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Product Information

Monoclonal Anti-Elastin
Clone BA-4
Mouse Ascites Fluid

Catalog Number **E4013**

Product Description

Monoclonal Anti-Elastin (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Bovine α-elastin was used as the immunogen. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Catalog Number ISO2).

This monoclonal antibody binds to insoluble elastin, α-elastin, tropoelastin (the soluble non-crosslinked precursor of elastin), and peptide fragments generated by proteolytic digestion of insoluble elastin. Tropoelastin is prepared by alcohol fractionation of acetic acid extracts of bovine ligamentum nuchae tissue minces. After SDS-PAGE and transfer to nitrocellulose, 3 immunoreactive bands were observed at 67.5, 65, and 62 kDa, which correspond to the three isoforms of tropoelastin. Immunoaffinity chromatography of elastin fragments released from insoluble elastin with pancreactic elastase demonstrated the antibody is specific for an epitope composed of the hexamer Val-Gly-Val-Ala-Pro-Gly, a chemoattractant for fibroblasts and monocytes. Despite its hydrophobic nature, this cell recognition domain is accessible on the surface of elastin. By immunoperoxidase staining of formalin-fixed, paraffin-embedded sections of tissue, this antibody was found to cross-react with elastin from human, goat, dog, cat, guinea pig, pig, sheep, and, to a lesser extent, hamster and frog elastin. No cross-reactivity was found with mouse, fish, chicken, lizard, rabbit, or rat elastins.

Elastin is an important polymeric protein of connective tissue that imparts elasticity to vertebrate elastic tissues. It is synthesized and secreted as a soluble single-chain protein (tropoelastin) that undergoes numerous post-ribosomal modifications prior to the organization of the elastic fiber in the extracellular space. Once secreted, tropoelastin molecules are joined covalently through chemical modification and crosslinking of specific lysyl residues to form the mature insoluble elastin. At the ultrastructural level it is visualized as predominantly amorphous material, which stains poorly by conventional methods. Purified mature elastin is a weak antigen. Antisera of relatively low titers are obtained when the insoluble protein elastin-derived peptides prepared by digestion of insoluble elastin are used as immunogens.

Elastin undergoes changes of morphology with aging and in many disease states. For example, abnormal accumulation of connective tissue in blood vessels contributes to alterations in vascular physiology associated with diseases such as hypertension and atherosclerosis. Several heritable diseases such as Marfan syndrome, pseudoxanthoma elasticum, and the Buschke-Ollendorf syndrome may result from molecular defects of elastin.

Reagents

The product is provided 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. Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. 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, the solution may be frozen 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
A minimum working dilution of 1:5,000 is determined by immunoperoxidase staining of formalin-fixed, paraffin-embedded sheep arterial tissue. Enzyme "unmasking" with trypsin is required.

Note: In order to obtain best results, it is recommended that each individual user determine their working dilution by titration assay.

References
1. Wrenn, D. S. et.al., Biochemistry **25**, 5172 (1986)

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