SANTA CRUZ BIOTECHNOLOGY, INC.

vinculin (V284): sc-59803

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Focal adhesions were identified as areas within the plasma membrane of tissue culture cells that adhere tightly to the underlying substrate. *In vivo,* these regions are involved in the adhesion of cells to the extracellular matrix. Paxillin and vinculin are cytoskeletal, focal adhesion proteins that are components of a protein complex which links the Actin network to the plasma membrane. Vinculin binding sites have been identified on other cytoskeletal proteins, including Talin and α-actinin. In addition, vinculin, Talin and α-actinin each contain Actin binding sites. Expression of vinculin and Talin have been shown to be affected by the level of Actin expression. α-actinin has been shown to link Actin to integrins in the plasma membrane through interactions with the vinculin and Talin complex or by a direct interaction with integrin.

CHROMOSOMAL LOCATION

Genetic locus: VCL (human) mapping to 10q22.2; Vcl (mouse) mapping to 14 A3.

SOURCE

vinculin (V284) is a mouse monoclonal antibody raised against vinculin from platelets of human 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.

APPLICATIONS

vinculin (V284) is recommended for detection of vinculin 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for vinculin siRNA (h): sc-29524, vinculin siRNA (m): sc-36819, vinculin siRNA (r): sc-270542, vinculin shRNA Plasmid (h): sc-29524-SH, vinculin shRNA Plasmid (m): sc-36819-SH, vinculin shRNA Plasmid (r): sc-270542-SH, vinculin shRNA (h) Lentiviral Particles: sc-29524-V, vinculin shRNA (m) Lentiviral Particles: sc-36819-V and vinculin shRNA (r) Lentiviral Particles: sc-270542-V.

Molecular Weight of vinculin: 117 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

STORAGE

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

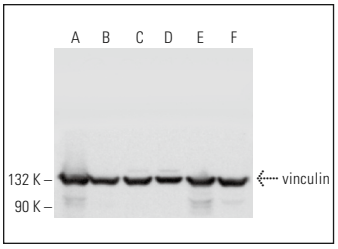
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

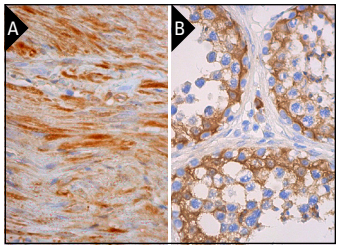
RESEARCH USE

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

DATA



vinculin (V284): sc-59803. Western blot analysis of vinculin expression in HeLa (**A**), HEL 92.1.7 (**B**), NIH/3T3 (**C**), EOC 20 (**D**), C6 (**E**) and PC-12 (**F**) whole cell lysates.



vinculin (V284): sc-59803. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts (**B**).

SELECT PRODUCT CITATIONS

1. Fernandes, H., et al. 2009. The role of collagen crosslinking in differentiation of human mesenchymal stem cells and MC3T3-E1 cells. Tissue Eng. Part A 15: 3857-3867.
2. Lampi, M.C., et al. 2016. Simvastatin ameliorates matrix stiffness-mediated endothelial monolayer disruption. PLoS ONE 11: e0147033.
3. Bernhardt, A., et al. 2017. Inflammatory cell infiltration and resolution of kidney inflammation is orchestrated by the cold-shock protein Y-box binding protein-1. Kidney Int. 92: 1157-1177.
4. Reckzeh, E.S., et al. 2019. Inhibition of glucose transporters and glutaminase synergistically impairs tumor cell growth. Cell Chem. Biol. 26: 1214-1228.e25.
5. Shah, A., et al. 2020. YB-1 mediates TNF-induced pro-survival signaling by regulating NFκB activation. Cancers 12: 2188.
6. Bernhardt, A., et al. 2021. High salt diet-induced proximal tubular phenotypic changes and sodium-glucose cotransporter-2 expression are coordinated by cold shock Y-box binding protein-1. FASEB J. 35: e21912.
7. Li, C., et al. 2022. Identification and validation of TRIM25 as a glucose metabolism regulator in prostate cancer. Int. J. Mol. Sci. 23: 9325.
8. Lindquist, J.A., et al. 2023. Cold shock domain protein DbpA orchestrates tubular cell damage and interstitial fibrosis in inflammatory kidney disease. Cells 12: 1426.
9. Wilkus-Adamczyk, K., et al. 2024. Tumor hypoxia evidences the differential regulation of Mdm2-p53 axis by PTEN in tumor derived vs. normal endothelial cells. Sci. Rep. 14: 31747.