abcam

ab316314

Anti-VCAM1 antibody [EPR27027-79]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR27027-79
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for mouse ICC.
Concentration	0.494 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Dot

Tested

Species	Recombinant fragment - Human
Dilution info	1/1000
Notes	-

Expected

Species	Human, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/500
Notes	-

Species	Mouse
Dilution info	1/5000
Notes	-

Not recommended

Species	Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50

Notes	-

Not recommended

Species	Mouse, Recombinant fragment - Human, Rat
Dilution info	-
Notes	-

WB

Not recommended

Species	Human, Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Recombinant fragment - Human, Rat
Dilution info	-
Notes	-

Target data

See full target information VCAM1

Function	Cell adhesion glycoprotein predominantly expressed on the surface of endothelial cells that plays an important role in immune surveillance and inflammation

(PubMed:31310649). Acts as a major regulator of leukocyte adhesion to the endothelium through interaction with different types of integrins (PubMed:10209034). During inflammatory responses, binds ligands on the surface of activated endothelial cells to initiate the activation of calcium channels and the plasma membrane-associated small GTPase RAC1 leading to leukocyte transendothelial migration (PubMed:22970700). Also serves as a quality-control checkpoint for entry into bone marrow by providing a 'don't-eat-me' stamping in the context of major histocompatibility complex (MHC) class-I presentation (PubMed:35210567).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	VCAM1 also known as vascular cell adhesion molecule 1 plays an important role in mediating adhesion and signal transduction. VCAM1 has an approximate molecular mass of 110 kDa. It is expressed on the surface of endothelial cells and can be upregulated by cytokines released during inflammation. The protein serves as a ligand for the integrin VLA-4 also known as α4β1 and contributes to the adhesion of leukocytes to endothelial cells.
Biological function summary	Adhesion molecules like VCAM1 participate in immune response by recruiting leukocytes to sites of inflammation. VCAM1 helps guide immune cells to directed locations where they perform defense activities. Although VCAM1 is not part of any known large protein complex its interaction with integrins facilitates the migration of immune cells across the endothelium and into tissue.
Pathways	VCAM1 contributes significantly to the leukocyte extravasation process in inflammatory pathways. It plays a role in both the cytokine-cytokine receptor interaction pathway and the NF-kB signaling pathway which are essential for immune response and cell signaling. Through these pathways it interacts with proteins like ICAM1 and various chemokines helping to coordinate the immune cell movement through vascular tissue barriers.
Associated diseases and disorders	Abnormal regulation of VCAM1 links to various cardiovascular diseases such as atherosclerosis and inflammatory diseases like rheumatoid arthritis. The protein levels may increase in these conditions promoting excessive immune cell recruitment and tissue damage. VCAM1 also interfaces with other proteins like ICAM1 in these pathological states which together contribute to the progression and severity of these diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

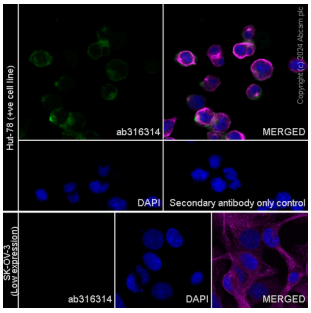
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

7 product images



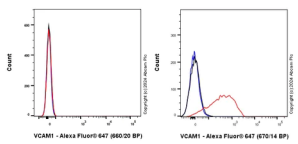
Immunocytochemistry/ Immunofluorescence - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Hut-78 (human Sezary syndrome cutaneous T lymphocyte) cells labelling VCAM1 with ab316314 at 1/50 (9.88 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green).

Confocal image showing membranous and cytoplasmic staining in Hut-78 cell line. Nuclear DNA was labeled with DAPI.
Low expression: SK-OV-3 (PMID: 32934709).
Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5 ug/ml) dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.

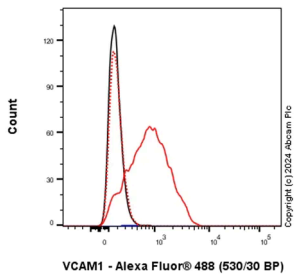


Flow Cytometry - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

Flow cytometric analysis of SK-OV-3 (human ovarian cancer epithelial cell, Left) / Hut-78 (human Sezary syndrome cutaneous T lymphocyte, Right) cells labelling VCAM1 with ab316314 at 1/500 dilution (0.1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/5000 dilution was used as the secondary antibody.

Low expression: SK-OV-3. Gated on viable cells.

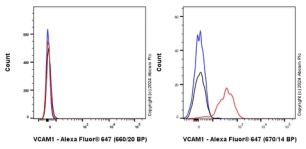


Flow Cytometry - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

Flow cytometric analysis of HUVEC (human umbilical vein endothelial cell) treated with 10ng/ml TNF-a for 16h (Red) / Untreated HUVEC (Dotted Red) cells labelling VCAM1 with ab316314 at 1/500 dilution (0.1 ug)/Red and Dotted Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Gated on viable cells.

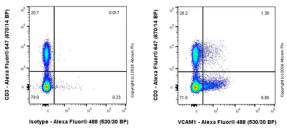


Flow Cytometry - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

Flow cytometric analysis of RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage, Left) / LADMAC (mouse bone marrow monocyte macrophage, Right) cells labelling VCAM1 with ab316314 at 1/5000 dilution (0.01 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/5000 dilution was used as the secondary antibody.

Low expression: RAW 264.7. Gated on viable cells.

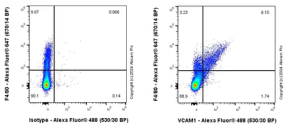


Flow Cytometry - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

Flow cytometric analysis of Mouse splenocytes cells labelling VCAM1 with ab316314 at 1/5000 dilution (0.01 ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control.

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Gated on viable cells. Cells are co-stained with CD3 conjugated to Alexa Fluor®647. The co-staining result showed the CD3 positive cluster has no cross activity with VCAM1.

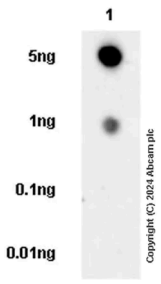


Flow Cytometry - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

Flow cytometric analysis of Mouse splenocytes cells labelling VCAM1 with ab316314 at 1/5000 dilution (0.01 ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control.

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Gated on viable cells. Cells are co-stained with F4/80 conjugated to Alexa Fluor®647.



Dot Blot - Anti-VCAM1 antibody [EPR27027-79] (ab316314)

VCAM1 Dot Blot staining of His-tagged human VCAM1 protein using rabbit Anti-VCAM1 antibody

Dot blot analysis of VCAM1 using ab316314 at 1:1000 (0.494 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution.

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Dot Blot - Anti-VCAM1 antibody [EPR27027-79] (ab316314) at 1/1000 dilution

All lanes:
His-tagged human VCAM1 protein

Secondary

All lanes:
Dot Blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Exposure time: 180s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.