Product Information

Anti-Actin (α-Sarcomeric) Antibody, Mouse Monoclonal

~1.0 mg/mL, clone 5C5, purified from hybridoma cell culture

SAB4200602

Product Description

Anti-Actin (α-Sarcomeric) (mouse IgM isotype) is derived from the hybridoma 5C5 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with purified rabbit striated muscle.[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Cat. No. ISO2.

Anti-Actin (α-Sarcomeric) recognizes α- skeletal and α-cardiac muscle actins from human, sheep, bovine, rabbit, guinea pig, rat, frog, snake, and carp. It does not react with smooth muscle tissue. It has been used as a marker for rhabdomyosarcoma.

The product may be used in several immunochemical techniques including ELISA, immunoblotting (~ 42 kDa) and immunohistochemistry.[1-3]

Actin is one of the major cytoskeletal proteins in eukaryotic cells and plays essential roles in a number of cellular processes including cell migration, cytokinesis, vesicle transport, and contractile force generation.[4] Striated myofibril is one of the most differentiated forms of the actin cytoskeleton, in which actin, myosin, and other regulatory components are organized into sarcomeres and produce contractile forces in a calcium-regulated manner. In vertebrates, skeletal and cardiac muscles are representative striated muscles. Studies in live muscle cells have demonstrated that actin in sarcomeres is dynamic during assembly and even in mature myofibrils. A few regulators of sarcomeric actin dynamics were identified, which can be classified into two types: enhancers of actin dynamics (e.g., ADF/cofilin) and stabilizers of actin filaments (e.g., tropomyosin) often antagonistically regulating actin turnover.[5] Alterations of sarcomeric actin filaments occur under pathological conditions influenced by genetic and/or environmental factors.

Congenital myopathies are genetic muscle disorders that are characterized by weak skeletal muscle and the presence of rods or aggregates containing actin and other myofibrillar proteins.[6]

Reagent

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

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at -20 °C 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

Immunohistochemistry

A working concentration of 1-2 µg/mL is recommended using formalin-fixed, paraffin-embedded human tongue.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Skalli, O., et al., Amer. J. Pathol., 130, 515-531 (1988).
2. Schurch, W., et al., Amer. J. Pathol., 128, 91-103 (1987).
3. Babai, F., et al., Virchows Arch. B Cell Pathol., 55, 263-277 (1988).
4. Pollard, T.D., and Cooper, J.A., Science, 326, 1208- 1212 (2009).
5. Ono, S., Cytoskeleton, 67, 677-692 (2010).
6. Clarkson, E., et al., J. Pathol., 204, 407-417 (2004).

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