SANTA CRUZ BIOTECHNOLOGY, INC.

p-Vav (Tyr 174)-R: sc-16408-R

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Vav proteins are guanine nucleotide exchange factors for Rho family GTPases which activate pathways leading to Actin cytoskeletal rearrangements and transcriptional alterations. Vav proteins contain several protein binding domains which can link cell surface receptors to downstream signaling proteins. Vav3 is a Ros receptor protein tyrosine kinase (RPTK) interacting protein and has a broad tissue expression profile that is distinct from those of Vav and Vav2. Vav3 mediates RPTK signaling and regulates GTPase activity, its native and mutant forms are able to modulate cell morphology, and it has the potential to induce cell transformation. For example, Vav3 induces marked membrane ruffles and microspikes in NIH/3T3 cells. Vav works as a GDP/GTP exchange factor for Rac GTPases, thereby facilitating the transition of these proteins from the inactive (GDP-bound) into the active (GTP-bound) state. The stimulation of Vav exchange activity during cell signaling is mediated by tyrosine phosphorylation. The residue, Tyrosine 174, is phosphorylated following the stimulation of mitogenic and antigenic receptors. This phosphorylation event is conserved in Vav2 and Vav3, the other two members of the Vav family.

CHROMOSOMAL LOCATION

Genetic locus: VAV1 (human) mapping to 19p13.3; Vav1 (mouse) mapping to 17 D.

SOURCE

p-Vav (Tyr 174)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 174 phosphorylated Vav of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16408 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Vav (Tyr 174)-R is recommended for detection of Tyr 174 phosphorylated Vav 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).

Suitable for use as control antibody for Vav siRNA (h): sc-29517, Vav siRNA (m): sc-29518, Vav shRNA Plasmid (h): sc-29517-SH, Vav shRNA Plasmid (m): sc-29518-SH, Vav shRNA (h) Lentiviral Particles: sc-29517-V and Vav shRNA (m) Lentiviral Particles: sc-29518-V.

Positive Controls: Jurkat + PMA cell lysate: sc-24718 or Jurkat + pervanadate cell lysate: sc-24716.

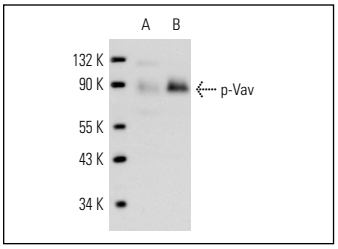
STORAGE

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.

DATA



p-Vav (Tyr 174)-R: sc-16408-R. Western blot analysis of Vav phosphorylation in untreated (**A**) and PMA-treated (**B**) Jurkat whole cell lysates.

SELECT PRODUCT CITATIONS

1. Madureira, P., et al. 2005. Murine γ-herpesvirus 68 latency protein M2 binds to Vav signaling proteins and inhibits B-cell receptor-induced cell cycle arrest and apoptosis in WEHI-231 B cells. J. Biol. Chem. 280: 37310-37318.
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3. Samayawardhena, L.A., et al. 2008. Protein-tyrosine phosphatase α regulates stem cell factor-dependent c-Kit activation and migration of mast cells. J. Biol. Chem. 283: 29175-29185.
4. Waibler, Z., et al. 2008. Signaling signatures and functional properties of anti-human CD28 superagonistic antibodies. PLoS ONE 3: e1708.
5. Gorla, L., et al. 2009. Proteomics study of medullary thyroid carcinomas expressing RET germ-line mutations: identification of new signaling elements. Mol. Carcinog. 48: 220-231.
6. Stevens, C.N., et al. 2010. T-cell receptor early signalling complex activation in response to interferon-α receptor stimulation. Biochem. J. 428: 429-437.
7. Delaney, M.K., et al. 2012. The role of Rac1 in glycoprotein Ib-IX-mediated signal transduction and integrin activation. Arterioscler. Thromb. Vasc. Biol. 32: 2761-2768.
8. Gupta, R., et al. 2013. Glutamate induces neutrophil cell migration by activating class I metabotropic glutamate receptors. Amino Acids 44: 757-767.