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ProductInformation

MONOCLONAL ANTI-COLLAGEN TYPE III, Clone FH-7A
Mouse Ascites Fluid

Product Number **C 7805**

Product Description

Monoclonal Anti-Collagen Type III (mouse IgG1 isotype) is derived from the FH-7A hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with human collagen type III. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Collagen Type III reacts specifically with native and denatured collagen type III. It does not recognize collagen types I, II, IV, V, VI, and X. The product may be used for ELISA, dot-blot, immunoblotting (approx. 70 kD in denatured-reduced preparations) and in immunohistochemistry (frozen sections). Reactivity has been observed with human and rat collagen type III.

The extracellular matrix[1] is the material found in the extracellular environment of all tissues and organs. It consists of basement membranes and interstitial stroma. The composition of the extracellular framework of all vertebrates is dominated by a class of molecules known as collagens,[1,2] each with unique features suited for its function and location. The collagens are proteins composed of three subunit polypeptides that can vary in length and interact to form a triple helix. The molecular basis of the triple helix is provided by a repeated unique amino acid sequence (Gly-x-y). The polypeptides generated are capable of assembly into fibrillar or other types of supramolecular assemblies, which are deposited in the extracellular matrix. More than eighteen distinct collagen types have been identified. Fibrillar collagens (Types I-III, V, and XI) serve a structural role in the extracellular matrix by providing organisms with supramolecular scaffolds for mechanical support, and by providing the proper environment for cellular migration, attachment and differentiation. They can interact with cells directly via specific cell surface receptors or indirectly via other extracellular matrix components. By such interactions, fibrillar collagens influence cell behavior and differentiation during embryonic development. Fibrillar collagens are synthesized by a variety of cells, mostly (but not only) of mesenchymal origin (fibroblasts, osteoblasts, odontoblasts and chondroblasts). Type III collagen, $[\alpha1(III)]_3$, is an approx. 300 kDa molecule, found predominantly in skin, blood vessels, liver, placenta, tongue, and thymus.[1,3] Collagen type III forms cofibrils with type I and/or V collagens in a number of tissues of mesenchymal origin, such as skin, tendon, ligaments, and bone.[1] This collagen type is involved, directly or indirectly in several genetic diseases, including Ehlers-Danlos type IV disease.[4] The development of antibodies against collagens has provided a powerful method for examining the distribution of these connective tissue proteins and for investigation of epithelial-mesenchymal interactions, tumorigenesis and basement membrane biology in ontogeny and epithelial differentiation.[3] Antibodies that react specifically with collagen type III are useful for the study of specific differential tissue expression and the immunolocalization of collagen type III in normal and neoplastic tissue.

Reagents

The product is supplied as ascites fluid with 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous 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 is not recommended. 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 minimum working dilution of 1:4,000 is determined by indirect immunoperoxidase staining of frozen sections of human skin.

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

References

1. Olsen, B.J., and Ninomiya, Y., in: "*Guidebook to the Extracellular Matrix and Adhesion Proteins*", Kreis, T., and Vale, R. (eds.), Oxford University Press, Oxford, pp. 32-44 (1993).
2. Sanes, J.R., et al., J. Cell Biol., **111**, 1685 (1990).
3. Mayne, R., Clin. Biochem., **21**, 111 (1988).
4. Superti-Furga, A., et al., Hum. Genet., **82**, 104 (1989).

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