

p-caveolin-1 (G-10): sc-373836

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 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. Caveolin-1 is presumed to be phosphorylated by c-Src kinase, although little is known about this phosphorylation event. Tyrosine 14 of caveolin-1 undergoes regulated phosphorylation during growth factor signaling and is constitutively phosphorylated in Src- and Abl-transformed cells.

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.

CHROMOSOMAL LOCATION

Genetic locus: CAV1 (human) mapping to 7q31.2; Cav1 (mouse) mapping to 6 A2.

SOURCE

p-caveolin-1 (G-10) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Tyr 14 phosphorylated caveolin-1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-caveolin-1 (G-10) is available conjugated to agarose (sc-373836 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373836 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373836 PE), fluorescein (sc-373836 FITC), Alexa Fluor® 488 (sc-373836 AF488), Alexa Fluor® 546 (sc-373836 AF546), Alexa Fluor® 594 (sc-373836 AF594) or Alexa Fluor® 647 (sc-373836 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373836 AF680) or Alexa Fluor® 790 (sc-373836 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

p-caveolin-1 (G-10) is recommended for detection of Tyr 14 phosphorylated caveolin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

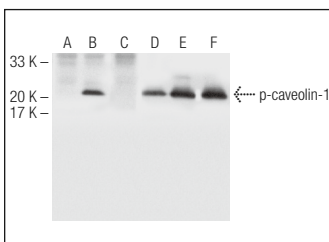
p-caveolin-1 (G-10) is also recommended for detection of correspondingly phosphorylated caveolin-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for caveolin-1 siRNA (h): sc-29241, caveolin-1 siRNA (m): sc-29942, caveolin-1 siRNA (r): sc-106996, caveolin-1 shRNA Plasmid (h): sc-29241-SH, caveolin-1 shRNA Plasmid (m): sc-29942-SH, caveolin-1 shRNA Plasmid (r): sc-106996-SH, caveolin-1 shRNA (h) Lentiviral Particles: sc-29241-V, caveolin-1 shRNA (m) Lentiviral Particles: sc-29942-V and caveolin-1 shRNA (r) Lentiviral Particles: sc-106996-V.

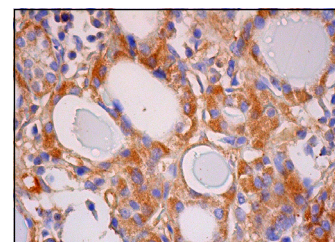
Molecular Weight of p-caveolin-1: 22 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A-431 whole cell lysate: sc-2201 or A-431 + pervanadate cell lysate: sc-24654.

DATA



Western blot analysis of caveolin-1 phosphorylation in untreated (A,D), pervanadate treated (B,E) and pervanadate and lambda protein phosphatase (sc-200312A) treated (C,F) ECV304 whole cell lysates. Antibodies tested include p-caveolin-1 (G-10): sc-373836 (A,B,C) and caveolin-1 (N-20): sc-894 (D,E,F).



p-caveolin-1 (G-10): sc-373836. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Kozyulina, P.Y., et al. 2015. Prometastatic NEDD9 regulates individual cell migration via caveolin-1-dependent trafficking of integrins. *Mol. Cancer Res.* 13: 423-438.
2. Dohi, T., et al. 2019. The interplay of mechanical stress, strain, and stiffness at the keloid periphery correlates with increased caveolin-1/ROCK signaling and scar progression. *Plast. Reconstr. Surg.* 144: 58e-67e.

RESEARCH USE

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

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