

Datasheet: MCA547GT

Description:	MOUSE ANTI HUMAN CD34
Specificity:	CD34 CLASS II
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	QBEND/10
Isotype:	IgG1
Quantity:	25 µg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	■			1/100 - 1/200
Immunohistology - Paraffin	■			1/500 - 1/1000
ELISA			■	
Immunoprecipitation	■			
Western Blotting	■			
Immunofluorescence	■			
Immuno-electron Microscopy	■			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

Target Species	Human
Species Cross Reactivity	Reacts with: Cynomolgus monkey, Rhesus Monkey Does not react with: Bovine, Sheep, Rat, Dog N.B. Antibody reactivity and working conditions may vary between species.
Product Form	Purified IgG - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein A
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Human endothelial cell membrane vesicles.

External Database Links	UniProt: P28906 Related reagents Entrez Gene: 947 CD34 Related reagents
Fusion Partners	Spleen cells from immunized NZB mice were fused with cells of the mouse NSO myeloma cell line.
Specificity	Mouse anti Human CD34 antibody, clone QBEND/10 recognizes the human CD34 antigen, also known as Hematopoietic progenitor cell antigen CD34. Human CD34 is 385 amino acid polypeptide containing a 31 residue signal peptide, cleaved to yield the ~110kDa mature form of CD34, a sialomucin single pass transmembrane glycoprotein. CD34 is expressed by stem cells (Kaufman et al. 2001) and small vessel endothelium (Ramani et al. 1990) Human CD34 exists as two isoforms, the full length form described here and a truncated isoform lacking the carboxy-terminal of the intracellular domain and containing some alternative sequence in the remaining intracellular region. Antibody binding epitopes on human CD34 have been classified according to their resistance to enzymatic degradation and grouped together using this and competitive binding assays (Lanza et al. 1999). Clone QBEND/10 has been classified as binding to the class II epitope, resistant to neuraminidase treatment but sensitive to both glycoprotease and chymopapain digestion. Clone QBEND/10 binds to a different epitope to Mouse anti Human CD34, clone 581 (MCA1578) which binds to the class III epitope resistant to all three enzymatic treatments (Nishio <i>et al.</i> 1996 In Leukocyte Typing VI). Clone QBEND 10 is expected to bind to both isoforms of human CD34 as it's binding epitope has been mapped to the extracellular domain between amino acids 43 and 49 by peptide microarray analysis (Jones <i>et al.</i> 1996, in Leukocyte Typing VI). Mouse anti Human CD34 antibody, clone QBEND/10 has been successfully exploited for the detection of CD34 in brain capillaries of Alzheimer's patients (Kalaria et al. 1992) and in acute lymphoblastic leukemia cells (Sutherland et al. 1992) by western blotting.
Flow Cytometry	Use 10ul of the suggested working dilution to label 10⁶ cells in 100ul.
Immunohistology	This product does not require antigen retrieval using heat treatment or protein digestion. However staining of paraffin embedded formalin fixed tissues may be enhanced by enzyme pre-treatment using pronase or heat treatment using citrate buffer.
Histology Positive Control Tissue	Tonsil, Bone Marrow.
References	1. Fina, L. <i>et al.</i> (1990) Expression of the CD34 gene in vascular endothelial cells. Blood. 75 (12): 2417-26. 2. Sopper, S. <i>et al.</i> (1997) Lymphocyte subsets and expression of differentiation markers in blood and lymphoid organs of rhesus monkeys. Cytometry. 29 (4): 351-62. 3. Chan-Ling T (2011) Role of CD44+ Stem Cells in Mural Cell Formation in the Human Choroid: Evidence of Vascular Instability Due to Limited Pericyte Ensheathment. Invest Ophthalmol Vis Sci. 52: 399-410. 4. Pammer, J. <i>et al.</i> (1996) CD40 antigen is expressed by endothelial cells and tumor cells in Kaposi's sarcoma. Am J Pathol. 148 (5): 1387-96. 5. Lee, M.Y. <i>et al.</i> (2009) Angiogenesis in differentiated placental multipotent mesenchymal stromal cells is dependent on integrin alpha5beta1. PLoS One. 4: e6913.

