

Mouse Smoothelin Monoclonal Antibody | anti-SMTN antibody

Mouse anti Smoothelin

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA14561	Mouse	Canine, Chicken, Feline, Human, Monkey, Swine	Immunohistochemistry, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

Smoothelin; Monoclonal Antibody; Mouse anti Smoothelin; anti-SMTN antibody

PRODUCT SPECIFICATIONS

Host	Mouse
Reactivity	Canine, Chicken, Feline, Human, Monkey, Swine
Clonality	Monoclonal
Isotype	IgG1
Clone Number	R4A
Specificity	R4A reacts with the 59 kDa and 100 kDa protein, corresponding to smoothelin A and B, respectively, which are exclusively found in smooth muscle cells.
Form/Format	Each vial contains 100 ul 1 mg/ml purified monoclonal antibody in PBS containing 0.09% sodium azide.
Applicable Applications for anti-SMTN antibody	IHC (Immunohistochemistry), IHC (Immunohistochemistry), WB (Western Blot)
Application Notes	R4A is suitable for immunoblotting and immunohistochemistry on frozen and paraffin-embedded tissues. For staining paraffin-embedded tissues pretreatment in 10 mM citRate buffer (pH 6.0) and heating for 3 times 5 minutes in a microwave is required. Optimal antibody dilution should be determined by titration; recommended range is 1:100 - 1:200 for immunohistochemistry with avidin-biotinylated Horseradish peroxidase complex (ABC) as detection reagent, and 1:100 - 1:1000 for immunoblotting applications.
Source Note	R4A is a Mouse monoclonal IgG1 antibody derived by fusion of SP2/O-Ag14 Mouse myeloma cells with spleen cells from a Mouse immunized with a cytoskeletal extract of Chicken gizzard.
Preparation and Storage	Store at 4 degree C, or in small aliquots at -20 degree C.

IMAGES

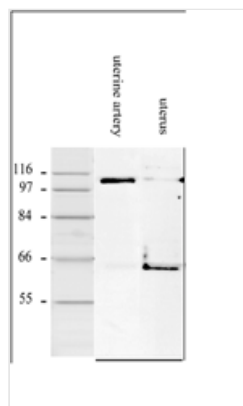

IB (Immunoblot)

Figure 8. Immunoblotting results (R4A) on uterine artery and uterine corpus.

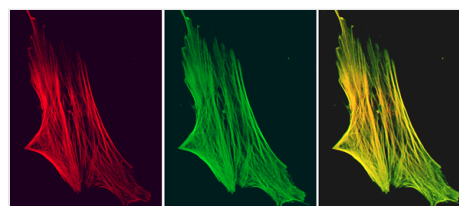
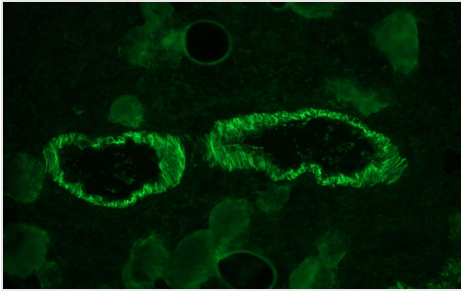
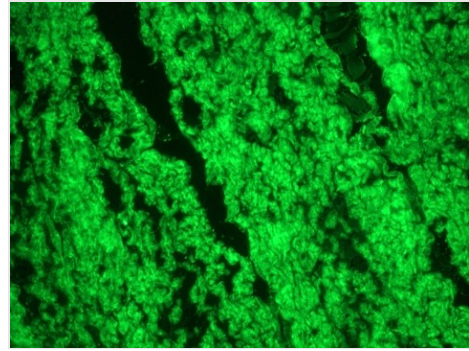

IF (Immunofluorescence)

Figure 7. Indirect immunofluorescence staining of a cultured human fibroblast, showing colocalization of smoothelin (red fluorescence; as detected by R4A) and actin (green fluorescence).



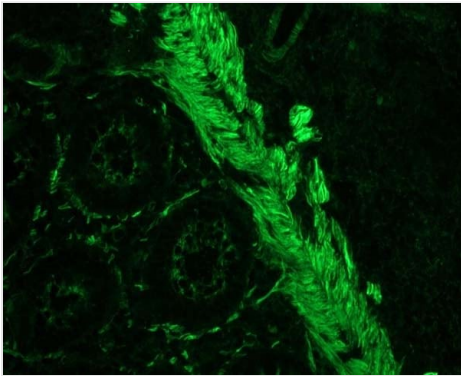
IHC (Immunohistochemistry)

Figure 6. Smooth muscle cells in swine colon as detected (R4A; dilution 1:100).



