

Product Information

Anti-Podoplanin antibody, Rat monoclonal
clone NZ-1.2, purified from hybridoma cell culture

Catalog Number **P0085**

Product Description

Monoclonal Anti-Podoplanin (rat IgG2a isotype) is derived from the hybridoma NZ-1.2 produced by the fusion of mouse myeloma cells and splenocytes from CD rat immunized with platelet-aggregation-stimulating (PLAG) domain of podoplanin (Gene ID: 10630).¹ The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-Podoplanin recognizes human podoplanin.¹ The antibody may be used in various immunochemical techniques including immunoblotting (~36 kDa), immunoprecipitation, flow cytometry, and immunocytochemistry.¹

Podoplanin (Aggrus) is an integral membrane mucoprotein present on the surface of podocytes in kidney glomeruli and the parietal cells of the glomerular Bowman's capsule.¹⁻³ It is a single membrane-spanning protein composed of a heavily glycosylated extracellular domain and a short intracytoplasmic tail. The extracellular domain possesses a platelet aggregation-stimulating (PLAG) domain, in which site directed mutagenesis indicated Thr⁵² to be critical for protein activity.⁴

Podoplanin has been described to be present in normal, inflammatory and neoplastic lymphatic capillary endothelium.^{1,3,5,7,10} It is not expressed *in vivo* in blood capillary endothelial cells, in human hemangiomas, and in lymph node high endothelial venules. Large lymphatic vessels having smooth muscle cells may lack podoplanin. Podoplanin is expressed selectively by dermal microvascular lymphatic endothelial cells but not by blood vascular endothelial cells. Expression of podoplanin is regulated by the lymphatic-specific homeobox gene Prox-1.⁸⁻¹⁰

Podoplanin is detectable in human angiosarcomas, lymphangiomas, and in Kaposi's sarcomas, and has been implicated in the onset of tumor invasion, metastasis, or malignant progression.¹¹ It appears to play an important role in the maintenance of podocyte foot processes, and hence, glomerular permeability.^{1, 2}

Evidence from podoplanin knockout mice suggests its crucial involvement in lymphatic vessel formation.⁷⁻⁹ These findings suggest a role of podoplanin in tissue development and repair as well as in carcinogenesis.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing, or storage in “frost-free” freezers, is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 4-8 µg/mL is recommended using U87 total cell extract.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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DS,KAA,GG,PHC,MAM 12/19-1