6. Chan-Ling, T. *et al.* (2004) Astrocyte-endothelial cell relationships during human retinal vascular development. [Invest Ophthalmol Vis Sci. 45: 2020-32.](#)
7. Chen, S.P. *et al.* (2014) Reduced circulating endothelial progenitor cells in reversible cerebral vasoconstriction syndrome. [J Headache Pain. 15: 82.](#)
8. Sauer, G. *et al.* (2003) Progression of cervical carcinomas is associated with down-regulation of CD9 but strong local re-expression at sites of transendothelial invasion. [Clin Cancer Res. 9: 6426-31.](#)
9. Sauter, B. *et al.* (1998) Immunoelectron Microscopic Characterization of Human Dermal Lymphatic Microvascular Endothelial Cells: Differential Expression of CD31, CD34, and Type IV Collagen with Lymphatic Endothelial Cells vs Blood Capillary Endothelial Cells in Normal Human Skin, Lymphangioma, and Hemangioma *In Situ*. [J Histochem Cytochem. 46: 165-76.](#)
10. Shetty, S. *et al.* (2011) Common lymphatic endothelial and vascular endothelial receptor-1 mediates the transmigration of regulatory T cells across human hepatic sinusoidal endothelium. [J Immunol. 186: 4147-55.](#)
11. Zhao, M. *et al.* (2007) Evidence for the presence of stem cell-like progenitor cells in human adult pancreas. [J Endocrinol. 195: 407-14.](#)
12. Jokubaitis, V.J. *et al.* (2008) Angiotensin-converting enzyme (CD143) marks hematopoietic stem cells in human embryonic, fetal, and adult hematopoietic tissues. [Blood. 111: 4055-63.](#)
13. Rutella, S. *et al.* (2003) Identification of a novel subpopulation of human cord blood CD34-CD133-CD7-CD45+lineage- cells capable of lymphoid/NK cell differentiation after in vitro exposure to IL-15. [J Immunol. 171: 2977-88.](#)
14. Suzuki, M. *et al.* (2012) Induction of human humoral immune responses in a novel HLA-DR-expressing transgenic NOD/Shi-scid/γnull mouse. [Int Immunol. 24 \(4\): 243-52.](#)
15. Hsieh, J.Y. *et al.* (2013) miR-146a-5p circuitry uncouples cell proliferation and migration, but not differentiation, in human mesenchymal stem cells. [Nucleic Acids Res. 41 \(21\): 9753-63.](#)
16. Blank A *et al.* (2010) SDHB loss predicts malignancy in pheochromocytomas/sympathetic paragangliomas, but not through hypoxia signalling. [Endocr Relat Cancer. 17 \(4\): 919-28.](#)
17. Junaid TO *et al.* (2014) Fetoplacental vascular alterations associated with fetal growth restriction. [Placenta. 35 \(10\): 808-15.](#)
18. Belet M *et al.* (2012) Integrative genome-wide expression profiling identifies three distinct molecular subgroups of renal cell carcinoma with different patient outcome. [BMC Cancer. 12: 310.](#)
19. Chan-Ling T *et al.* (2011) Evidence of hematopoietic differentiation, vasculogenesis and angiogenesis in the formation of human choroidal blood vessels. [Exp Eye Res. 92 \(5\): 361-76.](#)
20. Motamedian, S.R. *et al.* (2016) Response of Dental Pulp Stem Cells to Synthetic, Allograft, and Xenograft Bone Scaffolds. [Int J Periodontics Restorative Dent. 37 \(1\): 49-59.](#)
21. Fan, C-Y. *et al.* (2017) *De novo* protein sequencing, humanization and *in vitro* effects of an antihuman CD34 mouse monoclonal antibody [Biochemistry and Biophysics Reports. 9: 51-60.](#)
22. Sameshima, N. *et al.* (2011) So-called 'adenosarcoma' of the kidney a novel adult renal tumor with a cystic appearance. [Pathol Int. 61 \(5\): 313-8.](#)
23. Grognez, A. *et al.* (2016) Human Fetal Progenitor Tenocytes for Regenerative Medicine. [Cell Transplant. 25 \(3\): 463-79.](#)
24. Wang, D.Y. *et al.* (2017) Histological component quantification for the evaluation of endometrial receptivity in women with natural cycles undergoing *in vitro* fertilization/intracytoplasmic sperm injection. [Taiwan J Obstet Gynecol. 56 \(3\): 368-370.](#)
25. GarikipatiV, N.S. *et al.* (2018) Isolation and characterization of mesenchymal stem cells from human fetus heart. [PLoS One. 13 \(2\): e0192244.](#)

Further Reading

1. Gorr, T.A. *et al.* (2011) Old proteins - new locations: myoglobin, haemoglobin, neuroglobin and cytoglobin in solid tumours and cancer cells. [Acta Physiol \(Oxf\). 202: 563-581.](#)

Storage

Store at +4°C or at -20°C if preferred.
 This product should be stored undiluted.
 Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this

may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

Shelf Life	18 months from date of despatch.
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Health And Safety Information	Material Safety Datasheet documentation #10040 available at: 10040: https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf
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Regulatory	For research purposes only
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Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos. , HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC , HRP
Rabbit Anti Mouse IgG (STAR8...)	DyLight®800
Goat Anti Mouse IgG (STAR70...)	FITC
Rabbit Anti Mouse IgG (STAR13...)	HRP
Human Anti Mouse IgG1 (HCA036...)	HRP
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos. , DyLight®488 , DyLight®549 , DyLight®649 , DyLight®680 , DyLight®800 , FITC , HRP

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL \(MCA928\)](#)

North & South America	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com	Worldwide	Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com	Europe	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com
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