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D2-40

Mouse Monoclonal antibody(Mab)
Catalog # AD80252

Product Information

Application	IHC-P
Primary Accession	Q86YL7
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	D2-40
Calculated MW	16698

Additional Information

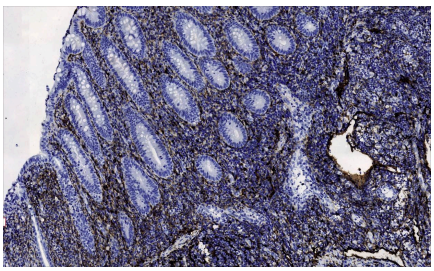
Gene ID	10630
Gene Name	PDPN {ECO:0000312|EMBL:AAH14668.2}
Other Names	Podoplanin {ECO:0000303|Ref.9}, Aggrus {ECO:0000303|Ref.3}, Glycoprotein 36, Gp36, PA2.26 antigen, T1-alpha, 29kDa cytosolic podoplanin intracellular domain, PICD, PDPN {ECO:0000312|EMBL:AAH14668.2}
Dilution	IHC-P~~Ready-to-use
Storage	Maintain refrigerated at 2-8°C.
Precautions	D2-40 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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

Images



Immunohistochemical analysis of formalin-fixed and paraffin-embedded human appendix tissue was performed with D2-40 primary antibody, followed by peroxidase-conjugated secondary antibody and DAB staining.

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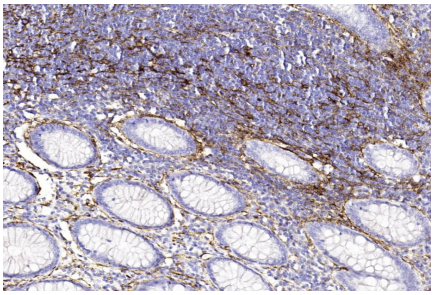
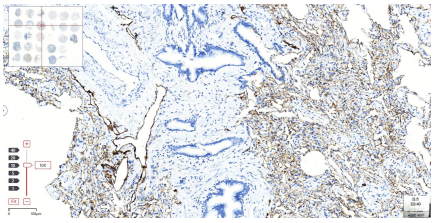
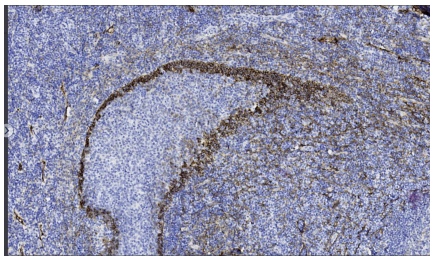
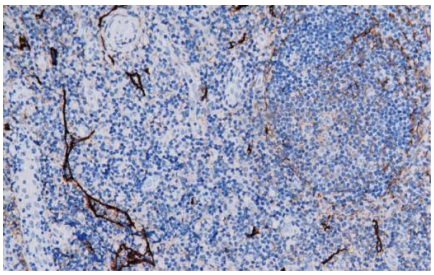




Immunohistochemical analysis of formalin-fixed and paraffin-embedded human lung tissue was performed with D2-40 primary antibody, followed by peroxidase-conjugated secondary antibody and DAB staining.



Immunohistochemical analysis of formalin-fixed and paraffin-embedded human tonsil tissue was performed with D2-40 primary antibody, followed by peroxidase-conjugated secondary antibody and DAB staining.



Immunohistochemical analysis of formalin-fixed and paraffin-embedded human tonsil tissue was performed with D2-40 primary antibody, followed by peroxidase-conjugated secondary antibody and DAB staining.

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