MONOCLONAL ANTI-COLLAGEN TYPE I
CLONE COL-1
Mouse Ascites Fluid

Product Number C 2456

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

Monoclonal Anti-Collagen Type I recognizes the native (helical) form of collagen type I using ELISA and dot-blot. The product does not react with the thermally-denatured molecule. In immunohistochemical testing of acetone-fixed or unfixed frozen sections, strong staining of connective tissue fibers is seen. In ELISA and dot-blot techniques, the antibody shows no cross-reactivity with collagen types II, III, IV, V, VI, VII, IX, X and XI. The product reacts with human, bovine, rabbit, deer, pig and rat collagen type I. The epitope recognized by the antibody is sensitive to routine formalin fixation and paraffin embedding.

The extracellular matrix 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, each with unique features suited for its function and location. The collagens are proteins composed of three subunit polypeptides that can vary in length, which 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) and the polypeptides generated are capable of assembly into fibrillar or other types of supramolecular assemblies which are deposited in the extracellular matrix. The number of distinct collagen types presently recognized is more than fourteen. Type I collagen [α1(I)]_2α2 is the most abundant collagen and is widely distributed throughout the body. This fibrillar collagen is found in dermis, bone, tendon, ligament, dentin, fasciae, sclera, cornea, organ capsules and fibrous cartilage. It appears in tissues as the classically designated collagen fibers which are formed from densely-packed thin striated fibrils with marked variation in diameter. Collagen I is synthesized mainly by fibroblasts, osteoblasts, odontoblasts and chondroblasts. It serves a structural role in the extracellular matrix by providing mechanical support and resistance to tension. Some of the more important genetic diseases, directly or indirectly involving this collagen type include the majority cases of osteogenesis imperfecta and certain types of Ehlers-Danlos syndrome. 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.

Reagents
The product is provided as ascites fluid with 15mM 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
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.

Product Profile
Monoclonal Anti-Collagen Type I may be used for the localization of type I collagen using various immunochemical assays including ELISA, dot blot and immunohistochemistry.

A minimum working dilution of 1:2,000 is determined by indirect immunofluorescent staining of human or other mammalian frozen sections.
In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

References