abcam

ab319139

Anti-Podoplanin antibody [EPR27193-535] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR27193-535
Purification technique	Affinity purification Protein A
Concentration	1.012 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	-

Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

Target data

See full target information Pdpn

Function	Mediates effects on cell migration and adhesion through its different partners. During development plays a role in blood and lymphatic vessels separation by binding CLEC1B, triggering CLEC1B activation in platelets and leading to platelet activation and/or aggregation (PubMed:14522983, PubMed:15231832, PubMed:17616532, PubMed:20110424). Interaction with CD9, on the contrary, attenuates platelet aggregation and pulmonary metastasis induced by PDPN. Mediates effects on cell migration and adhesion through its different partners. Through MSN or EZR interaction promotes epithelial-mesenchymal transition (EMT) leading to ERZ phosphorylation and triggering RHOA activation leading to cell migration increase and invasiveness. Interaction with CD44 promotes directional cell migration in epithelial and tumor cells (By similarity). In lymph nodes (LNs), controls fibroblastic reticular cells (FRCs) adhesion to the extracellular matrix (ECM) and contraction of the actomyosin by maintaining ERM proteins (EZR; MSN and RDX) and MYL9 activation through association with unknown transmembrane proteins. Engagement of CLEC1B by PDPN promotes FRCs relaxation by blocking lateral membrane interactions leading to reduction of ERM proteins (EZR; MSN and RDX) and MYL9 activation (PubMed:25347465). Through binding with LGALS8 may participate in connection of the lymphatic endothelium to the surrounding extracellular matrix (By similarity). In keratinocytes, induces changes in cell morphology showing an elongated shape, numerous membrane protrusions, major reorganization of the actin cytoskeleton, increased motility and decreased cell adhesion (PubMed:10574709). Controls invadopodia stability and maturation leading to efficient degradation of the extracellular matrix (ECM) in tumor cells through modulation of RHOC activity in order to activate ROCK1/ROCK2 and LIMK1/LIMK2 and inactivation of CFL1 (By similarity). Required for normal lung cell proliferation and alveolus formation at birth (PubMed:12654292). Does not function as a water channel or as a regulator of aquaporin-type water channels (By similarity). Does not have any effect on folic acid or amino acid transport (PubMed:12032185).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab319139 is the carrier-free version of ab319138.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Podoplanin also known as gp36 and PDPN is a small transmembrane protein weighing approximately 36 kDa. It mainly expresses in lymphatic endothelial cells podocytes and various other tissues like the lung and kidney. It functions as a marker in mesothelial cells and is noticeable in histochemical studies such as mesothelioma using podoplanin staining in immunohistochemistry (IHC). Podoplanin emerges as an important tool in identifying lymphatic vessels and has significant roles in the development of certain tissues.
Biological function summary	The protein participates in maintaining the integrity of cell structures and lymphangiogenesis. This protein does not form part of a larger complex but actively interacts with different molecules. In lymphoid tissues podoplanin contributes to the proper formation of lymphatic channels and assists in platelet aggregation. These actions are pivotal in wound healing and protecting the epithelial cell layers in multiple organs.
Pathways	Podoplanin impacts the platelet activation pathway and the Lymphatic Vessel Development pathway. Its interaction with CLEC-2 (C-type lectin-like receptor 2) triggers downstream signaling leading to changes in platelet morphology and actin cytoskeleton reorganization. Podoplanin's activation of these pathways links it to key processes that include cell migration and tissue homeostasis TGF-beta interaction also represents a significant relationship within these pathways.
Associated diseases and disorders	Podoplanin has correlations with conditions like cancer specifically mesothelioma and squamous cell carcinoma. Dysregulation of podoplanin and its pathways may contribute to tumor progression and metastasis. In mesothelioma podoplanin interacts with other proteins like E-cadherin influencing cancer cell migration and

adhesion. Its role in disease states highlights the importance of podoplanin IHC as a diagnostic tool aiding in the better understanding and identification of disease pathology.

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

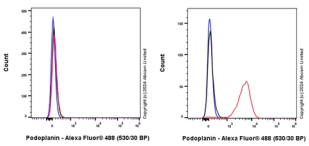
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images



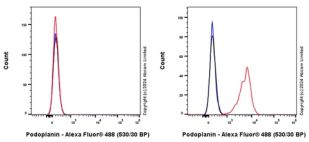
Flow Cytometry - Anti-Podoplanin antibody [EPR27193-535] - BSA and Azide free (ab319139)

This data was developed using ab319138, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of NIH/3T3 (mouse embryonic fibroblast) (Right) / RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) (Left) cells labelling Podoplanin with ab319138 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

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

Gated on viable cells.
Low expression: RAW 264.7



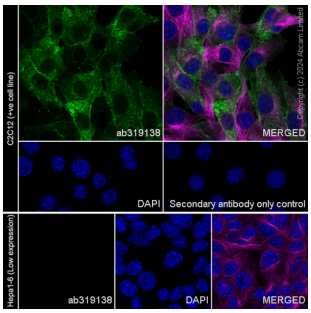
Flow Cytometry - Anti-Podoplanin antibody [EPR27193-535] - BSA and Azide free (ab319139)

This data was developed using ab319138, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of C2C12 (mouse myoblast) (Right) / Hepa1-6 (mouse hepatoma epithelial cell) (Left) cells labelling Podoplanin with ab319138 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

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

Gated on viable cells.
Low expression: Hepa1-6



Immunocytochemistry/ Immunofluorescence - Anti-Podoplanin antibody [EPR27193-535] - BSA and Azide free (ab319139)

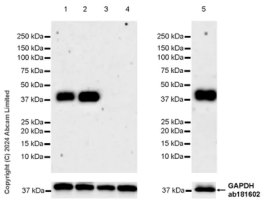
This data was developed using ab319138, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized C2C12 (mouse myoblast) cells labelling Podoplanin with ab319138 at 1/50 (10.12 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green).

Confocal image showing cytoplasmic with membranous staining in C2C12 cell line (shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue).
Low expression: Hepa1-6
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 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 dilution.



Western blot - Anti-Podoplanin antibody [EPR27193-535] - BSA and Azide free (ab319139)

This data was developed using ab319138, the same antibody clone in a different buffer formulation.

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

Low expression: Hepa1-6, RAW 264.7

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Podoplanin antibody [EPR27193-535] (ab319138) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 2:
C2C12 (mouse myoblast) whole cell lysate at 20 µg

Lane 3:
Hepa1-6 (mouse hepatoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 5:
Mouse lung tissue lysate at 20 µg

Secondary

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

Observed band size: 38 kDa, 36 kDa

Exposure time: 180s

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