

MOUSE ANTI-SMOOTHELIN MONOCLONAL ANTIBODY

CATALOG NUMBER: MAB3242

LOT NUMBER:

QUANTITY: 100 µg

CONCENTRATION: 1 mg/mL

SPECIFICITY: MAB3242 reacts with smoothelin, a cytoskeletal protein exclusively found in smooth muscle cells. Reacts with the 59 kDa and 100 kDa protein corresponding to smoothelin A and B respectively by Western blot.

BACKGROUND

Smoothelin is a constituent of the smooth muscle cell (SMC) cytoskeleton. Antibodies directed to smoothelin are useful tools to monitor SMC differentiation. Smoothelin is exclusively expressed in fully differentiated (contractile) SMCs. RNA and protein analyses revealed a broad species distribution of this protein. Cell with SMC-like characteristics, such as myofibroblasts and myoepithelial cells, as well as skeletal and cardiac muscle do not contain smoothelin. Confocal scanning laser microscopy of tissue sections, as well as transfection studies, show a filamentous organization of smoothelin that is different from that of desmin or vimentin. Smoothelin colocalizes with actin stress fibers. In immunoblots two molecular weight isoforms are detected i.e. a 59 kDa isoform specific for visceral SMC, and an isoform with a molecular weight of approximately 100 kDa in vascular SMC. Human smoothelin is encoded by a single copy gene which is located on chromosome 22. MAB3242 is useful to discriminate fully differentiated, contractile SMCs from proliferative SMCs. The distribution of smoothelin-positive cells indicates a correlation between smoothelin expression and smooth muscle tissue contractility. Smoothelin is a useful tool in the evaluation of atherosclerotic lesions.

IMMUNOGEN Cytoskeletal extract of chicken gizzard.

ISOTYPE: IgG₁

APPLICATIONS: Western blot: 1:100-1:1,000
Immunocytochemistry: 1:100-1:200
Immunohistochemistry: 1:100-1:200 on frozen and paraffin embedded tissue. For use on paraffin embedded tissue the sections should be pretreated with 10 mM citrate buffer (pH 6.0) and heated for 3 to 5 minutes (microwave, etc).
Optimal working dilutions must be determined by the end user.

SPECIES REACTIVITY: Human, canine, feline, chicken, porcine and monkey. Not with hamster, rat or mouse. Other species have not been tested.

FORMAT: Purified immunoglobulin.

PRESENTATION: Liquid in PBS containing 0.09% sodium azide.

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STORAGE/HANDLING: Maintain at -20°C in undiluted aliquots up to 6 months after date of receipt.
Avoid repeated freeze/thaw cycles.

- REFERENCES:**
1. Van der Loop, FTL, et al., Smoothelin, a novel cytoskeletal protein specific for smooth muscle cells. *J. Cell Biology* (1996) **134**:401-411.
 2. Wehrens, XHT et al., Localization of smoothelin in avian smooth muscle and identification of a vascular-specific isoform. *FEBS Letters* (1997) **405**:315-320.
 3. Van der Loop, FTL, et al., Differentiation of smooth muscle cells in human blood vessels as identified by smoothelin, a novel marker for the contractile phenotype. *Arterioscler. Thromb. Vasc. Biol.* (1997) **17**:665-671.

Important Note: *During shipment, small volumes of product will occasionally become entrapped in the seal of the product vial. For products with volumes of 200 μ L or less, we recommend gently tapping the vial on a hard surface or briefly centrifuging the vial in a tabletop centrifuge to dislodge any liquid in the container's cap.*

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