

**Analyte Specific Reagent.**

**Analytical and performance characteristics are not established.**

**SPECIFICITY**

The CD31 antigen, also known as Platelet Endothelial Cell Adhesion Molecule 1 (PECAM-1), is a transmembrane glycoprotein of 130 kDa related to the immunoglobulin superfamily (1). The expression of CD31 on stem cells of the myeloid lineage, on platelets and on endothelial cell junctions (2) is reviewed in Ref. 3. CD31 is involved in the migration of leucocytes through the endothelial cell wall, via adhesion to αvβ3 integrin and to CD38 (4, 5). In addition, CD31 participates in outside-in signaling in leucocytes (6) likely through phosphorylation of its intracytoplasmic tyrosine residues 663 and 686 and subsequent association with tyrosine phosphatases SHP-1 and SHP-2 (7). On platelets, recent studies suggest a comparable mechanism of action for CD31 in activation and aggregation (8, 9).

The 5.6E monoclonal antibody has been assigned (as antibody No. P90) to the CD31 cluster of differentiation at the 4th International Workshop on Human Leucocyte Differentiation Antigens in Vienna, Austria, in 1989 (10) and further described in references 8 and 11).

**REAGENT**

IOTest CD31-FITC Conjugated Antibody  
PN IM1431U – 2 mL Liquid – 20 µL / test\*.

<b>Clone</b>	5.6E
<b>Isotype</b>	IgG1, mouse
<b>Immunogen</b>	Muscle tissue extract (rhabdomyosarcoma)
<b>Hybridoma Source</b>	NS1x Balb/c Ascites fluid
<b>Purification</b>	Ion exchange or affinity chromatography
<b>Conjugation</b>	FITC (Fluorescein isothiocyanate) is conjugated at 4 – 6 moles of FITC per mole of Ig.
<b>Fluorescence</b>	FITC (Green) Excites at 468 – 509 nm Emits at 504 – 541 nm

**REAGENT CONTENTS**

This reagent is provided in phosphate-buffered saline, with 0.1% sodium azide (NaN<sub>3</sub>) as preservative, and 2.0 mg / mL bovine serum albumin (BSA).

**STATEMENT OF WARNINGS**

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazoic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to

avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash excessively with water.

2. Do not use antibody beyond the expiration date on the label.
3. Samples and all material coming in contact with them should be handled as if capable of transmitting infection and disposed of with proper precautions.
4. Never pipet by mouth and avoid contact of samples with skin and mucous membranes
5. Minimize exposure of reagent to light during storage or incubation.
6. Avoid microbial contamination of reagents or incorrect results might occur.
7. Use good laboratory practices when handling this reagent.

**STORAGE CONDITIONS AND STABILITY**

This reagent is stable up to the expiration date when stored at 2 – 8°C. Do not freeze. Minimize exposure to light.

**EVIDENCE OF DETERIORATION**

Any change in the physical appearance of this FITC-labeled reagent (clear, colorless to yellowish-green liquid) or any major variation in values obtained for control samples may indicate deterioration and the reagent should not be used.

**REAGENT PREPARATION**

No preparation is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 18 – 25°C prior to use.

**SELECTED RESEARCH REFERENCES**

1. Newman, P.J., Berndt, M.C., Gorski, J., White II, G.C., Lyman, S., Paddock, C., Muller, "PECAM-1 (CD31) cloning and relation to adhesion molecules of the immunoglobulin gene superfamily", 1990, *Science*, 247, 1219-1222.
2. Muller, W.A., Ratti, C.M., McDonnell, S.L., Cohn, Z.A., "A human endothelial cell-restricted externally disposed plasmalemmal protein enriched in intercellular junctions", 1989, *J. Exp. Med.*, 170, 399-414.
3. DeLisser, H.M., Newman, P.J., Albelda, S.M., "Molecular and functional aspects of PECAM-1/CD31", 1994, *Immunol. Today*, 15, 490-495.
4. Deaglio, S., Morra, M., Mallone, R., Ausiello, C.M., Prager, E., Garbarino, G., Dianzani, U., Stockinger, H., Malavasi, F., "Human CD38 (ADP-ribosyl cyclase) is a counter-receptor of CD31, an Ig superfamily member", 1998, *J. Immunol.*, 160, 395-402.

5. Horenstein, A.L., Stockinger, H., Imhof, B.A., Malavasi, F., "CD38 binding to human myeloid cells is mediated by mouse and human CD31", 1998, *Biochem. J.*, 330, 1129-1135.
6. Elias III, C.G., Spellberg, J.P., Karan-Tamir, B., Lin, C-H., Wang, Y-J., McKenna, P.J., Muller, W.A., Zukowski, M.M., Andrew, D.P., "Ligation of CD31/PECAM-1 modulates the function of lymphocytes, monocytes and neutrophils", 1998, *Eur. J. Immunol.*, 28, 1948-1958.
7. Pumphrey, N.J., Taylor, V., Freeman, S., Douglas, M.R., Bradfield, P.F., Young, S.P., Lord, J.M., Wakelam, M.J.O., Bird, I.N., Salmon, M., Buckley, C.D., "Differential association of cytoplasmic signalling molecules SHP-1, SHP-2, SHIP and phospholipase C-γ1 with PECAM-1/CD31", 1999, *FEBS Letters*, 450, 77-83.
8. Wu, X-W., Lian, E.C-Y., "Binding properties and inhibition of platelet aggregation by a monoclonal antibody to CD31 (PECAM-1)", 1997, *Arterioscler Thromb. Vasc. Biol.*, 17, 3154-3158.
9. Varon, D., Jackson, D.E., Shenkman, B., Dardik, R., Tamarin, I., Savion, N., Newman, P.J., "Platelet / endothelial cell adhesion molecule-1 serves as a costimulatory agonist receptor that modulates integrin-dependent adhesion and aggregation of human platelets", 1998, *Blood*, 91, 500-507.
10. Von Dem Borne, A.E.G.K., Modderman, P.W., Admiraal, L.G., Nieuwenhuis, H.K., "Platelet antibodies, the overall results", 1989, *Leucocyte Typing IV, White Cell Differentiation Antigens*. W. Knapp, et al., Eds., Oxford University Press, 951-966.
11. Mutin, M., Dignat-George, F., Sampol, J., "Immunologic phenotype of cultured endothelial cells: quantitative analysis of cell surface molecules", 1997, *Tissue Antigens*, 50, 449-458.

**PRODUCT AVAILABILITY**

IOTest CD31-FITC Conjugated Antibody  
PN IM1431U – 2 mL Liquid – 20 µL / test\*.

For additional information in the USA, call 800-526-7694.

Outside the USA, contact your local Beckman Coulter representative.

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

(\*) : 20 µL is the quantity of product sufficient to stain 5 x 10<sup>5</sup> cells in a standard immunofluorescence assay



# IOTest<sup>®</sup> CD31-FITC

PN IM1431U – 2 mL Liquid – 20 µL / test\* – Clone 5.6E

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