

Product Information

Monoclonal Anti-Actin, Smooth Muscle Clone CGA7

produced in mouse, purified immunoglobulin

Catalog Number **A7607**

Product Description

Monoclonal Anti-Actin, Smooth Muscle (mouse IgG2b isotype) is derived from the hybridoma CGA7 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with partially purified chicken gizzard actin (GeneID 423787).¹ The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Actin, Smooth Muscle, reacts with human,¹⁻⁵ monkey,^{1,6} chicken,¹ rat^{1,7-8} and mouse¹ smooth muscle actin.^{1,2} It specifically recognizes α and γ smooth muscle actin. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~42 kDa), immunocytochemistry, and immunohistochemistry.^{1,2}

The two major cytoskeletal proteins implicated in cell motility are actin and myosin. 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 at least six isoforms characterized by different electrophoretic mobility and amino acid sequence.^{9,10} Four of these isoforms represent differentiation markers of muscle tissues and two are found practically in all cells. There are three α -actin (skeletal, cardiac and smooth muscle), one β -actin (β -non muscle) and two γ -actins (smooth muscle and nonmuscle). Actin isoforms show >90% overall sequence homology, but only 50-60% homology in their 18 N-terminal residues.¹¹ The N-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 is different in smooth muscle of different organs and changes within the same population of smooth muscle cells during development, pathological situations and different culture conditions. Actin molecules of different species and tissue origin are very similar in their immunological and physical properties.

Antibodies to smooth muscle actin may thus help in the characterization of stromal cell heterogeneity in various organs and distinguish smooth muscle cells from fibroblasts in mixed cultures.

Reagent

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

Antibody concentration: ~ 1.0 mg/mL

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

For continuous use, store at 2-8 °C for up to one month. 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 concentration of 5-10 μ g/mL is recommended using chicken gizzard total extract.

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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