

Mouse Anti-human Podoplanin (Cat# 101-M40 / -M41, 100µg)

Podoplanin, also known as Glycoprotein 38, T1alpha or Aggrus, is a 38 kDa type I membrane mucoprotein with several O-glycosylation sites. In normal human tissue, Podoplanin is expressed in kidney podocytes, in skeletal muscle, placenta, lung and heart, in myofibroblasts of the breast and salivary glands, in osteoblasts and mesothelial cells. It is also expressed in rat alveolar type I cells.

As podoplanin is expressed on lymphatic but not on blood vessel endothelium, it is widely used as a specific marker for lymphatic endothelial cells in lymphangiogenesis research in many species. Overexpression of Podoplanin significantly increases endothelial cell adhesion, migration, and tube formation. Inhibition of Podoplanin expression decreases cell adhesion in human dermal lymphatic endothelial cells. Podoplanin is presumably involved in cancer cell migration, invasion, metastasis, and malignant progression. It was also reported to be associated with tumor-induced platelet aggregation.

The expression of Podoplanin is upregulated in a number of different human cancers, including squamous cell carcinoma of the oral cavity, the larynx, the lung, the cervix, the oesophagus, and the skin, in dysgerminomas of the ovary and granulosa cell tumors, in mesothelioma, and in many tumors of the central nervous system.

Breiteneder-Geleff et al, Am J Pathol 154, 1999; Schacht et al., EMBO J., 2003; Schacht et al, Am J Pathol., 2005; Kaneko et al, Gene. 2006; Kriehuber et al., J Exp Med. 194, 2001; Kerjaschki et al., Nat. Medicine Vol.12, 2006; Wicki et al., Br. J. Cancer 96 (1), 2007; Kato Y, Fujita N, Kunita A, et al., J. Biol. Chem.278, 2004; Kato et al, Cancer Sci., 2008; Kaneko M, Kato Y, Kunita A, et al., J. Biol. Chem. 279, 2004; Mishima K, Kato Y, Kaneko MK, et al., Acta Neuropathol.111, 2007; Kimura and Kimura, Pathol Int., 2005

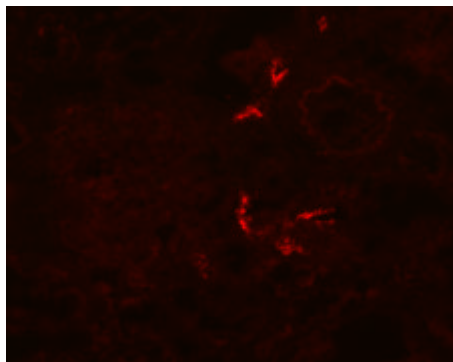


Fig. 1: Lymphatic vessels in human kidney are stained with anti-human Podoplanin.

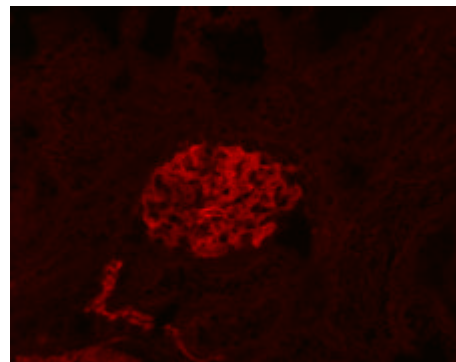


Fig. 2: Rat lymphatic vessels and glomerular podocytes are stained with anti-rat Podoplanin.

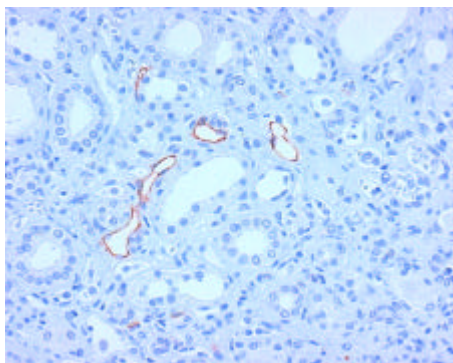


Fig. 3: Lymphatic vessels of the human kidney are stained with anti-human Podoplanin.

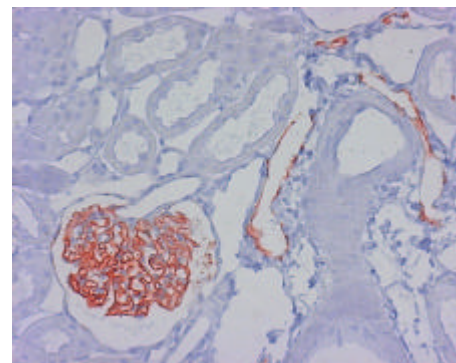


Fig. 4: Rat lymphatic vessels and podocytes stained with anti-rat Podoplanin.

STAINING PROTOCOL for paraffin-embedded tissue-sections fixed in formalin

Anti-human Podoplanin (#4D5aE5E6)

Ultra Vision LP Large Volume Detection System HRP Polymer (Ready-To-Use)
Thermo scientific Nr. TL-125-HL

1. Deparaffinize through xylenes, ethanol, and hydrate to water.
2. Heat-Pre-treatment: in 0,1mol citrate buffer pH 6 in an Autoclave at 1 bar for 10 min
3. Cool down at room temperature for 20 min
4. Block in 3% hydrogen peroxide in PBS 10 min
5. Wash in buffer
6. Apply Ultra V Block and incubate 5 min at room temperature
7. Wash
8. Apply Primary Antibody: **4D5aE5E6** at a dilution 1:100 in 1% BSA/PBS for 1 hour
9. Wash 4 times
10. Apply Primary Antibody Enhancer and incubate for 10 min at room temperature
11. Wash 4 times
12. Apply HRP Polymer and incubate for 15 min at room temperature in the dark (HRP Polymer is light sensitive)
13. Wash 4 times
14. Incubate with ACE-Chromogen and stain for 5- 10 min
15. Wash 4 times in AD
16. Counter stain with Mayer's Hämalaun for 1 min
17. Cover slip using an aqueous mounting media

The protocol was established at the Clinical Institute of Pathology, Medical University Vienna in the group of Prof. Dr. Dentscho Kerjaschki.

STAINING PROTOCOL for paraffin-embedded tissue-sections fixed in formalin

Anti-rat Podoplanin (#LF3 (B7)D5B3)

Ultra Vision LP Large Volume Detection System HRP Polymer (Ready-To-Use)
Thermo Scientific Nr. TL-125-HL

1. Deparaffinize through xylenes, ethanol, and hydrate to water.
2. Heat-Pre-treatment: in 0,1mol citrate buffer pH 6 in an Autoclave at 1 bar for 10 min
3. Cool down at room temperature for 20 min
4. Block in 3% hydrogen Peroxide in PBS 10 min
5. Wash in buffer
6. Apply Ultra V Block and incubate 5 min at room temperature
7. Wash
8. Apply Primary Antibody: **LF3 (B7)D5B3** at a dilution 1:1000 in 1%BSA/PBS for 1 hour
9. Wash 4 times
10. Apply Primary Antibody Enhancer and incubate for 10 min at room temperature
11. Wash 4 times
12. Apply HRP Polymer and incubate for 15 min at room temperature in the dark(HRP Polymer is light sensitive)
13. Wash 4 times
14. Incubate with ACE-Chromogen and stain for 5- 10 min
15. Wash 4 times in AD
16. Counter stain with Mayer's Hämalaun for 1 min
17. Cover slip using an aqueous mounting media

The protocol was established at the Clinical Institute of Pathology, Medical University Vienna in the group of Prof. Dr. Dentscho Kerjaschki.