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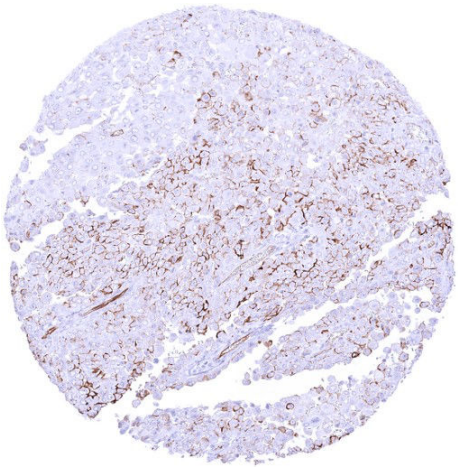
Revision 4.0

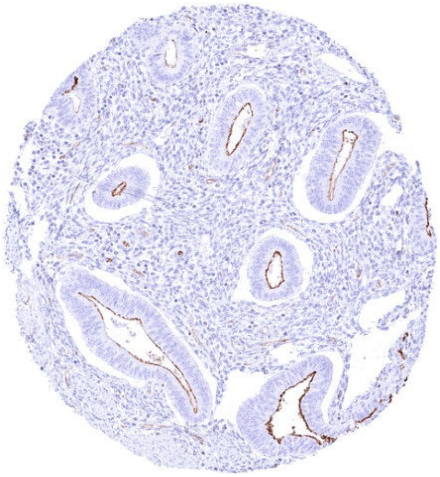
Anti- Podocalyxin Antibody
MSVA-645M / Mouse monoclonal

Human SwissProt	O00592
Human Gene Symbol	PODXL
Synonyms	GCTM-2 antigen, Gp200, Podocalyxin-like protein 1, PDXL, Gp200, PCLP1, Pcx
Specificity	PODXL
Immunogen	Recombinant human PODXL fragment
Isotype	Mouse / IgG1, kappa
Species Reactivity	Human

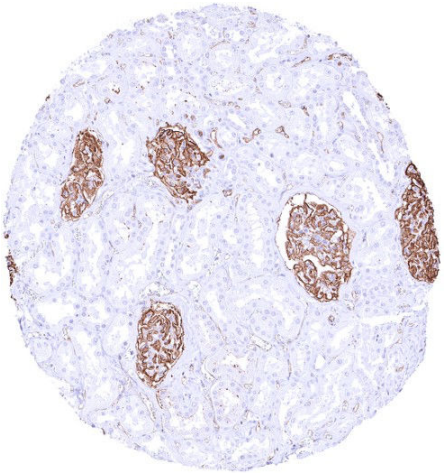
Localization	Membranous
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	Purified antibody from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with <1% BSA & <0.1% azide. Antibody concentrate is optimized for dilution within dilution range using commercially available antibody diluent for IHC.
Positive Control	Kidney: A strong PODXL must be seen in glomerular podocytes while at least a weak to moderate PODXL staining must be seen in endothelial cells of small intertubular vessels.
Negative Control	Kidney: Tubuli and collecting ducts must be PODXL negative.



Malignant mesothelioma with moderate to strong, membranous PODXL staining ofabout 40% of the tumor cells.



Proliferating endometrium displaying a strong PODXL staining of apical membranes of endometrium glands.



Renal cortex displaying an intense PODXL staining of glomerular endothelial cells while endothelial cells of other small vessels stain much less prominently.

Biology

Podocalyxin (PODXL) is a CD34-related transmembrane sialomucin protein which is coded by the PODXL gene located on chromosome 7q32.2. PODXL is primarily expressed in podocytes of the kidneys, endothelial cells, mesothelial cells, and few selected epithelial cell types. PODXL knock-out mice die within the first 24 hours of life from renal failure because podocyte foot processes do not form, and intercellular junctions between adjacent podocyte foot processes are abnormal. Germline mutations in PODXL are associated with congenital nephrotic syndrome. Overall PODXL has an important role in tissue development and for optimal glomerular function. PODXL also plays an important role in cancer as it can be mutated and aberrantly expressed in several cancer types. Many cancers with high PODXL expression are derived from PODXL negative normal epithelial cells. PODXL neo-expression was found to be associated with aggressive cancer, drug resistance, and immune evasion. In cancer cells, PODXL can interact with several proteins and downstream signaling pathways that are critical for promoting cancer metastasis and subsequent invasion. Because of its membranous location, PODXL is being evaluated for a role as a therapeutic target protein.

Potential Research Applications

-How can PODXL-targeted therapies be effectively developed and optimized for different tumor types?
-What specific molecular pathways are affected by PODXL in cancer?
-What is the prevalence and clinical significance of PODXL expression across tumor types?
-Is there any diagnostic/prognostic/predictive utility of PODXL IHC?

Protocol Suggestions

Dilution: 1:100 – 1:200; pH 7,8 is optimal. Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

This antibody is available for **research use only** and is not approved for use in diagnostics.

Warranty

There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.

