

# SMTNL1 (B-7): sc-390589

## 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. SMTNL1 (smoothelin-like 1), also known as CHASM, is a 457 amino acid protein containing a CH (calponin-homology) domain. Belonging to the smoothelin family of smooth muscle-specific proteins, SMTNL1 may be involved in contractile activity. The gene encoding SMTNL1 maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

## REFERENCES

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2. Kurita, R., et al. 2004. A novel smoothelin-like, Actin-binding protein required for choroidal fissure closure in zebrafish. *Biochem. Biophys. Res. Commun.* 313: 1092-1100.
3. Taylor, T.D., et al. 2006. Human chromosome 11 DNA sequence and analysis including novel gene identification. *Nature* 440: 497-500.
4. Wooldridge, A.A., et al. 2008. Deletion of the protein kinase A/protein kinase G target SMTNL1 promotes an exercise-adapted phenotype in vascular smooth muscle. *J. Biol. Chem.* 283: 11850-11859.
5. Ishida, H., et al. 2008. Solution structure of the calponin homology (CH) domain from the smoothelin-like 1 protein: a unique apocalmodulin-binding mode and the possible role of the C-terminal type-2 CH-domain in smooth muscle relaxation. *J. Biol. Chem.* 283: 20569-20578.
6. Haste, S.C., et al. 2008. Wilms tumour: prognostic factors, staging, therapy and late effects. *Pediatr. Radiol.* 38: 2-17.
7. Borman, M.A., et al. 2009. The role of the calponin homology domain of smoothelin-like 1 (SMTNL1) in myosin phosphatase inhibition and smooth muscle contraction. *Mol. Cell. Biochem.* 327: 93-100.

## CHROMOSOMAL LOCATION

Genetic locus: SMTNL1 (human) mapping to 11q12.1; Smtnl1 (mouse) mapping to 2 D.

## SOURCE

SMTNL1 (B-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 260-283 of SMTNL1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390589 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

SMTNL1 (B-7) is recommended for detection of SMTNL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SMTNL1 siRNA (h): sc-97014, SMTNL1 siRNA (m): sc-153640, SMTNL1 shRNA Plasmid (h): sc-97014-SH, SMTNL1 shRNA Plasmid (m): sc-153640-SH, SMTNL1 shRNA (h) Lentiviral Particles: sc-97014-V and SMTNL1 shRNA (m) Lentiviral Particles: sc-153640-V.

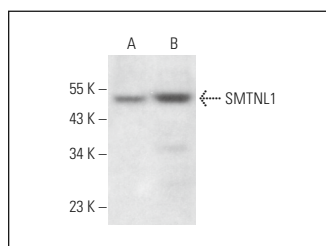
Molecular Weight of SMTNL1: 49 kDa.

Positive Controls: human skeletal muscle extract: sc-363776, BC<sub>3</sub>H1 cell lysate: sc-2299 or NIH/3T3 whole cell lysate: sc-2210.

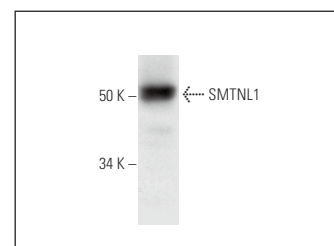
## RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



SMTNL1 (B-7): sc-390589. Western blot analysis of SMTNL1 expression in BC<sub>3</sub>H1 (A) and NIH/3T3 (B) whole cell lysates.



SMTNL1 (B-7): sc-390589. Western blot analysis of SMTNL1 expression in human skeletal muscle tissue extract.

## 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) for detailed protocols and support products.