P.O. Box 3286 - Logan, Utah 84323, U.S.A. - Tel. (800) 729-8350 – Tel. (435) 755-9848 - Fax (435) 755-0015 - www.ScyTek.com

CD31; Clone C31.3

Catalog Number	Format	Volume
A00126-0002	(Ready-To-Use)	2 ml
A00126-0007	(Ready-To-Use)	7 ml
A00126-0025	(Ready-To-Use)	25 ml
A00126-C	(Concentrate)	1 ml

Intended Use

For In-Vitro Diagnostic Use. This antibody is intended for the qualitative visualization of the anatomical elements listed in the Specificity section. It is intended to be used within an Immunohistochemistry (IHC) procedure on formalin-fixed paraffin-embedded (FFPE) human tissue followed by visualization by light microscopy.

Description

Titer/Working Dilution: Ready-to-Use: No further dilution required.
Concentrate: Suggested dilution is 1:100-200

Species: Mouse

Immunogen: Human spleen membranes from a patient with hairy cell leukemia was used as immunogen to generate the CD31 (PECAM-1) antibody (Parums, 1990).

Clone: C31.3

Isotype: Mouse IgG1, Kappa

Format: Ready-To-Use antibody has been pre-titered and quality controlled to work on formalin-fixed paraffin-embedded as well as acetone fixed cryostat tissue sections. No further titration is required.
Concentrate antibody is provided in a phosphate buffered saline containing 1% BSA.

Specificity: The CD31 antibody (clone C31.3 or PECAM-1) is widely used as a pan-endothelial cell marker to demonstrate the presence of endothelial cells in tissue sections by immunohistochemistry. The CD31 (PECAM-1) antibody reacts with normal, benign, and malignant endothelium.

Background: CD31 (PECAM-1) is a transmembrane glycoprotein member of the immunoglobulin supergene family of adhesion molecules, and plays key roles in leukocyte migration, angiogenesis, and integrin activation. CD31 is expressed on endothelial and hematopoeitic (platelets, monocytes, macrophages, granulocytes, T and B lymphocytes, dendritic, bone marrow stem and adult) cells. The CD31 antibody stains these various cell types to various degrees (Parvens, 1990; Govender, 1997).

The CD31 antibody (clone C31.3 or PECAM-1) is widely used as a pan-endothelial cell marker to demonstrate the presence of endothelial cells in tissue sections by immunohistochemistry. The CD31 (PECAM-1) antibody reacts with normal, benign, and malignant endothelium and has a number of practical applications including marking vessels and assessing tumor microvessel density (Giatromanolaki, 2012). Since malignant endothelium retains CD31 expression, the CD31 antibody is commonly used in antibody panels to determine or confirm tissue origin of a given tumor (Gratzinger, 2009). This can be particularly useful as it can otherwise be difficult to distinguish endothelial from other cell types in routine tissue sections solely by morphological features.

Endothelial cells make up blood vessel lining, and angiogenesis refers to the growth of new blood vessels from pre-existing vessels. Pathological angiogenesis is associated with tumor growth and metastasis, and the CD31 antibody is useful for helping to confirm (CD31 / PECAM-1 antibody positive) or exclude (CD31 / PECAM-1 antibody negative) neoplastic angioinvasion (Jernman, 2012). The level of CD31 expression can help to determine the degree of tumor angiogenesis, and a high level of CD31 (PECAM-1) antibody staining may imply a rapidly growing tumor and potentially a predictor of tumor recurrence.

Species Reactivity: Human. Others not known.
Positive Control: Tonsil, Liver, Kidney
Cellular Localization: Cell membrane.
Microbiological State: Nonsterile

Materials and Reagents Required but not Provided

1. Control tissue and reagents
2. Xylene, graded alcohols, and deionized/distilled water
3. Antibody Diluent.
4. IHC detection system. Suggested: ScyTek Cat# ABZ125 “CRF Anti-Polyvalent HRP Polymer” and ScyTek Cat# ACV500 “DAB Chromogen/Substrate Kit (High Contrast)”.
5. Wash buffer for rinses (ScyTek Cat# TBT500)
6. HIER Retrieval Solution
7. Hematoxylin counterstain and bluing reagent (ScyTek Cat# HMM500 and BRT500)
8. Mounting medium and coverslips

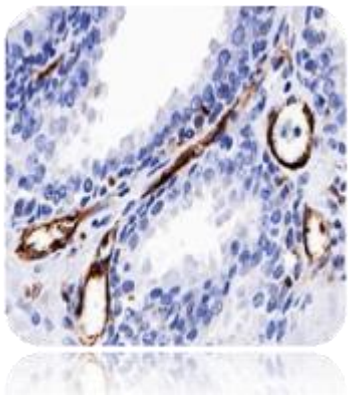
Note: ScyTek Laboratories has a wide range of IHC reagents and ancillaries that can be found at scytek.com.

