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Product Information

Anti-Myosin IIA, non muscle
produced in rabbit, affinity isolated antibody

Catalog Number **M8064**

Product Description

Anti-Myosin IIA, non muscle, is produced in rabbit using as immunogen, a synthetic peptide corresponding to amino acid residues 1949-1960 of the heavy chain of human myosin IIA (nonmuscle) conjugated to KLH. This sequence differs by three amino acids from the respective rat sequence. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Myosin IIA, non muscle, specifically recognizes the heavy chain of human myosin IIA (nonmuscle) (NMHCA) by immunoblotting (~200 kDa) and by immunocyto-chemistry. Staining of myosin IIA, non muscle, by immunoblotting is inhibited by the immunizing peptide. Additional bands may be detected in some preparations. The antibody cross-reacts with dog and rat myosin.

Myosins belong to a superfamily of actin-based motor proteins comprising to date at least 15 classes. There are two main groups of myosins: the conventional (class II) and the unconventional myosins.[1] Myosin IIA (nonmuscle) is a relatively abundant, widespread two-headed myosin composed of an N-terminal motor domain, a light chain binding neck region, a coiled-coil region, and a nonhelical C-terminal domain. It forms a heterohexamer composed of a pair of heavy chains and two pairs of light chains.

The vertebrate myosin II class members include muscle (sarcomeric and smooth) and non muscle (cytoplasmic) myosins.[1-3] The non muscle myosin II class contains two isoforms: IIA and IIB, which exhibit 85% and 72% amino acid identity in the motor domain and the rod, respectively. Varying ratios of the two isoforms are expressed in different cells and tissues. Some cells express only a single isotype: e.g. myosin IIA in human platelets, rat basophilic leukemia cells, and chicken intestinal epithelium and myosin IIB in embryonic cardiac myocytes and COS-7 cells.[2-4] The two isoforms vary in their intracellular localization, enzymatic activities, and proposed functions. Three additional isoforms of IIB have been described in neurons. Another isoform, myosin IIC, seems to constitute a distinct third isoform of the nonmuscle myosins.

Nonmuscle myosin II is involved in cell motility and adhesion, cytokinesis, vesicular transport, intracellular force generation, and in morphogenesis during development. Its activity is regulated by light chain and possibly heavy chain phosphorylation and by association with proteins such as Mts1.[3] Mutations in the NMHCA gene are found in several syndromes associated with megakaryocyte/platelet/leukocyte disorders.[5]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody concentration: 1.0-1.5 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 prolonged storage, freeze in working aliquots at −20 °C. 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 dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a minimum working antibody dilution of 1:1,000 is recommended using a whole extract of dog MDCK kidney cells and human Jurkat acute T cell leukemia cells.

Indirect immunofluorescence: a minimum working antibody dilution of 1:100 is recommended using rat NRK kidney cells.

Note: In order to obtain the best results using different techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Sellers, J. R., *Biochem. Biophys. Acta*, **1496**, 3-22 (2000).
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3. Bresnick, A. R., *Curr. Opin. Cell Biol*., **11**, 26-33 (1999).
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5. Seri, M., et al., *Nature Genet*., **26**, 103-105 (2000).

PHC 07/14-1