SANTA CRUZ BIOTECHNOLOGY, INC.

Vav3 (F-11): sc-518196

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Vav family of Rho guanine nucleotide exchange factors (GEFs) orchestrate signaling events following lymphocyte antigen receptor activation. Vav3, like Vav (also known as Vav1 or p95Vav), undergoes tyrosine phosphorylation downstream of T cell receptor cross-linkage, and subsequently interacts with two adaptor molecules, SLP76 and 3BP2. Following these events, however, the paths of Vav and Vav3 diverge; Vav affects IL-2 promotor activity, while Vav3 impacts gene transcription linked to serum response element (SRE). Furthermore, Vav3 expression follows a cell cycle-dependent pattern, with transient upregulation occuring during mitosis. Encforced Vav3 expression leads to the appearance of multinucleate cells, implicating a role for Vav3 in the control of cytokinesis.

REFERENCES

1. Romero, F., et al. 1996. $p95^{vav}$ associates with the nuclear protein Ku-70. Mol. Cell. Biol. 16: 37-44.
2. Adam, L., et al. 2000. Interferon-α signaling promotes nucleus-to-cytoplasmic redistribution of p95Vav, and formation of a multisubunit complex involving Vav, Ku80, and Tyk2. Biochem. Biophys. Res. Commun. 267: 692-696.
3. Fujikawa, K., et al. 2002. Vav3 is regulated during the cell cycle and effects cell division. Proc. Natl. Acad. Sci. USA 99: 4313-4318.
4. Fujikawa, K., et al. 2003. Vav1/2/3-null mice define an essential role for Vav family proteins in lymphocyte development and activation but a differential requirement in MAPK signaling in T and B cells. J. Exp. Med. 198: 1595-1608.
5. Zakaria, S., et al. 2004. Differential regulation of TCR-mediated gene transcription by Vav family members. J. Exp. Med. 199: 429-434.
6. Dong, Z., et al. 2006. Vav3 oncogene is overexpressed and regulates cell growth and androgen receptor activity in human prostate cancer. Mol. Endocrinol. 20: 2315-2325.
7. Sauzeau, V., et al. 2006. Vav3 proto-oncogene deficiency leads to sympathetic hyperactivity and cardiovascular dysfunction. Nat. Med. 12: 841-845.
8. Colomba, A., et al. 2007. Activation of Rac1 and the exchange factor Vav3 are involved in NPM-ALK signaling in anaplastic large cell lymphomas. Oncogene 27: 2728-2736.

CHROMOSOMAL LOCATION

Genetic locus: VAV3 (human) mapping to 1p13.3.

SOURCE

Vav3 (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 122-146 of Vav3 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Vav3 (F-11) is recommended for detection of Vav3 of 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 Vav3 siRNA (h): sc-44187, Vav3 shRNA Plasmid (h): sc-44187-SH and Vav3 shRNA (h) Lentiviral Particles: sc-44187-V.

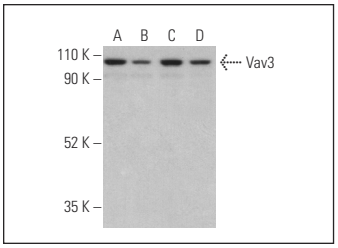
Molecular Weight of Vav3: 98 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HUV-EC-C whole cell lysate: sc-364180 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY 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 L-Agarose: sc-2336 (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



Vav3 (F-11): sc-518196. Western blot analysis of Vav3 expression in MCF7 (**A**), HUV-EC-C (**B**), MDA-MB-231 (**C**) and Jurkat (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

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.

PROTOCOLS

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