

Product Information

Monoclonal Anti-Myosin (Smooth)

Clone hSM-V

produced in mouse, ascites fluid

Catalog Number **M7786**

Product Description

Monoclonal Anti-Myosin (Smooth) (mouse IgG1 isotype) is derived from the hSM-V hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with human uterus smooth muscle extract. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Myosin (Smooth) reacts in an immunoblotting assay with myosin heavy chain polypeptides of 204 and 200 kDa (SM-1 and SM-2). It does not react with skeletal, cardiac or non-muscle myosin. In immunohistochemical staining, it stains vascular and visceral smooth muscle cells, as well as cells that have smooth muscle-like characteristics (myofibroblasts and myoepithelial cells), but not epithelial, endothelial or connective tissue cells. The product reacts with smooth muscle tissue from human, dog, rabbit, pig, guinea pig, and chicken. The antibody may be used in immunoblotting, immunoprecipitation, and immunohistochemical staining of methacarn-fixed, paraffin-embedded, or frozen tissue sections.

Contractile proteins, which are involved with motility functions, have been reported to be ubiquitous in eukaryotic cells. Two major cytoskeletal proteins implicated in cell motility are actin and myosin. Actin and myosin are constituents of many cell types and are involved in a myriad of cellular process including locomotion, secretion, cytoplasmic streaming, phagocytosis, and cytokinesis. Myosin (~500 kDa) containing two identical heavy chains (~200 kDa each) and four light chains (15-26 kDa). Myosin molecules consist of two major regions: tail (rod) and heads. They aggregate into filaments through the tail region and interact with actin and with ATP through the head region. Myosin molecules spontaneously assemble into filaments in solutions of physiologic ionic strength and pH. In fact, the thick filament consists mainly of myosin molecules. Myosin is activated by the enzyme ATPase.

This activation is the immediate source of the free energy that drives muscle contraction. It binds to the polymerized form of actin, the major constituent of the thin filament. Myosin is generally assumed to be a very specific and reliable smooth muscle marker, provided that the antibody used is specific for smooth muscle myosin and does not cross-react with skeletal, cardiac or non-muscle myosins. Such an antibody^{1,2} can be used to identify smooth muscle cells as well as cells that express certain smooth muscle-like features, i.e. myofibroblasts and myoepithelial cells. It is useful in the identification and localization of myosin in smooth muscle elements, in the diagnosis and classification of mesenchymal tumors and in studies on myosin expression in normal and malignant cell proliferations.³

Reagent

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

Precautions

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage

For continuous use, store at -20°C for up to one month. For prolonged storage, freeze in working aliquots. 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.

Product Profile

A minimum working dilution of 1:500 was determined by indirect immunoperoxidase labeling of acetone fixed human and animal frozen section.

Note: In order to obtain best results in different techniques and preparations, it is recommended that each individual user determine their optimal working dilutions by titration assay.

References

1. Longtine, J., et al., *J. Histochem. Cytochem.*, **33**, 179 (1985).
2. Schneider, M., et al., *J. Cell Biol.*, **101**, 66 (1985).
3. Benzonana, G., et al., *Cell Motil. Cytoskel.*, **11**, 260 (1988).

AD, MG, KAA, PHC 04/21-1