

caveolin-3 (P-18): sc-30753

BACKGROUND

Caveolae (also known as plasmalemmal vesicles) are 50-100 nM flask-shaped membranes that represent a subcompartment of the plasma membrane. On the basis of morphological studies, caveolae have been implicated to function in the transcytosis of various macromolecules (including LDL) across capillary endothelial cells, uptake of small molecules via potocytosis and the compartmentalization of certain signaling molecules including G protein-coupled receptors. Three proteins, caveolin-1, caveolin-2 and caveolin-3, have been identified as principal components of caveolae. Two forms of caveolin-1, designated α and β , share a distinct but overlapping cellular distribution and differ by an amino terminal 31 amino acid sequence which is absent from the β isoform. Caveolin-1 shares 31% identity with caveolin-2 and 65% identity with caveolin-3 at the amino acid level. Functionally, the three proteins differ in their interactions with heterotrimeric G protein isoforms.

REFERENCES

1. Fan, J.Y., et al. 1983. Morphological changes of the 3T3-L1 fibroblast plasma membrane upon differentiation to the adipocyte form. *J. Cell Sci.* 61: 219-230.
2. Rothberg, K.G., et al. 1992. Caveolin, a protein component of caveolae membrane coats. *Cell* 68: 673-682.
3. Zurzolo, C., et al. 1994. VIP21/caveolin, glycosphingolipid clusters and the sorting of glyco-sylphosphatidylinositol-anchored proteins in epithelial cells. *EMBO J.* 13: 42-53.
4. Lisanti, M.P., et al. 1994. Characterization of caveolin-rich membrane domains isolated from an endothelial-rich source: implications for human disease. *J. Cell Biol.* 126: 111-126.
5. Tang, Z., et al. 1996. Molecular cloning of caveolin-3, a novel member of the caveolin gene family expressed predominantly in muscle. *J. Biol. Chem.* 271: 2255-2261.
6. Li, S., et al. 1996. Phosphorylation of caveolin by Src tyrosine kinases. The α -isoform of caveolin is selectively phosphorylated by v-Src *in vivo*. *J. Biol. Chem.* 271: 3863-3868.
7. Song, K.S., et al. 1996. Expression of caveolin-3 in skeletal, cardiac, and smooth muscle cells. Caveolin-3 is a component of the sarcolemma and co-fractionates with dystrophin and dystrophin-associated glycoproteins. *J. Biol. Chem.* 271: 15160-15165.
8. Scherer, P.E., et al. 1996. Identification, sequence and expression of caveolin-2 defines a caveolin gene family. *Proc. Natl. Acad. Sci. USA* 93: 131-135.

CHROMOSOMAL LOCATION

Genetic locus: CAV3 (human) mapping to 3p25.3; Cav3 (mouse) mapping to 6 E3.

SOURCE

caveolin-3 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of caveolin-3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-30753 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

caveolin-3 (P-18) is recommended for detection of caveolin-3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

caveolin-3 (P-18) is also recommended for detection of caveolin-3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for caveolin-3 siRNA (h): sc-29943, caveolin-3 siRNA (m): sc-29944, caveolin-3 siRNA (r): sc-106997, caveolin-3 shRNA Plasmid (h): sc-29943-SH, caveolin-3 shRNA Plasmid (m): sc-29944-SH, caveolin-3 shRNA Plasmid (r): sc-106997-SH, caveolin-3 shRNA (h) Lentiviral Particles: sc-29943-V, caveolin-3 shRNA (m) Lentiviral Particles: sc-29944-V and caveolin-3 shRNA (r) Lentiviral Particles: sc-106997-V.

Molecular Weight of caveolin-3: 20-25 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, rat heart extract: sc-2393 or C2C12 whole cell lysate: sc-364188.

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.

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 or our catalog for detailed protocols and support products.