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Product Information

Anti-Actin (20-33)
produced in rabbit, IgG fraction of antiserum

Catalog Number **A5060**

Product Description

Anti-Actin (20-33) is produced in rabbit using as immunogen a synthetic actin N-terminal peptide: Gly-Phe-Ala-Gly-Asp-Asp-Ala-Pro-Arg-Ala-Val-Phe-Pro-Ser-Lys attached to a multiple antigen peptide (MAP) backbone. The peptide corresponds to amino acid residues 20-33 of actin with N-terminally added lysine.

Anti-Actin (20-33) recognizes an epitope located on the N-terminal region of actin. This epitope is conserved in all actin isoforms. The antibody specifically labels actin in a wide variety of tissues and species using immunoblotting (band at 42 kDa). It specifically stains typical stress fibers in cultured cells using indirect immunofluorescent staining and immunohistochemistry. The epitope recognized by the antibody is resistant to formalin-fixation and paraffin-embedding. Methacarn or Bouin's solutions may also be used as fixatives.

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 electrophoresis and amino acid sequence analysis.[1-3] Four of them represent the differentiation markers of muscle tissues and two are found practically in all cells. There are three α-actins (α-skeletal, α-cardiac, and α-smooth muscle), one β-actin (β-nonmuscle) and two γ-actins (γ-smooth muscle and γ-nonmuscle). Actin isoforms show >90% overall sequence homology, but only 50-60% homology in their 18 NH_2-terminal residues.[4] The NH_2-terminal domain of actin appears to be a major antigenic region of the molecule.[5] The immunizing peptide is derived from an N-terminal conserved region that contains residues involved in interaction with myosin and gelsolin and possibly in Mg^{2+} binding. The antibody shows a broad reactivity among actin isoforms and across a range of organisms.

Anti-Actin may be used for the localization of actin using various immunochemical assays such as immunoblotting, dot blot and immunohistochemistry. It can be used as a probe for the N- terminal region of a variety of actins and their cleavage products.

Reagent

Supplied in 0.01 M phosphate buffered saline, pH 7.4, 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 a maximum of one month. For extended storage, freeze 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.

Product Profile

Immunoblotting: a minimum working dilution of 1:250 is determined using rat brain or chicken muscle extracts.

Indirect Immunofluorescence: a minimum working dilution of 1:200 is determined using cultured human fibroblasts.

Immunohistochemistry: a minimum working dilution of 1:100 is determined using formalin fixed paraffin embedded section of chicken or rat tissue.

Note: In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

References

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4. Lessard, J.L., Cell Motil. Cytoskeleton, **10**, 349 (1988).
5. Roustan, C., et al., Biochem. J., **233**, 193 (1986).

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