

# smoothelin (C-20): sc-20481

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: SMTN (human) mapping to 22q12.2; Smtn (mouse) mapping to 11 A1.

## SOURCE

smoothelin (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of smoothelin of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20481 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

smoothelin (C-20) is recommended for detection of smoothelin long and short isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

smoothelin (C-20) is also recommended for detection of smoothelin long and short isoforms in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for smoothelin siRNA (h): sc-36512, smoothelin siRNA (m): sc-36513, smoothelin shRNA Plasmid (h): sc-36512-SH, smoothelin shRNA Plasmid (m): sc-36513-SH, smoothelin shRNA (h) Lentiviral Particles: sc-36512-V and smoothelin shRNA (m) Lentiviral Particles: sc-36513-V.

Molecular Weight of smoothelin short isoform: 59 kDa.

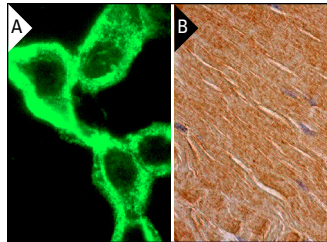
Molecular Weight of smoothelin long isoform: 110 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



smoothelin (C-20): sc-20481. Immunofluorescence staining of methanol-fixed BC3H1 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of squamous epithelial cells (B).

## SELECT PRODUCT CITATIONS

1. Teng, B., et al. 2006. Isolation and characterization of coronary endothelial and smooth muscle cells from A1 adenosine receptor-knockout mice. *Am. J. Physiol. Heart Circ. Physiol.* 290: H1713-H1720.
2. Sörensen, I., et al. 2009. DLL1-mediated Notch activation regulates endothelial identity in mouse fetal arteries. *Blood* 113: 5680-5688.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **smoothelin (C-8): sc-376902** or **smoothelin (R4A): sc-23883**, our highly recommended monoclonal alternatives to smoothelin (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **smoothelin (C-8): sc-376902**.