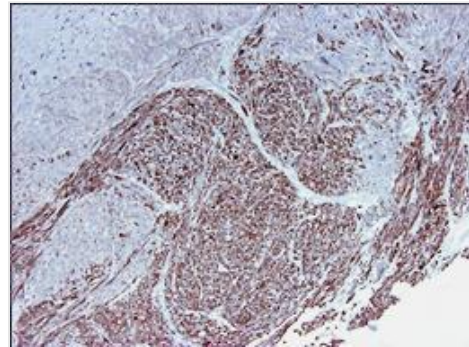
IHC (Immunohistochemistry)

Figure 5. Smooth muscle cells in swine colon as detected (R4A; dilution 1:100).



IHC (Immunohistochemistry)

Figure 4. Smooth muscle cells in swine colon as detected (R4A; dilution 1:100).



IHC (Immunohistochemistry)

Figure 3. Immunohistochemistry of R4A on paraffin section of human smooth muscle.

ADDITIONAL INFORMATION

Related Product Information for anti-SMTN antibody	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. Cells 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 and cells in culture show a filamentous organization of smoothelin colocalizing with actin stress fibers. In immunoblots two molecular weight isoforms are detected i.e. a 59 kDa isoform specific for visceral SMC (smoothelin A), and an isoform with a molecular weight of approximately 100 kDa in vascular SMC (smoothelin B). Human smoothelin is encoded by a single copy gene which is located on chromosome 22.
Product Categories/Family for anti-SMTN antibody	Cytoskeletal; Cardiovascular; Cell differentiation; Cytoskeleton
References	van der Loop, F. T., Schaart, G., Timmer, E. D., Ramaekers, F. C., and van Eys, G. J. (1996). Smoothelin, a novel cytoskeletal protein specific for smooth muscle cells, J Cell Biol 134, 401-11. Wehrens, X. H., Mies, B., Gimona, M., Ramaekers, F. C., Van Eys, G. J., and Small, J. V. (1997). Localization of smoothelin in avian smooth muscle and identification of a vascular-specific isoform, FEBS Lett 405, 315-20. van der Loop, F. T., Gabbiani, G., Kohnen, G., Ramaekers, F. C., and van Eys, G. J. (1997). Differentiation of smooth muscle cells in Human blood vessels as defined by smoothelin, a novel marker for the contractile phenotype, Arterioscler Thromb Vasc Biol 17, 665-71. Christen, T., Bochaton-Piallat, M. L., Neuville, P., Rensen, S., Redard, M., van Eys, G., and Gabbiani, G. (1999). Cultured porcine coronary artery smooth muscle cells. A new model with advanced differentiation, Circ Res 85, 99-107. Johansson, B., Eriksson, A., Ramaekers, F., and Thornell, L. (1999). Smoothelin in adult and developing Human arteries and myocardium, Histochem Cell Biol 112, 291-9. Johansson, B., Eriksson, A., Ramaekers, F., and Thornell, L. E. (1999). Smoothelin and intermediate filament proteins in Human aortocoronary saphenous vein bypass grafts, Histochem J 31, 723-7. Deruiter, M. C., Rensen, S. S., Coolen, G. P., Hierck, B. P., Bergwerff, M., Debie, W. M., Gittenberger-De Groot, A. C., and Van Eys, G. J. (2001). Smoothelin expression during Chicken embryogenesis: detection of an embryonic isoform, Dev Dyn 221, 460-3. Council, L., Hameed, O. (2009). Differential expression of immunohistochemical markers in bladder smooth muscle and myofibroblasts, and the potential utility of desmin, smoothelin, and vimentin in staging of bladder carcinoma Modern Pathology 22, 639-50. Coco, D.P., Hirsch, M.S., Hornick, J.L. (2009). Smoothelin is a specific marker for smooth muscle neoplasms of the gastrointestinal tract. Am J Surg Pathol 33, 1795-1801.

NCBI AND UNIPROT INFORMATION

NCBI GI #	21707799
NCBI GeneID	6525
UniProt Accession #	P53814; O00569; O95769; O95937; Q8N4H8; Q8WWW1; Q8WWW2; Q9P1S8; Q9UIT1; Q9UIT2; Q59F18
Molecular Weight	99,059 Da
NCBI Official Full Name	Smoothelin
NCBI Official Synonym Full Names	smoothelin
NCBI Official Symbol	SMTN
NCBI Official Synonym Symbols	FLJ35168; FLJ35365; FLJ35620; FLJ38597
NCBI Protein Information	smoothelin; OTTHUMP00000199381; OTTHUMP00000199382; OTTHUMP00000199383
UniProt Protein Name	Smoothelin
UniProt Gene Name	SMTN
UniProt Synonym Gene Names	SMSMO
UniProt Entry Name	SMTN_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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