

PRODUCT INFORMATION



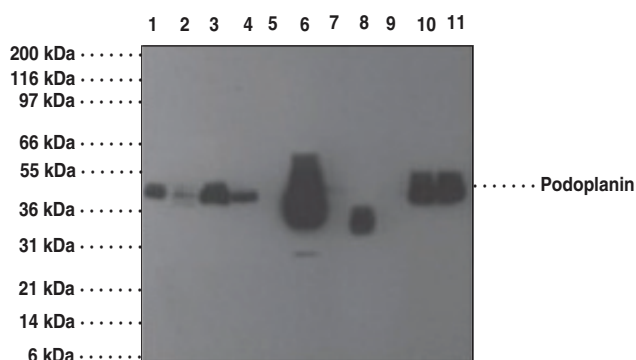
Podoplanin Monoclonal Antibody (Clone pmab-1)

Item No. 11005

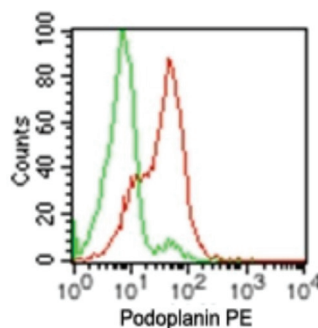
Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified IgG in 200 µl PBS with 0.05% BSA and 0.05% sodium azide.
Synonyms:	Aggrus, gp38, T1A
Immunogen:	Podoplanin protein
Cross Reactivity:	(+) Podoplanin
Species Reactivity:	(+) Mouse
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥6 months
Host:	Rat
Applications:	Flow cytometry (FC) and Western blot (WB); the recommended starting concentration for FC is 0.5 µg/10 ⁵ cells and 3-5 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: Mouse brain lysate
Lane 2: Mouse heart lysate
Lane 3: Mouse small intestine lysate
Lane 4: Mouse kidney lysate
Lane 5: Mouse liver lysate
Lane 6: Mouse lung lysate
Lane 7: Mouse muscle lysate
Lane 8: Mouse stomach lysate
Lane 9: Mouse spleen lysate
Lane 10: Mouse ovary lysate
Lane 11: Mouse testis lysate



Flow cytometric analysis using podoplanin antibody. Mouse LLC1 cells were probed using 0.5 µg of podoplanin antibody (red) and 0.5 µg of isotype control antibody (green).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Podoplanin is a transmembrane glycoprotein that has roles in development, immunology, and cancer.^{1,2} It is composed of a glycosylated extracellular domain, which is critical for podoplanin-induced platelet activation, a single transmembrane region that associates with CD9 and CD44, and a short cytoplasmic tail that interacts with the ezrin-radixin-moesin (ERM) family of proteins to promote rearrangement of the actin cytoskeleton, as well as the epithelial-to-mesenchymal transition (EMT) during embryonic development.² Podoplanin is expressed in various tissues during murine embryonic development but is predominantly restricted to stromal, lymphatic endothelial, and immune cells, lymphoid organs, and the heart and choroid plexus in the adult mouse.^{1,2} Its expression is upregulated by various pro-inflammatory cytokines, including IL-22, IL-6, IFN- γ , and TGF- β , and is increased in T cells, fibroblasts, and macrophages during inflammation. It localizes to the cell surface within lipid rafts where it interacts with numerous proteins to modulate cell adhesion and motility.¹ Podoplanin binds to C-type lectin receptor 2 (CLEC-2), which is expressed on platelets, to induce platelet aggregation and activation, an effect that is inhibited by the interaction of podoplanin with CD9. Mice implanted with MCF-7 cells overexpressing podoplanin exhibit reduced primary tumor growth but enhanced tumor lymphangiogenesis and lymph node metastasis.³ Tumor podoplanin expression is associated with reduced overall survival in patients with oral squamous cell carcinoma (OSCC).⁴ Cayman's Podoplanin Monoclonal Antibody (Clone pmab-1) can be used for flow cytometry (FC) and Western blot (WB) applications. The antibody recognizes podoplanin at ~42 kDa from mouse samples.

References

1. Astarita, J.L., Acton, S.E., and Turley, S.J. Podoplanin: Emerging functions in development, the immune system, and cancer. *Front. Immunol.* **3**, 283 (2012).
2. Quintanilla, M., Montero-Montero, L., Renart, J., *et al.* Podoplanin in inflammation and cancer. *Int. J. Mol. Sci.* **20(3)**, 707 (2019).
3. Cueni, L.N., Hegyi, I., Shin, J.W., *et al.* Tumor lymphangiogenesis and metastasis to lymph nodes induced by cancer cell expression of podoplanin. *Am. J. Pathol.* **177(2)**, 1004-1016 (2010).
4. Kreppel, M., Scheer, M., Drebber, U., *et al.* Impact of podoplanin expression in oral squamous cell carcinoma: Clinical and histopathologic correlations. *Virchows Arch.* **456(5)**, 473-482 (2010).

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