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Product Information

Monoclonal Anti-Laminin-2 (α2-Chain), clone 4H8-2
produced in rat, purified immunoglobulin

Catalog Number **L0663**

Synonym: Anti-Merosin

Product Description

Monoclonal Anti-Laminin-2 (α2-Chain) (rat IgG1 isotype) is derived from the 4H8-2 hybridoma produced by the fusion of rat myeloma cells and splenocytes from a Lewis rat immunized with mouse heart laminin-2.[1] The antibody is purified from the culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-Laminin-2 (α2-Chain) reacts specifically with mouse[1] and human[2,3] laminin-2. The epitope recognized by the antibody resides in the N-terminal portion of the α2 chain of laminin.[3] The antibody may be used for ELISA,[1] immunoblotting[1] (α2-chain, ~400 kDa, low affinity for denatured[1]), immunoprecipitation,[1] immunocytochemistry[1] and immunohistochemistry[1-3] (frozen sections, unfixed,[2,3] acetone-fixed and methanol-fixed[1]).

Laminin, the most abundant structural and biologically active component in basement membrane, is a complex extracellular glycoprotein of 700-900 kDa that plays an important role in many aspects of the cell biology.[4, 5] It is composed of one α chain (approx. 400 kDa, previously called A chain) one β chain (215 kDa, B1) and one γ chain (205 kDa, B2), held together by disulfide bonds. The molecule has a cross-like form with globular units near the ends of each chain, the sites where it is bound to type IV collagen, heparan sulfate proteoglycan, as well as to the surface of epithelial cells. Laminins from various species have antigenic determinants in common. Laminins exist in at least 11 different isoforms, each with restricted tissue distribution. Laminin-1 which is found in epithelium, is composed of α1, β1, and γ1 chains. Laminin-2 (previously referred to as merosin), present in striated muscle and peripheral nerve, is a complex of α2β1γ1 chains. Laminin-4, present at the neuromuscular junction, is composed of α2β2γ1 chains.[4,6] The laminin α2 chain is processed in tissues into a 300 kDa N-terminal segment and a 80 kDa C-terminal segment.[7]

Laminins are found mainly in basement membranes, thin extracellular matrices that surround epithelial tissue, nerve, fat cells and smooth, striated and cardiac muscle. Laminins have been found to modulate cell proliferation, cell shaping and also cell movement. Variations in the expression of this family of protein have been observed in embryogenesis, organogenesis, post-traumatic healing and cancer. The laminin α2 gene is alternatively spliced in about half the patients with the classical form of congenital muscular dystrophies (CMD), resulting in truncated protein lacking N-terminal domains.[2,3] Thus, many patients with CMD have partial or total deficiency of the α2-chain of laminin-2. Partial expression of the 300 kDa fragment and/or of a 80 kDa fragment, or absence of both fragments, were described.[8] A monoclonal antibody specifically reacting with laminin-2 allows for identification of N-terminal deletions of the laminin α2 chain and is useful in the classification of various disease processes involving basement membranes. Also, it allows for the determination of the origin of human tumors and their classification, and distinguishes between non-invasive and invasive lesions.

Reagent

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

Antibody Concentration: ~2 mg/mL

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. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working antibody concentration of 4-8 µg/mL is determined by indirect immunofluorescent staining of acetone-fixed frozen sections of human tongue.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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