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Product Information

Anti-Myosin I β (Nuclear)

Developed in Rabbit
Affinity Isolated Antibody

Product Number **M 3567**

Product Description

Anti-Myosin I β (Nuclear) is developed in rabbits using as immunogen a synthetic peptide corresponding to amino acid residues 1-16 of the heavy chain of mouse myosin I β (nuclear isoform), conjugated to KLH. This sequence is missing from the other myosin I isoforms as well as from other currently known myosins. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Myosin I β (Nuclear) specifically recognizes the heavy chain of the nuclear form of human Myosin I β by immunoblotting (~120 kDa), indirect immunofluorescence, and immunocytochemistry. Staining of myosin I β (nuclear) band by immunoblotting is inhibited by the immunizing peptide. Additional bands may be detected in some preparations. The antibody cross-reacts with human, dog, mouse, and rat myosin I β (nuclear).

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 I (also designated myosin-1c, myo1c, M1C, myr 2, and myh 2) is a widely distributed single-headed myosin composed of an N-terminal motor domain, a calmodulin-light chain binding neck region, and a short C-terminal domain. In mammalian cells, myosin I is usually found in the cytoplasm and is especially enriched in perinuclear regions and dynamic cell margins. Myosin I associates with lipid membranes through its tail domain while its motor domain interacts with actin filaments. Its cellular localization appears to be specified by tropomyosin and spatially regulated actin polymerization. Myosin I is involved in cell motility, microvilli anchorage, vesicular and organelle transport, and signal transduction.

There are at least eight vertebrate myosin I isoforms in humans and mice. Myosin I β is found in a variety of cells such as kidney tubular cells and inner-ear hair cells.^{2,3} In the latter, it is involved in the adaptation of the hearing transducer to cope with loud and faint noises. Myosin I β (nuclear) is a recently discovered isoform that localizes to the nucleus. This isoform contains a unique 16-amino acid amino-terminal extension. Myosin I β (nuclear) co-localizes with RNA polymerases I and II and possibly acts as a molecular motor to power transcription.^{4,5}

Reagent

Anti-Myosin I β is 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: 0.7-1.2 mg/ml.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS 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 is not recommended. Storage in frost-free freezers is also 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

By immunoblotting, a minimum working dilution of 1:1,000 is recommended using an extract of human HeLa cells nuclei and a whole cell extract of dog MDCK cells.

By indirect immunofluorescence, a minimum working dilution of 1:50 is recommended using mouse NIH/3T3 cells.

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

References

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5. Wagner, M.C., and Molitoris, R.A., Am. J. Physiol., **272**, C1680-C1690 (1997).

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