SANTA CRUZ BIOTECHNOLOGY, INC.

caveolin-3 (H-100): sc-28828

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The Power to Question

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. 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.
4. 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.
5. 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.
6. 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, CAV1 (human) mapping to 7q31.2; Cav3 (mouse) mapping to 6 E3, Cav1 (mouse) mapping to 6 A2.

SOURCE

caveolin-3 (H-100) is a rabbit polyclonal antibody raised against amino acids 52-151 mapping at the C-terminus of caveolin-3 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.

STORAGE

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

APPLICATIONS

caveolin-3 (H-100) is recommended for detection of caveolin-3, and to a lesser extent, caveolin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

caveolin-3 (H-100) is also recommended for detection of caveolin-3, and to a lesser extent, caveolin-1 in additional species, including equine, canine, bovine and porcine.

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

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Chen, Y., et al. 2005. Dimethylarginine dimethylaminohydrolase and endothelial dysfunction in failing hearts. Am. J. Physiol. Heart Circ. Physiol. 289: H2212-H2219.
2. Jeftinija, D.M., et al. 2007. The CaV 1.2 Ca^{2+} channel is expressed in sarcolemma of type I and IIa myofibers of adult skeletal muscle. Muscle Nerve 36: 482-490.

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.