abcam

ab10288

Anti-Podoplanin antibody [18H5] - BSA and Azide free

Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288) is a mouse monoclonal antibody provided in a PBS only buffer for easy conjugation detecting Podoplanin in **Western Blot, Flow Cytometry, ICC/IF**. Suitable for **Human**.

- BSA, sodium azide, and glycerol-free for easy conjugation
- Over 40 publications
- Trusted since 2004

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Carrier free	Yes
Clone number	18H5
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µL for 10^6 Cells
Notes	(methanol fixed cells) ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1-2 µg/mL
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:17222411, PubMed:17616532, PubMed:18215137). Interaction with CD9, on the contrary, attenuates platelet aggregation induced by PDPN (PubMed:18541721). 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 (PubMed:17046996, PubMed:21376833). Interaction with CD44 promotes directional cell migration in epithelial and tumor cells (PubMed:20962267). 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 (By similarity). Through

binding with LGALS8 may participate in connection of the lymphatic endothelium to the surrounding extracellular matrix (PubMed:19268462). 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:15515019). 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 (PubMed:25486435). Required for normal lung cell proliferation and alveolus formation at birth (By similarity). Does not function as a water channel or as a regulator of aquaporin-type water channels (PubMed:9651190). Does not have any effect on folic acid or amino acid transport (By similarity).

Storage

Shipped at conditions	Blue Ice
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

What is this antibody validated in?
Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of Podoplanin?
Anti-Podoplanin [18H5] - BSA and Azide free (ab10288) specifically detects a band for Podoplanin (UniProt: Q86YL7) at a molecular weight of 24kDa.

Trusted by the scientific community
Anti-Podoplanin [18H5] - BSA and Azide free (ab10288) was first used in a scientific publication in 2004 and has been cited over 40 times in peer-reviewed journals.

Reviewed by scientists
Anti-Podoplanin [18H5] - BSA and Azide free (ab10288) has over 5 independent reviews from customers.

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

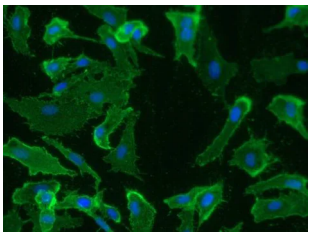
We do not recommend this combination. It is not covered by our product promise.

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.

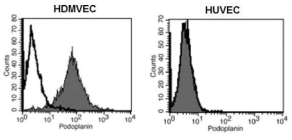
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288)

Podoplanin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Podoplanin antibody

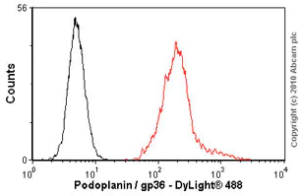
Immunocytochemistry/Immunofluorescence analysis of human dermal lymphatic endothelial cells (HDLEC) labelling Podoplanin with ab10288. An Alexa Fluor® 488-conjugated goat anti-mouse was used as the secondary antibody. Nuclei counterstained with DAPI.



Flow Cytometry - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288)

Podoplanin Flow Cytometry staining using mouse Anti-Podoplanin antibody

Flow cytometric analysis of primary human dermal microvascular (HDMVEC) and umbilical vein (HUVEC) endothelial cells labeling Podoplanin with ab10288 at 5 µg/mL. The lymphatic endothelial cell marker Podoplanin is not expressed in the blood endothelial cells.



Flow Cytometry - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288)

Podoplanin Flow Cytometry staining using mouse Anti-Podoplanin antibody

Overlay histogram showing HCT116 cells stained with ab10288 (red line). The cells were fixed with methanol (5 min) and incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab10288, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a slightly decreased signal in HCT116 cells fixed with 4% paraformaldehyde (10 min) used under the same conditions.

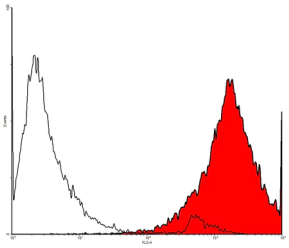
Please note that Abcam does not have data for use of this antibody on non-fixed cells. We welcome any customer feedback.



Immunocytochemistry/ Immunofluorescence - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288)

Podoplanin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Podoplanin antibody

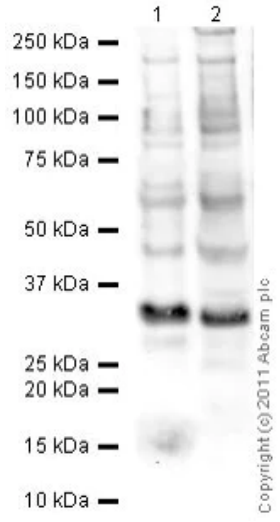
ab10288 at a 1/500 dilution staining human dermal lymphatic endothelial by Immunocytochemistry. The cells were grown in coverslips and fixed in formalin prior to permeabilization with tritonX-100. The cells were incubated with the primary antibody at 1/500 for 1 hour and then bound antibody was detected using a biotinylated goat anti-mouse antibody. Texas red-streptavidin was used for development.
This image is courtesy of an Abreview submitted by **Maria Navarro.**



Flow Cytometry - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288)

Podoplanin Flow Cytometry staining using mouse Anti-Podoplanin antibody

Flow cytometric analysis of human primary lymphatic endothelial cells (HDLEC) labeling Podoplanin with ab10288 at 5 µg/mL. Anti-mouse IgG-PE was used as a secondary antibody.



Western blot - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288)

Podoplanin Western blot staining using mouse Anti-Podoplanin antibody

Podoplanin protein is extensively glycosylated. This might explain the observation of a band at a higher molecular weight than predicted.
All lanes:
Western blot - Anti-Podoplanin antibody [18H5] - BSA and Azide free (ab10288) at 5 µg/mL

Lane 1:
Human placenta tissue lysate - total protein (ab29745) at 20 µg

Lane 2:
Human skeletal muscle tissue lysate - total protein (ab29330) at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 16 kDa

Observed band size: 35 kDa

Exposure time: 20min

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