3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Monoclonal Anti-Actin (20-33), Clone SIG2-AC2
produced in rabbit, ascites fluid

Catalog Number **A0483**

Product Description

Monoclonal Anti-Actin (20-33) (rabbit IgG) is a rabbit monoclonal derived from the hybridoma SIG2-AC2 produced by the fusion of rabbit myeloma cells and splenocytes from rabbits immunized with a synthetic peptide corresponding to amino acids 20-33 of actin, attached to a multiple antigen peptide (MAP) backbone.

Monoclonal Anti-Actin (20-33) recognizes an epitope located at the N-terminal region of actin. This epitope is conserved in all actin isoforms. The antibody reacts with human, chicken. and rat actin. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~ 42 kDa), immunohisto-chemistry, and immunocytochemistry.

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 with at least six isoforms characterized by electrophoresis and amino acid sequence analysis.[1-3] Four of them represent differentiation markers of muscle tissues and two are found in nearly all cells. There are three α-actins (skeletal, cardiac, and smooth muscle), one β-actin (β–non-muscle), and two γ-actins (γ-smooth muscle and γ-non-muscle). Actin isoforms show >90% overall sequence homology, but only 50-60% homology in their 18 N-terminal residues.[4] 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.[5] It undergoes post-translational modifications required for normal actin function, such as interaction with myosin, troponin or actin isoform segregation *in vivo*.[6-9]

Reagent

Supplied as ascites fluid 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 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 dilution of 1:50-1:100 was determined 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

1. Herman, I., *Curr. Opin. Cell Biol.*, **5**, 48-55 (1993).
2. Vandekerckhove, J., and Weber, K., *Eur. J. Biochem.,* **90**, 451-462 (1978).
3. Drew, J., et al., *Am. J. Physiol.,* **260**, C1332-C1340 (1991).
4. Lessard, J., *Cell Motil. Cytoskel.,* **10**, 349-362 (1988).
5. Sutok, K., and Mabuchi, I., *Biochemistry*, **25**, 6186-6192 (1986).
6. Hennessey, E.S., et al., *Eur. J. Biochem.,* **197**, 345-352 (1991).
7. Abe, A., et al., *Biochem. Biophys. Res. Comm.,* **268**, 14-19 (2000).
8. Wong, W.W., et al., *Biophys. J.,* **83**, 2726-2732 (2002).
9. Kashima, A.S., *Trends Cell Biol.,* **16**, 610-615 (2006).

GG,KAA,PHC 12/08-1