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Product Information

Monoclonal Anti-α-Actinin (Sarcomeric)
clone EA-53
produced in mouse, ascites fluid

Catalog Number **A7811**

Product Description

Monoclonal Anti-α-Actinin (Sarcomeric) (mouse IgG1 isotype) is derived from the EA-53 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with purified rabbit skeletal α-actinin.[1] The isotype is determined using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-α-Actinin (Sarcomeric) may be used for the localization of sarcomeric α-actinin using various immunochemical assays such as ELISA, dot blot, immunoblot, immunohistochemistry, and immunocytochemistry. The antibody is useful in the immunolocalization of α-actinin in normal and neoplastic cultured cells and tissues, and for studies on the state of sarcomeric muscle organization, in normal and pathological situations.

Monoclonal Anti-α-Actinin (Sarcomeric) is specific for α-skeletal muscle actinin and α-cardiac muscle actinin. It stains Z lines and dots in stress fibers of myotubes in skeletal and cardiac muscle,[2] but not in non-sarcomeric muscle elements (connective tissue, epithelium, nerves, smooth muscle). Thymic myoid cells are also stained. Activity of the antibody has been characterized by immunoblotting, ELISA and immunohistochemistry. Monoclonal anti-α-Actinin shows wide reactivity with human and animal muscle tissue, e.g., bovine, pig, sheep, rabbit, goat, hamster, cat, rat, mouse, dog, chicken, lizard, snake, frog, and fish, and may be used for immunoperoxidase or immunofluorescent staining of cultured muscle cells and frozen or formalin-fixed, paraffin-embedded tissue sections.

α-Actinin[3] is an actin-binding protein present in both muscle and non-muscle cells. It has a polypeptide molecular weight of 100 kDa and forms dimers in solution. In normal skeletal muscle, α-actinin is associated with the Z-discs that define the muscle sarcomers. In smooth muscle, α-actinin is detected predominantly in dense bodies and plaques which are characteristic of that tissue. Immunofluorescent labeling of a large variety of cells with anti α-actinin reveals an extensive association of the proteins with the actin-containing stress fibers and, in particular, with their membrane-bound termini.

Reagents

Supplied 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. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at −20 °C. For continuous use, the product may be stored at 2-8 °C for up to one month. For extended storage, the solution may be frozen in working aliquots at −20 °C. 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.

Product Profile

Immunohistochemistry: a minimum titer of 1:800 was determined by indirect immunoperoxidase labeling of protease-digested, formalin-fixed, paraffin-embedded sections of human skeletal or cardiac muscle.

Immunoblotting: a minimum titer of 1:2,500 was determined using Rat leg muscle extract.

Note: In order to obtain best results in various techniques and preparations, it is recommended that each individual user determine their optimal working dilutions by titration assay.

References

1. Fridlanskaya, I., et al., *Tsitologia*, **31**, 1234 (1989).
2. Goncharova, E., et al., *Development*, **114**, 173 (1992).
3. Lazarides, E., and Burridge, K., *Cell*, **6**, 289 (1975).
4. Wyszynski, M., et al., Differential regional expression and ultrastructural localization of α-Actinin-2, a putative NMDA receptor-anchoring protein, in rat brain. *Journal of Neuroscience*. **18**, 1383-1392 (1998).
5. Uematsu, M., et al., Quantitative chemical composition of cortical GABAergic neurons revealed in transgenic venus-expressing rats. *Cerebral Cortex*, **18**, 315-330 (2008).
6. Price, C.J., et al., Neurogliaform neurons from a novel inhibitory network in the hippocampal CAI area. *Journal of Neuroscience*. **25,** 6775-6786 (2005).

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