SANTA CRUZ BIOTECHNOLOGY, INC.

caveolin-3 (A-3): sc-5310

SANTA CRUZ BIOTECHNOLOGY

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, the 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.

REFERENCE

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.

CHROMOSOMAL LOCATION

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

SOURCE

caveolin-3 (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-40 at the N-terminus of caveolin-3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

caveolin-3 (A-3) is available conjugated to agarose (sc-5310 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-5310 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5310 PE), fluorescein (sc-5310 FITC), Alexa Fluor® 488 (sc-5310 AF488), Alexa Fluor® 546 (sc-5310 AF546), Alexa Fluor® 594 (sc-5310 AF594) or Alexa Fluor® 647 (sc-5310 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-5310 AF680) or Alexa Fluor® 790 (sc-5310 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-5310 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

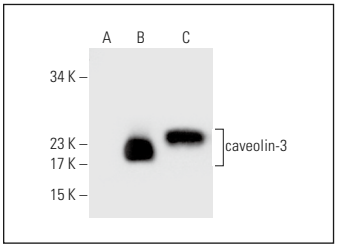
caveolin-3 (A-3) is recommended for detection of caveolin-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

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.

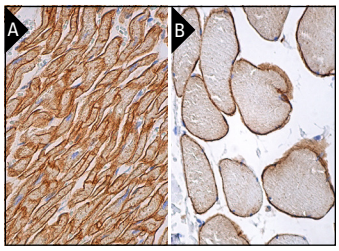
Molecular Weight of caveolin-3: 20-25 kDa.

Positive Controls: caveolin-3 (m): 293T Lysate: sc-119043, SJRH30 cell lysate: sc-2287 or rat heart extract: sc-2393.

DATA



caveolin-3 (A-3): sc-5310. Western blot analysis of caveolin-3 expression in non-transfected 293T: sc-117752 (**A**), mouse caveolin-3 transfected 293T: sc-119043 (**B**) and SJRH30 (**C**) whole cell lysates.



caveolin-3 (A-3): sc-5310. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing membrane and cytoplasmic staining of myocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing membrane staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Matallanas, D., et al. 2003. Differences on the inhibitory specificities of H-Ras, K-Ras, and N-Ras (N17) dominant negative mutants are related to their membrane microlocalization. J. Biol. Chem. 278: 4572-4581.
2. Seemann, E., et al. 2017. Deciphering caveolar functions by syndapin III KO-mediated impairment of caveolar invagination. Elife 6: e29854.
3. Pfleger, J., et al. 2018. G protein-coupled receptor kinase 2 contributes to impaired fatty acid metabolism in the failing heart. J. Mol. Cell. Cardiol. 123: 108-117.
4. Dewulf, M., et al. 2019. Dystrophy-associated caveolin-3 mutations reveal that caveolae couple IL6/Stat3 signaling with mechanosensing in human muscle cells. Nat. Commun. 10: 1974.

RESEARCH USE

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