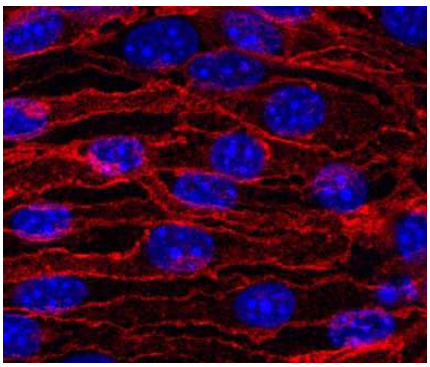
CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	VE-Cadherin, Human, clone BV9, FITC conjugated		
Catalog number	HM2032F-100UG		
Lot number	-	**Expiry date**	-
Volume	1 ml	**Amount**	100 µg
Formulation	0.2 µm filtered in PBS+1%BSA+0.02%NaN3	**Concentration**	100 µg/ml
Host Species	Mouse IgG2a	**Conjugate**	FITC
Endotoxin	N.A.	**Purification**	Protein G
Storage	4°C		

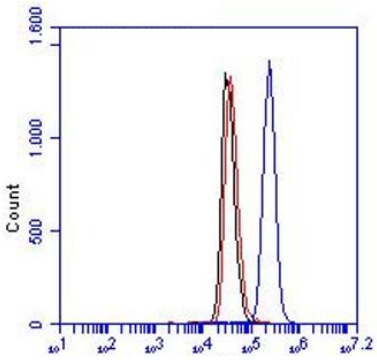
Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #	2		3,5,8	4	5-8		3	1,3
Yes	●		●	●	●	●	●	●
No								
N.D.		●						

N.D.= Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot



IF: Endothelial cells were fixed with 4% PAF (15 min, room temp), and then permeabilized with 0.5% TritionX-100 (3 min, room temperature). Cells were incubated with a final concentration of 10µg/ml BV9. Secondary detection was performed with anti-mouse Alexa-Fluor 647 and counterstained using DAPI.



FC: HUVEC cells were stained with antibody BV9 in PBS/0.1% saponin for 1h at 4°C.(Black- no stain, Red- isotype control, Blue- HM2032).

Dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50.

- F: Acetone fixed sections were blocked with horse serum and incubated with antibody BV9 for 30 minutes (Ref.2).
- FC: Antibody BV9 stains the extracellular domain of VE-cadherin. As negative control an IgG isotype control was used (Ref.4)
- FS: Antibody BV9 functions as an antagonist. The antibody was functionally tested by adding 10-50µg/ml antibody BV9 to cell culture. The antibody blocks VE-cadherin causing a redistribution of VE-cadherin away from intracellular junctions(Ref.5, 6).
- IA: Antibody BV9 can function as coat and detector.
- IF: Cells on coverslips were fixed with 3% paraformaldehyde and permeabilized with 0.5% Triton X-100 before incubation with antibody BV9 (Ref.5, 8).
- W: A reduced sample treatment and 7.5% SDS-Page was used. The band size is 130-140kDa (Ref.3).
- Positive control: HUVECs grown on coverslips.

General Information

Description

The monoclonal antibody BV9 binds to the extracellular domain (EC3-EC4) of human VE-cadherin (vascular endothelial cadherin). Endothelial cells control the passage of plasma constituents and circulating cells from blood to the underlying tissues. VE-cadherin is of vital importance for the maintenance and control of endothelial cell contacts. Mechanisms that regulate VE-cadherin–mediated adhesion are important for the control of vascular permeability and

leukocyte extravasation. VE-cadherin regulates various cellular processes such as cell proliferation and apoptosis and modulates vascular endothelial growth factor receptor functions. Therefore, VE-cadherin is also essential during embryonic angiogenesis. The specialized function of VE-cadherin is lost or impaired in several pathological conditions - including inflammation, sepsis, ischemia and diabetes - which leads to severe, and sometimes fatal, organ dysfunction. Furthermore, abnormal increase in vascular permeability is often observed in pathological conditions, such as tumor-induced angiogenesis, macular degeneration, allergy, and brain stroke. Endothelial permeability is regulated in part by the dynamic opening and closure of cell-cell adherent junctions. In vascular endothelium, adherent junctions are mainly composed of VE-cadherin, an adhesive receptor that is able to self-associate at endothelial cell–cell contacts. VE-cadherin links endothelial cells together by homophilic interactions mediated by its extracellular part and associates intracellularly with the actin cytoskeleton via catenins. VE-cadherin belongs to the cadherin super-family of cell–cell adhesion molecules, which are encoded by more than 200 genes in the human genome. Classical cadherins are Ca2+-dependent, homophilic, cell to cell adhesion molecules expressed in nearly all cells within solid tissues. Cadherins form a core adhesion complex that consists of a cadherin dimer, binding through its extracellular region to another dimer of cadherins expressed in adjacent cells, while its intracellular region is anchored to the plasma membrane and linked to the cytoskeleton. The VE-cadherin extracellular domain consists of five cadherin-type repeats, called EC (extracellular cadherin) domains that are bound together by calcium ions in a rod-like structure.

Aliases vascular endothelial cadherin, 7B4 antigen, Cadherin-5, CD144

Gene Gene name: CDH5

References

1. Navarro, P et al; Catenin-dependent and -independent functions of vascular endothelial cadherin. J Biol Chem 1995, 270: 30965
2. Martin-Padura, I et al; Expression of VE (vascular endothelial)-cadherin and other endothelial-specific markers in haomangiomas. J path 1995, 175: 51
3. Breviario, F et al; Functional properties of human vascular endothelial cadherin (7B4/Cadherin-5), an endothelium-specific cadherin. Arterioscler Thromb 1995, 15: 1229
4. Gill, M et al. Vascular trauma induces rapid but transient mobilization of VEGFR2+AC133+ endothelial precursor cells. Circ Res 2001, 88: 167
5. Spagnuolo, R et al. Gas1 is induced by VE-cadherin and vascular endothelial growth factor and inhibits endothelial cell apoptosis. Blood 2004, 103: 3005
6. Kuchler, A et al. Nuclear il-33 is generally expressed in resting endothelium but rapidly lost upon angiogenic or proinflammatory activation. AM J path. 2008, 173: 1229
7. Abraham, S et al. VE-cadherin mediated cell-cell interaction suppresses sprouting via signalling to MLC2 phosphorylation. 2009, 19: 668
8. Vallon, M et al. Tumor endothelial marker 5 expression in endothelial cells during capillary marphogenesis is induces by the small GTPase Rac and mediates contact inhibition of cell proliferation. Exp Cell res. 2010, *316*: 412

Storage&stability Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.

Precautions For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC	Date
Brenda Teunissen	29/11/2019

Do you have any questions or comments regarding this product? Please contact us via support@hycultbiotech.com.