Product Information

Anti-β-Actin−Peroxidase antibody, Mouse monoclonal

clone AC-15, purified from hybridoma cell culture

A3854

Product Description

Anti- β-Actin–Peroxidase Conjugate is a solution of a Protein A purified fraction of Anti-β-Actin isolated from hybridoma cell culture of the AC-15 hybridoma, conjugated to horseradish peroxidase. Anti-β-Actin (mouse IgG1 isotype) is derived from the AC-15 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a slightly modified-β-cytoplasmic actin N-terminal sequence: Ac-Asp-Asp-Asp-Ile-Ala-Ala-Leu-Val-Ile-Asp-Asn-Gly-Ser-Gly-Lys conjugated to KLH.[1]

Anti-β-Actin[1,2] recognizes an epitope located on the N-terminal end of the β-isoform of actin. The antibody labels specifically β-actin in a wide variety of tissues and species using immunoblotting (42 kDa).[1,2] The antibody cross-reacts with β-Actin expressed in cells of human,[3] bovine, sheep, pig, rabbit,[4] cat, dog, mouse,[5] rat,[6] guinea pig, chicken, carp, and hirudo medicinalis (leech) tissues, but not in Dictyostelium discoideum amoebae nor Drosophila.

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 process 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.[7,8] Four of them represent the differentiation markers of muscle tissues and two are found practically in all cells.

There are three α-actins (skeletal, cardiac, and 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 NH2-terminal residues.[9] This 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.

Actins in cells of different species and tissue origin are very similar in their immunological and physical properties. Therefore, antibodies specific for actins can be used as internal control for protein target quantitation in a wide range of species and tissues.

Reagent

Supplied as a Solution in 0.01 M phosphate buffered saline, pH 7.4, containing 0.05% MIT.

Antibody Concentration:2–4 mg/mL

Molar ratio: Ab/E:0.6–1.4

Precautions and Disclaimer

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

For continuous use, store at 2–8 °C for up to one month. For prolonged 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. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody dilution of 1:25,000–1:50,000 is recommended using cell extracts of human foreskin fibroblasts or chicken fibroblasts.

Note: In order to obtain the best results using various techniques and preparations, we recommend deter-mining optimal working dilutions by titration.

References

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