any positive or negative staining should be complemented by morphological studies using proper positive and negative internal and external controls as well as other diagnostic tests.

Quality Control:

Refer to CLSI Quality Standards for Design and Implementation of Immunohistochemistry Assays; Approved Guideline-Second edition (I/LA28-A2) CLSI Wayne, PA USA (www.clsi.org). 2011

Precautions:

1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN_3) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (7)
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water. (8)
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.

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Precautions Cont'd:
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at http://biocare.net.

Troubleshooting:
Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare's Technical Support at 1-800-542-2002.

References:
1. Govender D, *et al.* CD31 (JC70) expression in plasma cells: an immunohistochemical analysis of reactive and neoplastic plasma cells. J Clin Pathol. 1997 Jun;50(6):490-3.
2. Rongioletti F, *et al.* Tumor vascularity as a prognostic indicator in intermediate thickness (0.76-4 mm) cutaneous melanoma. A quantitative assay. Am J Dermatopathol. 1996 Oct;18(5):474-7.
3. Engel CJ, *et al.* Tumor angiogenesis predicts recurrence in invasive colorectal cancer when controlled for Dukes staging. Am J Surg Pathol. 1996 Oct;20 (10):1260-5.
4. Russell Jones R, *et al.* Staining for CD31 and CD34 in Kaposi sarcoma. Virchows Arch. 1996 Jul;428(4-5):217-21.
5. Poblet E, *et al.* Different immunoreactivity of endothelial markers in well and poorly differentiated areas of angiosarcomas. J Clin Pathol. 1995 Nov;48(11):1011-6.
6. Hudock J, Chatten J, Miettinen M. Immunohistochemical evaluation of myeloid leukemia infiltrates (granulocytic sarcomas) in formaldehyde-fixed, paraffin-embedded tissue. Am J Clin Pathol. 1994 Jul;102(1):55-60.
7. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
8. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.

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