abcam

# ab314406

# PE Anti-Podoplanin antibody [EPR22182]

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Conjugation** | PE |
| **Excitation/Emission** | Ex: 480;565nm, Em: 578nm |
| **Storage buffer** | pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 1% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR22182 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.5 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/2500 |

| | |
|---|---|
| **Notes** | - |

## Flow Cyt (Intra)

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## IHC-P

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **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

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| **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** | +4°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle, Store in the dark |

## 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** | 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.

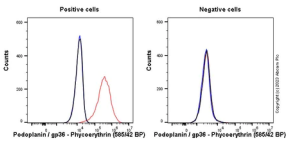
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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Terms & Conditions.

## 1 product image




### Flow Cytometry - PE Anti-Podoplanin antibody [EPR22182] (ab314406)

Podoplanin Flow Cytometry staining using rabbit Anti-Podoplanin antibody

Flow cytometry overlay histogram showing left U87-MG positive cells and right negative HUVEC stained with ab314406 (red line). The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab314406) (1x $10^6$ in 100µl at 0.2 µg/ml (1/2500)) for 30min on ice.

Isotype control antibody (black line) was Rabbit IgG (monoclonal) Phycoerythrin Isotype Control (ab209478) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Yellow/Green laser (561nm) and 585/42 bandpass filter.

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