Product Information

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Monoclonal Anti-Collagen Type IV
Clone COL-94
produced in mouse, ascites fluid

Catalog Number **C1926**

Product Description

Monoclonal Anti-Collagen Type IV (mouse IgG1 isotype) is derived from the COL-94 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with human collagen Type IV. The isotype is determined by a double diffusion immunoassay and Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Collagen Type IV recognizes an epitope located on the α1 and/or α2 chains of human collagen type IV as determined by immunohistochemical staining of basal laminae.[1] The antibody shows reactivity for primate collagen type IV (human or monkey). No cross reactivity has been found with sheep, goat, cat, rabbit, rat, or chicken. Using the immunoblot technique, the antibody specifically recognizes native, undenatured, human type IV collagen. The antibody shows no cross reactivity with collagen types I, II, III, V, VI, and VII, nor does it react with human vitronectin, fibronectin, or chondroitin sulfate A, B, and C. The product shows no reactivity with denatured or denatured-reduced collagen when it is used in immunoblots.

The extracellular matrix consists of basement membranes and interstitial stroma. Basement membranes are amorphous laminar structures in intimate contact with various cell types (epithelial, endothelial, smooth muscle, and fat cells). The composition of the extracellular framework of all vertebrates is dominated by a class of molecules known as collagens,[2] each with a unique feature suited to its function and location. Type IV collagen is a major constituent of basement membranes. This molecule is a continuous triple helix, about 400 nm in length, composed of at least two different α chain subunits termed α_1 (IV) and α_2 (IV) which may be composed of the same or different molecules. Upon proteolysis, fragments of 125 kDa, 95 kDa, and 60 kDa are released from a parent α_1 (IV) chain, whereas fragments of 115 kDa, 80 kDa, and 45 kDa apparently originate from a distinct α_2 (IV) chain.

Collagens are known to have multiple functions. They are involved in tissue differentiation, morphogenesis and repair; play a role in the maintenance of tissue architecture; and form the filtration barrier of blood vessels. Immunohistochemical studies of Type IV collagen has yielded important information concerning the role of basement membranes in developmental biology, wound healing, fibrotic conditions, neoplasia, cell growth and differentiation, hemostasis, thrombotic processes, and aging. The development of antibodies against collagens has provided a powerful method for examining the distribution of these connective tissue proteins in human tissues.[3]

Reagent

Supplied as ascites fluid with 15 mM sodium azide as a preservative

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material 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. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile
Monoclonal Anti-Collagen Type IV is a homogenous population of antibody molecules, which may be used for the localization of collagen type IV using various immunochemical assays such as ELISA, dot blot, and immunocytochemistry.

A minimum working dilution of 1:500 is determined by immunoperoxidase staining of formalin-fixed, paraffin-embedded and enzyme-treated human tissue. Specific basement membrane staining was obtained using immunoperoxidase labeling of formalin-fixed, paraffin-embedded human tissue, following enzymatic unmasking at 37 °C either with:
(a) 0.4% Pepsin, Catalog Number P7012, in 0.01 N HCl for 30-90 minutes, or
(b) 0.1% Proteinase, Catalog Number P5380, in PBS for 10-20 minutes.

Note: In order to obtain the best results in various techniques and preparations, it is recommended that each individual user determine their optimum working dilutions by titration.

References

1. Sanes, J. R., et al., *J. Cell Biol.*, **111**, 1685 (1990).
2. Sage, H., et al., *J. Biol. Chem.*, **254**, 9893 (1979).
3. Gay, S., and J.D. Fine, *Meth. Enzymol.*, **145**, 148 (1987).

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