

Product Information

Monoclonal Anti-Actin, α -Smooth Muscle-Peroxidase

Antibody produced in mouse

Clone 1A4, Purified from hybridoma cell culture

SAB4200679

Product Information

Monoclonal Anti-Actin, α -Smooth Muscle-HRP (mouse IgG2a isotype) is derived from the hybridoma 1A4 produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with a synthetic peptide corresponding to a sequence at the NH₂ terminal synthetic decapeptide of α -smooth muscle actin, conjugated to KLH.¹ The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2). The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Actin, α -Smooth Muscle-HRP specifically recognizes the α -smooth muscle isoform of actin (42 kDa) by direct-Immunoblotting, direct-Immunohistochemistry and direct-ELISA.¹ It does not react with the other major actin isoforms present in fibroblasts or epithelial cells (β and γ -cytoplasmic), striated muscle (α -sarcomeric), myocardium (α -myocardial), or γ -smooth muscle isoform. The antibody reacts with actin in human, bovine, goat, sheep, rabbit, cat, dog, mouse, rat, hamster, guinea pig, chicken, viper, lizard, frog, snail and crayfish tissues. Monoclonal Anti-Actin, α -Smooth Muscle-HRP is especially useful for direct staining of tissues and cells.

Actin and Myosin are two major cytoskeletal proteins implicated in cell motility, both constitutively expressed in many cells types and are involved in a myriad of cellular processes including locomotion, secretion, cytoplasmic streaming, phagocytosis and cytokinesis. Actin is a highly conserved protein, expressed as six isoforms and represents differentiation markers of muscle tissues. It has been shown that relative proportions of actin isoforms are diverse in smooth muscles of different organs and change within the same population of smooth muscle cells during development, pathological situations and different culture conditions.¹⁻⁶

Monoclonal Anti-Actin, α -Smooth Muscle-HRP may contribute to the characterization of stromal cell heterogeneity in various organs and distinguish smooth muscle cells from fibroblasts in mixed cultures.¹⁻⁶

Reagent

Supplied as a lyophilized powder.

Preparation Instructions

Reconstitute the contents of the vial with 0.1 mL of distilled water to a final antibody concentration of ~ 2.0 mg/mL. After reconstitution, the solution contains 1% BSA, 0.01% preservative in 0.01 M sodium phosphate buffered saline.

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

Store the lyophilized product at 2–8 °C. For extended storage after reconstitution, keep at –20 °C in working aliquots. Avoid repeated freeze-thaw cycles. For continuous use after reconstitution, keep at 2–8 °C for up to 1 month. Solutions at working dilution should be discarded if not used within 12 hours.

Product Profile

Direct-Immunoblotting: a working concentration of 2-4 µg/mL is recommended using extracts of mouse heart tissues.

Direct-Immunohistochemistry: a working antibody concentration of 5-10 µg/mL is recommended using human appendix or tonsil tissue sections.

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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3. Durand-Arczynska, W., et al., *Histochemistry*, **100**, 465-71 (1993).
4. van Royen, N., et al., *FASEB*, **16**, 432-34 (2002).
5. Kern S., et al., *FEBS Open Bio.*, **4**, 11-17 (2013).
6. Morizane R., et al., *Sci Rep.*, **4**, 4578 (2014).

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