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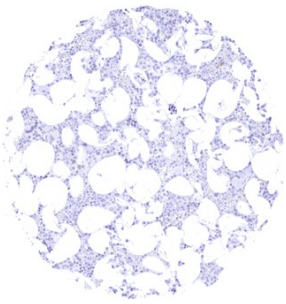
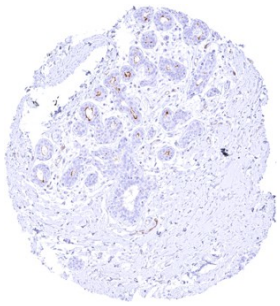
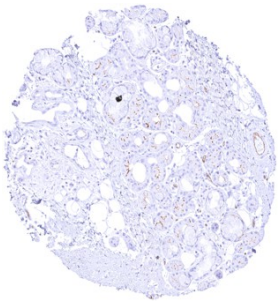


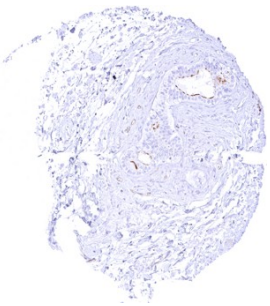
Bone marrow – Absence of unequivocal PODXL staining of hematpoietic cells.



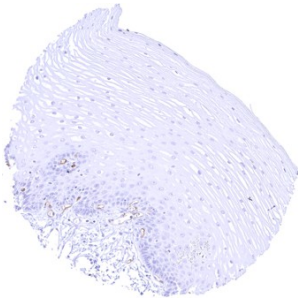
Breast – Moderate PODXL staining of apical membranes of a subset of luminal epithelial cells.



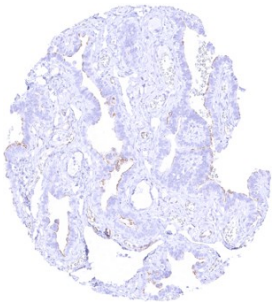
Bronchus, glands – Moderate PODXL staining of luminal-apical membranes of a subset of bronchial glandular cells.



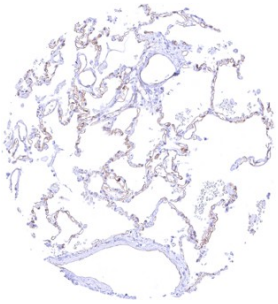
Epididymis (Cauda) – Moderate PODXL staining of luminal-apical membranes of a subset columnar cells.



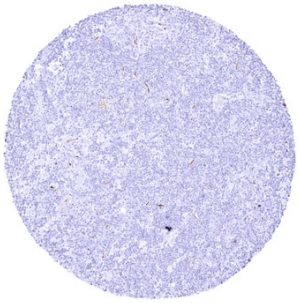
Esophagus, squamous epithelium – PODXL of endothelial cells of small vessels.



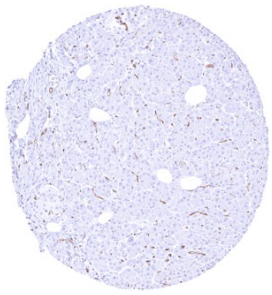
Fallopian tube, mucosa – Moderate PODXL staining of apical membranes of a subset of epithelial cells.



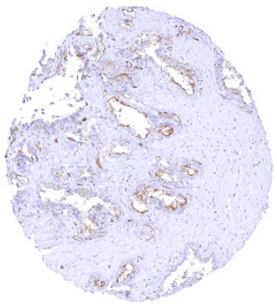
Lung – Distinct PODXL staining of alveolar capillaries.



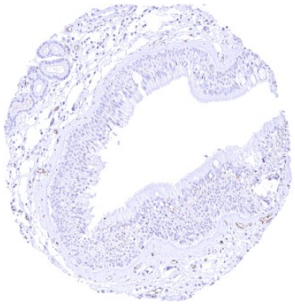
Lymph node – PODXL of endothelial cells of small vessels.



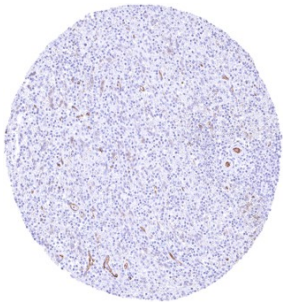
Pancreas – PODXL of endothelial cells of small vessels.



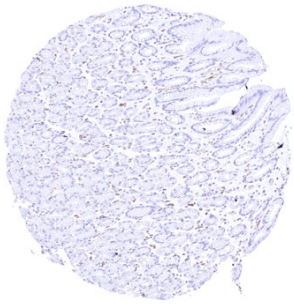
Seminal vesicle – Moderate to strong PODXL staining of luminal-apical membranes of a subset of epithelial cells.



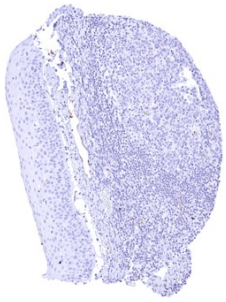
Sinus paranasales – Respiratory epithelium is PODXL negative.



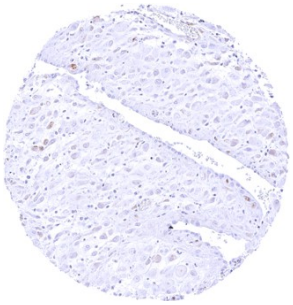
Spleen – PODXL of endothelial cells of small vessels.



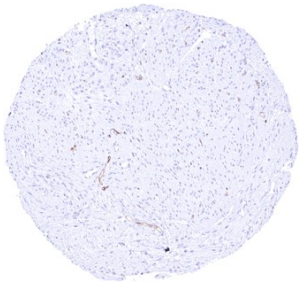
Stomach, antrum – PODXL of endothelial cells of small vessels.



Tonsil, surface epithelium



Uterus, endometrium (pregnancy) – Weak to moderate, membranous PODXL staining of few decidua cells.



Uterus, myometrium – PODXL of endothelial cells of small vessels.