SANTA CRUZ BIOTECHNOLOGY, INC.

p-caveolin-1 (Tyr 14): sc-14037

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 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: CAV1 (human) mapping to 7q31.1; Cav1 (mouse) mapping to 6 A2.

SOURCE

p-caveolin-1 (Tyr 14) is available as either goat (sc-14037) or rabbit (sc-14037-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Tyr 14 of caveolin-1 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.

Blocking peptide available for competition studies, sc-14037 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

p-caveolin-1 (Tyr 14) is recommended for detection of Tyr 14 phosphorylated 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).

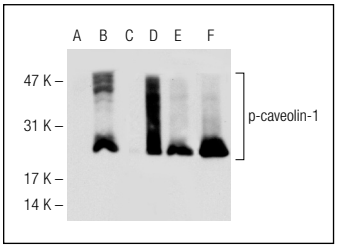
p-caveolin-1 (Tyr 14) is also recommended for detection of correspondingly phosphorylated Tyr on caveolin-1 in additional species, including equine, canine, bovine and porcine.

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.

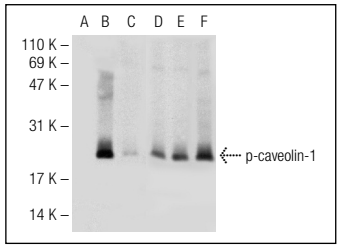
Molecular Weight of p-caveolin-1: 22 kDa.

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

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**) A-431 whole cell lysates. Antibodies tested include p-caveolin-1 (Tyr 14)-R: sc-14037-R (**A**,**B**,**C**) and caveolin-1 (N-20): sc-894 (**D**,**E**,**F**).



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SELECT PRODUCT CITATIONS

1. Kim, H., et al. 2006. Increased phosphorylation of caveolin-1 in the spinal cord of Lewis rats with experimental autoimmune encephalomyelitis. Neurosci. Lett. 402: 76-80.
2. Kim, H., et al. 2007. Increased phosphorylation of caveolin-1 in the spinal cord of irradiated rats. J. Vet. Sci. 8: 323-327.
3. Shin, T. 2007. Increases in the phosphorylated form of caveolin-1 in the spinal cord of rats with clip compression injury. Brain Res. 1141: 228-234.
4. Galvagni, F., et al. 2007. Vascular endothelial growth factor receptor-3 activity is modulated by its association with caveolin-1 on endothelial membrane. Biochemistry 46: 3998-4005.
5. Kim, H., et al. 2007. Increased phosphorylation of caveolin-1 in the sciatic nerves of Lewis rats with experimental autoimmune neuritis. Brain Res. 1137: 153-160.