

MOUSE ANTI-ACTIN MONOCLONAL ANTIBODY

CATALOG NUMBER: MAB1501R

LOT NUMBER:

QUANTITY: 100ug

CONCENTRATION: 1 mg/mL

CLONE NAME: C4

HOST/ISOTYPE: Ms IgG1kappa

BACKGROUND: Actin is an abundant cytoskeletal protein found in all cells (True, 1990). The protein's 42 kD peptide chain assumes two physical forms: globular actin, which may serve as a cytoplasmic storage pool, and fibrous actin, which, in conjunction with myosin, generates muscle contraction (True, 1990). In non-muscle cells, actin appears to be involved in a variety of functions, such as cell motility, exocytosis, and phagocytosis (True, 1990). Distribution of the six known isoforms of actin - four muscle actins (alpha-skeletal, alpha-vascular smooth, alpha-cardiac, and gamma-enteric smooth) and two cytoplasmic actins (alpha and gamma) is tissue specific (Otey, 1986; Lessard, 1988).

SPECIFICITY: MAB1501R is a pan-actin antibody that binds to an epitope in a highly conserved region of actin; therefore, this antibody reacts with all six isoforms of vertebrate actin (Lessard, 1988). The epitope recognized by the antibody appears to be located in the N-terminal two thirds of the actin molecule, possibly near amino acids 50-70. Reacts with both globular (G) and filamentous (F) forms of actin and does not interfere with actin polymerization to form filaments, at a ratio as high as one antibody per two actin monomers. However, this antibody does increase the extent of polymerization when used at a lower ratio of antibody to actin. In addition to labeling myotubes, anti-actin stains myoblasts and fibroblasts (Lessard, 1983). Although clone C4 is prepared as an antibody to chicken gizzard muscles actin, it reacts with actins from all vertebrates, as well as with Dictyostelium discoideum and Physarum polycephalum actins (Lessard, 1988).

IMMUNOGEN: Purified chicken gizzard actin (Lessard, 1988).

APPLICATIONS: Western blot: 1-20 µg/ml. On muscle homogenates subject to SDS-PAGE, reacts relatively uniformly with a 43 kD protein present in skeletal, cardiac, gizzard and aorta tissues. Appears to react with all isoforms of actin found in these preparations and shows a strong reaction with the alpha-actin found in skeletal, cardiac, and arterial muscle (Otey, 1987).

Immunocytochemistry: 10 µg/ml (methanol fixed mouse 3T3 cells).

Immunohistochemistry: 10µg/mL for paraffin embedded, 4% formaldehyde, 3% glutaraldehyde, sodium cacodylate treated sections {see Luciano, L et al. 2003}.

ELISA: strongly reactive with the cytoplasmic actin and shows a significant binding to gizzard, skeletal, arterial and cardiac actins. Also shows a significant binding to both Dictyostelium discoideum and Physarum polycephalum.

Optimal working dilutions must be determined by end user.

For research use only; not for use as a diagnostic.

- SPECIES REACTIVITY:** Reacts with All Species
- FORMAT:** The antibody was purified from ascites fluid by protein A fractionation.
- PRESENTATION:** Liquid in 0.02M phosphate buffer, 0.25M NaCl with 0.1% sodium azide, pH 7.6
- STORAGE/HANDLING:** Maintain at 2-8°C for up to 6 months.
- REFERENCES:**
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