

ProductInformation

Monoclonal Anti-Myosin (Light Chains 20 kDa)

Clone MY-21

Mouse Ascites Fluid

Product No. **M4401**

Product Description

Monoclonal Anti-Myosin (Light Chains 20 kDa) (mouse IgM isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Chicken lens membranes were used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Myosin reacts best with the 20,000 dalton light chains of chicken gizzard, intestine or pig stomach myosin (SDS heat denatured and reduced) using an immunoblotting technique. On dot blots, the antibody reacts with purified myosin light chains (20,000 daltons) in both the native protein state or an SDS-heat denatured, reduced state. The product shows no reactivity with intact myosin molecules in their native state. Heat denaturation in the presence of SDS and a reducing agent (e.g. mercaptoethanol) makes accessible for the monoclonal antibody an epitope on the myosin light chains. By immunoblotting, the product shows wide species cross reactivity, reacting with denatured myosin of chicken, pig, bovine, rabbit and human muscle. Using immunofluorescent methods on chicken or human fibroblast cells, the antibody localizes an epitope on stress fibers of well spread cells.

Monoclonal Anti-Myosin shows no reactivity on frozen sections of human skeletal muscle.

Contractile proteins are ubiquitous in eukaryotic cells. Their presence is related to motile functions. The two major cytoskeletal proteins implicated in cell motility are actin and myosin. Numerous investigators have shown that actin and myosin are constituents of many cell types and are involved in a myriad of cellular processes including locomotion, secretion, cytoplasmic streaming, phagocytosis, and cytokinesis. Myosin is a 500,000 dalton protein known to interact with identical heavy chains (200,000 daltons each) and four light chains (15,000-20,000 daltons). Myosin molecules consist of two major regions: tail (rod) and head regions.

Myosin has three major biological functions.

1. Myosin molecules spontaneously assemble into filaments in solutions of physiologic ionic strength and pH. Thick filaments consist mainly of myosin molecules.
2. Myosin is an enzyme (ATPase) and its activity is the immediate source of the free energy that drives muscle contraction.
3. Myosin binds to the polymerized form of actin, the major constituent of the thin filament.

Myosin can be viewed in immunofluorescent microscopy enabling the delineation of the intracellular organization of proteins that are in the form of a supramolecular structure. The product is useful in identifying the light chains of myosin by immunoblotting techniques.

Reagent

The product is provided as ascites fluid with 15 mM sodium azide as a preservative.

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.

Product Profile

A working antibody dilution of at least 1:200 was determined by indirect immunofluorescent labeling of cultured chicken or human fibroblasts.

In order to obtain optimum results, it is recommended that each individual user determine their optimum working dilutions by titration.

Storage

For continuous use, store at 2-8 °C for up to one month.
For extended storage, solution may be frozen in working aliquots. Repeated freezing and thawing is not

recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

rev KAA 05/06

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.