

smoothelin (B-1): sc-166292

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 1-456 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 (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-31 at the N-terminus of smoothelin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-166292 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

smoothelin (B-1) is recommended for detection of smoothelin long isoform 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).

smoothelin (B-1) is also recommended for detection of smoothelin long isoform in additional species, including equine and canine.

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.

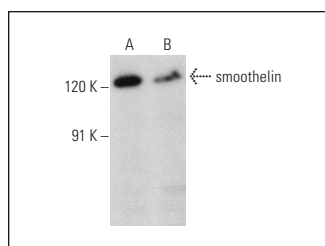
Molecular Weight of smoothelin long isoform: 110 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, NBT-II whole cell lysate: sc-395046 or smoothelin (h): 293T Lysate: sc-113663.

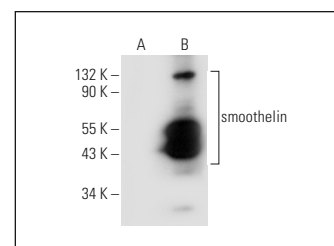
RECOMMENDED SUPPORT REAGENTS

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



smoothelin (B-1): sc-166292. Western blot analysis of smoothelin expression in KNRK (A) and NBT-II (B) whole cell lysates.



smoothelin (B-1): sc-166292. Western blot analysis of smoothelin expression in non-transfected: sc-117752 (A) and human smoothelin transfected: sc-113663 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Wang, M., et al. 2022. Electrospun biodegradable α-amino acid-substituted poly(organophosphazene) fiber mats for stem cell differentiation towards vascular smooth muscle cells. *Polymers* 14: 1555.

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 for detailed protocols and support products.



See **smoothelin (C-8): sc-376902** for smoothelin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.