10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PDPN / Podoplanin Antibody (aa1-206, clone 5E2)

Mouse Monoclonal Antibody
Catalog # ALS12571

Specification

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - Product Information

Application	**WB, IHC**
Primary Accession	Q86YL7
Reactivity	**Human, Mouse**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**17kDa KDa**

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - Additional Information

Gene ID 10630

Other Names
Podoplanin, Aggrus, Glycoprotein 36, Gp36, PA2.26 antigen, T1-alpha, T1A, PDPN {ECO:0000312|EMBL:AAH14668.2}

Reconstitution & Storage
Long term: -20°C; Short term: +4°C; Avoid freeze-thaw cycles.

Precautions
PDPN / Podoplanin Antibody (aa1-206, clone 5E2) is for research use only and not for use in diagnostic or therapeutic procedures.

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - Protein Information

Name PDPN {ECO:0000312|EMBL:AAH14668.2}

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).

Cellular Location
[Podoplanin]: Membrane; Single-pass type I membrane protein {ECO:0000250|UniProtKB:Q62011}. Cell projection, lamellipodium membrane; Single-pass type I membrane protein {ECO:0000250|UniProtKB:Q62011}. Cell projection, filopodium membrane; Single- pass type I membrane protein {ECO:0000250|UniProtKB:Q62011}. Cell projection, microvillus membrane; Single- pass type I membrane protein {ECO:0000250|UniProtKB:Q62011}. Cell projection, ruffle membrane; Single-pass type I membrane protein {ECO:0000250|UniProtKB:Q62011}. Membrane raft. Apical cell membrane. Basolateral cell membrane. Cell projection, invadopodium. Note=Localized to actin-rich microvilli and plasma membrane projections such as filopodia, lamellipodia and ruffles (By similarity). Association to the lipid rafts is required for PDPN-induced epithelial to mesenchymal transition (EMT) (PubMed:21376833). Colocalizes with CD9 in tetraspanin microdomains (PubMed:18541721). Localized at invadopodium adhesion rings in tumor cell. Association to the lipid rafts is essential for PDPN recruitment to invadopodia and ECM degradation (PubMed:25486435) {ECO:0000250|UniProtKB:Q62011, ECO:0000269|PubMed:18541721, ECO:0000269|PubMed:21376833, ECO:0000269|PubMed:25486435}

Tissue Location
Highly expressed in placenta, lung, skeletal muscle and brain. Weakly expressed in brain, kidney and liver. In placenta, expressed on the apical plasma membrane of endothelium. In lung, expressed in alveolar epithelium. Up-regulated in colorectal tumors and expressed in 25% of early oral squamous cell carcinomas

Volume
50 µl

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - Protocols

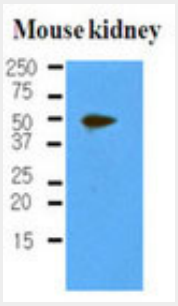
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

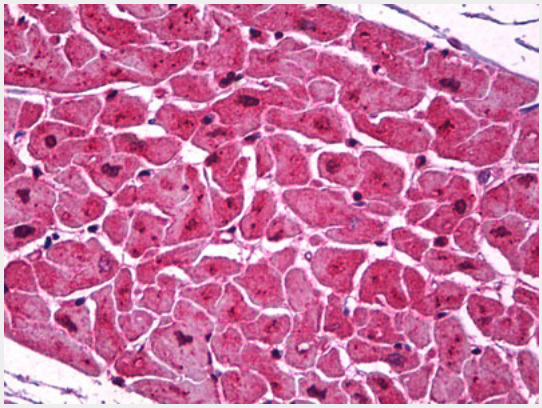
10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - Images



The extracts of mouse kidney (50 ug) were resolved by SDS-PAGE, transferred to NC membrane and...



Anti-Podoplanin antibody IHC of human heart.

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - Background

May be involved in cell migration and/or actin cytoskeleton organization. When expressed in keratinocytes, induces changes in cell morphology with transfected cells showing an elongated shape, numerous membrane protrusions, major reorganization of the actin cytoskeleton, increased motility and decreased cell adhesion. Required for normal lung cell proliferation and alveolus formation at birth. Induces platelet aggregation. Does not have any effect on folic acid or amino acid transport. Does not function as a water channel or as a regulator of aquaporin-type water channels.

PDPN / Podoplanin Antibody (aa1-206, clone 5E2) - References

Ma T.,et al.Am. J. Respir. Cell Mol. Biol. 19:143-149(1998).
Zimmer G.,et al.Biochem. J. 341:277-284(1999).
Kato Y.,et al.Submitted (DEC-2003) to the EMBL/GenBank/DDBJ databases.
Gregory S.G.,et al.Nature 441:315-321(2006).
Martin-Villar E.,et al.Int. J. Cancer 113:899-910(2005).