SANTA CRUZ BIOTECHNOLOGY, INC.

VAC14 (C-10): sc-271831

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phosphatidylinositol 3,5-bisphosphate (PI(3,5)P2) is a signaling molecule that exists as a minor component of cell membranes and is essential for the distinguishing of cellular compartments. The synthesis of PI(3,5)P2 is regulated by a number of proteins that are involved in intracellular trafficking and assembly events throughout the cell. VAC14, also known as TAX1BP2 (Tax1-binding protein 2) or TRX, is a 782 amino acid protein that contains six HEAT repeats and exists as part of a regulatory complex with FIG4. Expressed ubiquitously, VAC14 works with FIG4 to control the synthesis of PI(3,5)P2, specifically mediating the activation of PIP5KIII, a kinase involved in the regulation of PI(3,5)P2 activity. The gene encoding VAC14 maps to human chromosome 16q22.1, which houses over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Mireskandari, A., et al. 1996. Isolation of a cDNA clone, TRX encoding a human T cell lymphotrophic virus type-I TAX1 binding protein. Biochim. Biophys. Acta 1306: 9-13.
2. Sbrissa, D., et al. 2004. A mammalian ortholog of *Saccharomyces cerevisiae* VAC14 that associates with and upregulates PIKfyve phosphoinositide 5-kinase activity. Mol. Cell. Biol. 24: 10437-10447.
3. Lemaire, J.F. and McPherson, P.S. 2006. Binding of VAC14 to neuronal nitric oxide synthase: characterisation of a new internal PDZ-recognition motif. FEBS Lett. 580: 6948-6954.
4. Ching, Y.P., et al. 2006. The retroviral oncoprotein TAX targets the coiled-coil centrosomal protein TAX1BP2 to induce centrosome overduplication. Nat. Cell Biol. 8: 717-724.

CHROMOSOMAL LOCATION

Genetic locus: VAC14 (human) mapping to 16q22.1; Vac14 (mouse) mapping to 8 E1.

SOURCE

VAC14 (C-10) is a mouse monoclonal antibody raised against amino acids 421-681 mapping within an internal region of VAC14 of human origin.

PRODUCT

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

VAC14 (C-10) is available conjugated to agarose (sc-271831 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271831 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271831 PE), fluorescein (sc-271831 FITC), Alexa Fluor® 488 (sc-271831 AF488), Alexa Fluor® 546 (sc-271831 AF546), Alexa Fluor® 594 (sc-271831 AF594) or Alexa Fluor® 647 (sc-271831 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271831 AF680) or Alexa Fluor® 790 (sc-271831 AF790), 200 µg/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

VAC14 (C-10) is recommended for detection of VAC14 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for VAC14 siRNA (h): sc-72206, VAC14 siRNA (m): sc-72207, VAC14 shRNA Plasmid (h): sc-72206-SH, VAC14 shRNA Plasmid (m): sc-72207-SH, VAC14 shRNA (h) Lentiviral Particles: sc-72206-V and VAC14 shRNA (m) Lentiviral Particles: sc-72207-V.

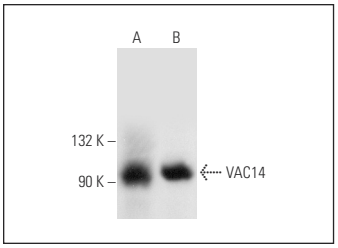
Molecular Weight of VAC14: 88 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 whole cell lysate: sc-2227 or K-562 whole cell lysate: sc-2203.

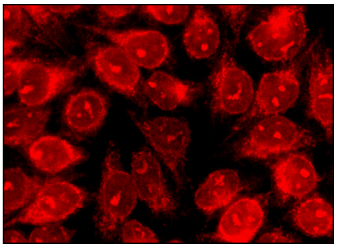
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



VAC14 (C-10): sc-271831. Western blot analysis of VAC14 expression in Hep G2 (**A**) and K-562 (**B**) whole cell lysates.



VAC14 (C-10): sc-271831. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Currinn, H., et al. 2016. APP controls the formation of $PI(3,5)P_2$ vesicles through its binding of the PIKfyve complex. Cell. Mol. Life Sci. 73: 393-408.
2. Wang, R., et al. 2021. Genetic screens identify host factors for SARS-CoV-2 and common cold coronaviruses. Cell 184: 106-119.e14.

RESEARCH USE

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

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