Procedure

1. **Tissue Section Pretreatment (Highly Recommended):** Staining of formalin fixed paraffin embedded tissue sections is significantly enhanced by pretreatment with Tis-EDTA HIER Solution (10x) pH 9.0 (ScyTek catalog# TES500) or Citrate Plus (10x) HIER Solution (ScyTek catalog# CPL500)

2. **Primary Antibody Incubation Time:** We suggest an incubation period of 30 minutes at room temperature. However, depending upon the fixation conditions and the staining system employed, optimal incubation should be determined by the user.

3. **Visualization:** For maximum staining intensity we recommend the “CRF Anti-Polyvalent HRP Polymer” (ScyTek catalog# ABZ125, see IFU for instructions) combined with the “DAB Chromogen/Substrate Bulk Pack (High Contrast)” (ScyTek catalog# ACV500, see IFU for instructions).



Storage: 2° C – 8° C

ScyTek Laboratories, Inc.
205 South 600 West
Logan, UT 84321
U.S.A.

CE
EC REP
Emergo Europe
Westervoortsedijk 60
6827 AT Arnhem, The Netherlands

P.O. Box 3286 - Logan, Utah 84323, U.S.A. - Tel. (800) 729-8350 – Tel. (435) 755-9848 - Fax (435) 755-0015 - www.ScyTek.com

Storage and Stability

Do not Freeze. Store at 2-8°C. Return to 2-8° immediately after use. Do not use after expiration date printed on label. Verify visually that antibody has not been contaminated before use. Do not use if reagent becomes cloudy or precipitates.

Limitations

Immunohistochemistry is a complex technique involving both histological and immunological detection methods. Tissue processing and handling prior to immunostaining can cause inconsistent results. Variations in fixation and embedding or the inherent nature of the tissue specimen may cause variations in results. Endogenous peroxidase activity or pseudoperoxidase activity in erythrocytes and endogenous biotin may cause non-specific staining depending on detection system used. This data sheet's recommendations and procedures were validated using ScyTek IHC reagents and may not be suitable for other detection systems.

Precautions

1. Contains Sodium Azide as a preservative (0.09% w/v), do not ingest. 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. This product contains no hazardous material at a reportable concentration according to U.S. 29 CFR 1910.1200, OSHA Hazardous Communication Standard and EC Directive 91/155/EC.
2. Do not pipette by mouth.
3. Avoid contact of reagents and specimens with skin and mucous membranes.
4. Avoid microbial contamination of reagents or increased nonspecific staining may occur.
5. The user must validate any procedures and recommendations that differ from this data sheet.
6. The SDS may be found at scytek.com

References

1. Parums DV, JL Cordell, K Micklem, AR Heryet, KC Gatter, DY Mason. J Clin Pathol 43:752-757 (1990). WB: Fig 1 (spleen and platelets); Immunocytochemistry: Fig 2 (blood smear); IHC (frozen): Fig 3 (tonsil); IHC (paraffin): Figs 4-7 (various tissues).
2. Govender D, P Harilal, M Dada, R Chetty. J Clin Pathol 50:490-493 (1997). IHC (paraffin): Fig 1 (chronic inflammatory infiltrate), Fig 2 (multiple myeloma).
3. Jernman J, MJ Valimaki, J Jouhimo, C Haglund, J Arola. Neuroendocrinology 94:317-324 (2012). IHC (paraffin): Tables 1-3 (gastrointestinal neuroendocrine neoplasms).
4. Giatromanolaki A, MI Koukourakis, E Sivridis, K C Gatter, T Trarbach, G Folprecht, M M Shi, D Lebwohl, T Jalava, D Laurent, G Meinhardt, AL Harris. BJC doi: 10.1038/bjc.2012.369 (2012). IHC (paraffin): Fig 1 (colon carcinoma).
5. Gratzinger D, S Zhao, R West, RV Rouse, H Vogel, EC Gil, R Levy, IS Lossos, Y Natkunam. Am J Clin Pathol 131:264-278 (2009). IHC (P). IHC (P): Figs 2B (myocardial vasculature), 2D (fetal myocardial vasculature). Various other tissues were used in this study and results described.

Warranty

No products or "Instructions For Use (IFU)" are to be construed as a recommendation for use in violation of any patents. We make no representations, warranties or assurances as to the accuracy or completeness of information provided on our IFU or website. Our warranty is limited to the actual price paid for the product. ScyTek Laboratories, Inc. is not liable for any property damage, personal injury, time or effort or economic loss caused by our products.

Storage: 2° C 8° C

ScyTek Laboratories, Inc.
205 South 600 West
Logan, UT 84321
U.S.A.

CE

EC REP
Emergo Europe
Westervoortsedijk 60
6827 AT Arnhem, The Netherlands