

smoothelin (m): 293T Lysate: sc-126019

BACKGROUND

The cytoskeletal protein smoothelin is highly conserved among vertebrates and is expressed exclusively by contractile smooth muscle cells where it localizes to the filament network. Smoothelin associates with Actin stress fibers but does not interact with Desmin. At least two isoforms of smoothelin are produced by alternative splicing. The short isoform lacks amino acids 1-544 at the amino-terminus of the long isoform. The short isoform is expressed in visceral muscle tissue, including intestine and stomach, but not in brain, while the long isoform is expressed in all vascularized organs. In the vascular system, smoothelin expression is limited to large veins and arteries capable of pulsatile contraction. As a marker for the highly differentiated contractile smooth muscle cell, smoothelin expression is useful for studying vascular malformation and injury. The gene encoding human smoothelin maps to chromosome 22q12.2.

REFERENCES

1. 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: 401-411.
2. van Eys, G.J., Völler, M.C., Timmer, E.D., Wehrens, X.H., Small, J.V., Schalken, J.A., Ramaekers, F.C. and van der Loop, F.T. 1997. Smoothelin expression characteristics: development of a smooth muscle cell *in vitro* system and identification of a vascular variant. *Cell Struct. Funct.* 22: 65-72.
3. 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: 665-671.
4. Johnson, J.L., van Eys, G.J., Angelini, G.D. and George, S.J. 2001. Injury induces dedifferentiation of smooth muscle cells and increased matrix-degrading metalloproteinase activity in human saphenous vein. *Arterioscler. Thromb. Vasc. Biol.* 21: 1146-1151.
5. Rensen, S.S., Thijssen, V.L., De Vries, C.J., Doevendans, P.A., Detera-Wadleigh, S.D. and Van Eys, G.J. 2002. Expression of the smoothelin gene is mediated by alternative promoters. *Cardiovasc. Res.* 55: 850-863.

CHROMOSOMAL LOCATION

Genetic locus: Smtn (mouse) mapping to 11 A1.

PRODUCT

smoothelin (m): 293T Lysate represents a lysate of mouse smoothelin transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

smoothelin (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive smoothelin antibodies. Recommended use: 10-20 µl per lane.

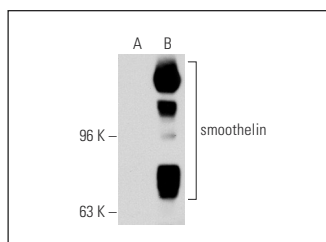
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

smoothelin (R4A): sc-23883 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse smoothelin expression in smoothelin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

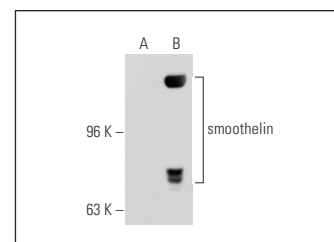
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



smoothelin (R4A): sc-23883. Western blot analysis of smoothelin expression in non-transfected: sc-117752 (A) and mouse smoothelin transfected: sc-126019 (B) 293T whole cell lysates.



smoothelin (2Q1120): sc-73042. Western blot analysis of smoothelin expression in non-transfected: sc-117752 (A) and mouse smoothelin transfected: sc-126019 (B) 293T whole cell lysates.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.