Product Information

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

clone 5C5, hybridoma cell culture supernatant

SAB4200689

Product Description

Monoclonal Anti-Actin (α-Sarcomeric) (mouse IgM isotype) is derived from the hybridoma 5C5 produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with purified rabbit striated muscle.[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, (ISO2). The antibody is a culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-Actin (α-Sarcomeric) recognizes α-skeletal and α -cardiac muscle actins from human, mouse, bovine, rabbit, chicken, guinea pig, rat, xenopus, planaria (flatworm), and fish.[1-10] 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 immunohistochemistry, ELISA, immunoblotting (~42 kDa) and Immunofluorescence.[1-3]

Actin is the major cytoskeletal protein in eukaryotic cells which plays essential roles in a number of cellular processes including cell migration, cytokinesis, vesicle transport, and contractile force generation.[11] 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 the representative striated muscles. Studies in live muscle cells have demonstrated that during assembly and even in mature myofibrils, the actin organized in sarcomeres is dynamic.

A few regulators of sarcomeric actin dynamics were identified and classified into two types: enhancers of actin dynamics (for example, ADF/cofilin) and stabilizers of actin filaments (for example, tropomyosin) which often antagonistically regulate the actin turnover.[12] 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 skeletal muscle weakness and by the presence of rods or aggregates containing actin and other myofibrillar proteins.[13]

Reagent

The product is supplied as a culture supernatant solution containing 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. 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

Immunoblotting

A working dilution of 1:500-1:1,000 is recommended using rat heart tissue extracts.

Immunohistochemistry

A working dilution of 1:500 is recommended using formalin-fixed, paraffin-embedded human tongue sections and Biotin/ExtrAvidin®-Peroxidase staining system.

Immunofluorescence

A working dilution of 1:500-1,000 is recommended using human HeLa cells.

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

References

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