

VAC14 (m2): 293T Lysate: sc-124533

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 6 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 16, which houses over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Mireskandari, A., Reid, R.L., Kashanchi, F., Dittmer, J., Li, W.B. and Brady, J.N. 1996. Isolation of a cDNA clone, TRX encoding a human T cell lymphotropic virus type-I Tax1 binding protein. *Biochim. Biophys. Acta.* 1306: 9-13.
2. Sbrissa, D., Ikononov, O.C., Strakova, J., Dondapati, R., Mlak, K., Deeb, R., Silver, R. and Shisheva, A. 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., Chan, S.F., Jeang, K.T. and Jin, D.Y. 2006. The retroviral oncoprotein Tax targets the coiled-coil centrosomal protein TAX1BP2 to induce centrosome overduplication. *Nat. Cell Biol.* 8: 717-724.
5. Sbrissa, D., Ikononov, O.C., Fu, Z., Ijuin, T., Gruenberg, J., Takenawa, T. and Shisheva, A. 2007. Core protein machinery for mammalian phosphatidylinositol 3,5-bisphosphate synthesis and turnover that regulates the progression of endosomal transport. Novel Sac phosphatase joins the ArPIKfyve-PIKfyve complex. *J. Biol. Chem.* 282: 23878-23891.
6. Zhang, Y., Zolov, S.N., Chow, C.Y., Slutsky, S.G., Richardson, S.C., Piper, R.C., Yang, B., Nau, J.J., Westrick, R.J., Morrison, S.J., Meisler, M.H. and Weisman, L.S. 2007. Loss of VAC14, a regulator of the signaling lipid phosphatidylinositol 3,5-bisphosphate, results in neurodegeneration in mice. *Proc. Natl. Acad. Sci. USA* 104: 17518-17523.
7. Jin, N., Chow, C.Y., Liu, L., Zolov, S.N., Bronson, R., Davisson, M., Petersen, J.L., Zhang, Y., Park, S., Duex, J.E., Goldowitz, D., Meisler, M.H. and Weisman, L.S. 2008. VAC14 nucleates a protein complex essential for the acute interconversion of PI3P and PI(3,5)P₂ in yeast and mouse. *EMBO J.* 27: 3221-3234.
8. Online Mendelian Inheritance in Man, OMIM[™]. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 604632. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Vac14 (mouse) mapping to 8 E1.

PRODUCT

VAC14 (m2): 293T Lysate represents a lysate of mouse VAC14 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

VAC14 (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive VAC14 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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