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ProductInformation

Anti-Myosin IX/Myr5
Developed in Rabbit
IgG Fraction of Antiserum

Product Number **M 5566**

Product Description

Anti-Myosin IX/Myr5) is developed in rabbit using a synthetic peptide corresponding to the C-terminus of rat myosin IX/Myr5 (amino acids 1960-1980) conjugated to keyhole limpet hemocyanin (KLH) as immunogen. The peptide sequence is highly conserved in mouse and human myosin IXb (Myo9b) (two amino acid substitutions). Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Myosin IX/Myr5 recognizes rat myosin IX/Myr5 (230 kDa) by immunoblotting. Staining of myosin IX/Myr5 by immunoblotting is specifically inhibited by the myosin IX/Myr5 immunizing peptide (rat, amino acids 1960-1980).

Myosin IX belongs to the family of unconventional myosins, distinct from the classical myosins I and myosins II.[1-3] Myosin IX, thought to be involved in signal transduction and leukocyte differentiation,[2, 4-6] includes several isoforms. The rat isoforms are myosin IX/Myr5 (230 kDa) and Myr7 (300 kDa), and the human isoforms are myosin IXa (Myo9a) and myosin IXb (Myo9b). The isoforms of myosin IX have similar overall domain structure and are expressed in many tissues and cell types, although they have distinct tissue expression patterns.

The myosin IX subfamily is unique among the many classes of actin-based motors. The tail region of these myosins contains a GTPase-activating protein (GAP) domain structurally homologous to the Rho family of G proteins. The head domain of myosin IX contains a unique N-terminal extension and an insertion of 120 amino acids at a postulated myosin-actin contact site. Myosin IX/Myr5 is able to bind actin filaments in an ATP-regulated manner. The head domain is followed by four putative light chain binding sites. The tail domain of myosin IX/Myr5 contains a region that coordinates two atoms of zinc followed by the GAP domain that stimulates GTP hydrolysis.[7] Therefore, myosin IX/Myr5 provides a direct link between Rho GTPases, which have been implicated in the regulation of actin organization, and the actin cytoskeleton. Over-expression of both Myr5 and Myr7 in cultured cells results in inactivation of Rho, loss of actin stress fibers, and focal contacts leading to changes in cell morphology.[7, 8] These changes correlate with Rho-GAP activity, suggesting a role for Myr5/Myr7 in regulating Rho signaling and Rho-dependent remodeling of the actin cytoskeleton.

The subcellular localization of class IX myosins appears to be partly cytoplasmic, and partly associated with membranes and the actin cytoskeleton. The expression level of myosins IX may vary during development and differentiation. During rat brain development, myosin IX/Myr5 is expressed at higher levels in embryonic brain than in adult brain. In the adult rat, it is highly expressed in lung, liver, spleen, and testis.[8]

Reagent

Anti-Myosin IX/Myr5 is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

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

For immunoblotting, a working antibody dilution of 1:1,000 is recommended using a rat embryonic brain extract.

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

References

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