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ProductInformation

MONOCLONAL ANTI-α-SARCOMERIC ACTIN
CLONE 5C5
Mouse Ascites Fluid

Product No. **A 2172**

Product Description

Monoclonal Anti-α-Sarcomeric Actin (mouse IgM isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Purified rabbit striated muscle actin was used as the immunogen. 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-α-Sarcomeric Actin (also known as α-sr-1) is specific for α-skeletal and α-cardiac muscle actins when characterized in an ELISA, immunoblot and immunohistochemistry. The antibody shows wide species cross reactivity with tissue from human, sheep, bovine, rabbit, guinea pig, rat, frog, snake, and carp. It does not react with smooth muscle tissue. Monoclonal Anti-α-Sarcomeric Actin has been used as a marker for rhabdomyosarcoma.[1,2,3]

Monoclonal Anti-α-Sarcomeric Actin may be used in the study of muscle differentiation (normal and pathological conditions) using immunoperoxidase or immunofluorescent staining of frozen or formalin-fixed, paraffin-embedded tissue sections.

The two major cytoskeletal proteins implicated in cell motility are actin and myosin. Numerous investigators have shown that actin and myosin are constituents of many cell types and are involved in a myriad of cellular processes including locomotion, secretion, cytoplasmic streaming, phagocytosis and cytokinesis. Although actin is one of the most conserved eukaryotic proteins, it is expressed in mammals and birds as six isoforms characterized by electrophoresis and amino acid sequence analysis. Four of the six represent differentiation markers of muscle tissues. The other two are found in practically all cells. Actin isoforms show >90% overall sequence homology, but only 50-60% homology in their 18 NH_2-terminal residues. The NH_2-terminal region of actin appears to be a major antigenic region, and may be involved in the interaction of actin with other proteins such as myosin. It has been shown that the relative proportion of actin isoforms are different in smooth muscles of different organs and change within the same poulation of sarcomeric cells during development, pathological situations and different culture conditions. The actin in cells of various species and tissue origin is very similar in its immunological and physical properties.

Reagents

The product is provided as ascites fluid containing 0.1% sodium azide as a preservative.

Precautions and Disclaimer

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. Consult the MSDS for information regarding hazards and safe handling practices.

Product Profile

A minimum working dilution of 1:500 was determined by indirect immunoperoxidase labeling of formalin-fixed, paraffin-embedded human skeletal and cardiac muscle tissue.

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

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, 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 by centrifugation before use.

References

1. Skalli, O., et al., Amer. J. Pathol., **130**, 515 (1988).
2. Schurch, W., et al., Amer. J. Pathol., **128**, 91 (1987).
3. Babai, F., et al., Virchow Arch. B., **55**, 263 (1988).

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