SANTA CRUZ BIOTECHNOLOGY, INC.

p-Vav (89.Tyr 174): sc-135786

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 Vav-2 and Vav-3, the other two members of the Vav family.

REFERENCES

1. Movilla, N. and Bustelo, X.R. 1999. Biological and regulatory properties of Vav3, a new member of the Vav family of oncoproteins. Mol. Cell. Biol. 19: 7870-7885.
2. Lopez-Lago, M., Lee, H., Cruz, C., Movilla, N. and Bustelo, X.R. 2000. Tyrosine phosphorylation mediates both activation and downmodulation of the biological activity of Vav. Mol. Cell. Biol. 20: 1678-1691.
3. Moores, S.L., Selfors, L.M., Fredericks, J., Breit, T., Fujikawa, K., Alt, F.W., Brugge, J.S. and Swat, W. 2000. Vav family proteins couple to diverse cell surface receptors. Mol. Cell. Biol. 20: 6364-6373.
4. Zeng, L., Sachdev, P., Yan, L., Chan, J.L., Trenkle, T., McClelland, M., Welsh, J. and Wang, L.H. 2000. Vav3 mediates receptor protein tyrosine kinase signaling, regulates GTPase activity, modulates cell morphology, and induces cell transformation. Mol. Cell. Biol. 20: 9212-9224.
5. Trenkle, T., McClelland, M., Adlkofer, K. and Welsh, J. 2000. Major transcript variants of Vav3, a new member of the Vav family of guanine nucleotide exchange factors. Gene 245: 139-149.
6. Billadeau, D.D., Mackie, S.M., Schoon, R.A. and Leibson, P.J. 2000. Specific subdomains of Vav differentially affect T cell and NK cell activation. J. Immunol. 164: 3971-3981.

CHROMOSOMAL LOCATION

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

SOURCE

p-Vav (89.Tyr 174) is a mouse monoclonal antibody raised against a short amino acid sequence containing Tyr 174 phosphorylated Vav of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Vav (89.Tyr 174) 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.

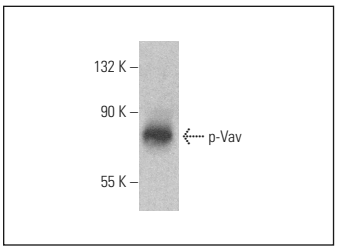
Molecular Weight of p-Vav: 95 kDa.

Positive Controls: Jurkat + pervanadate cell lysate: sc-24716, Raji whole cell lysate: sc-364236 or Jurkat + PMA cell lysate: sc-24718.

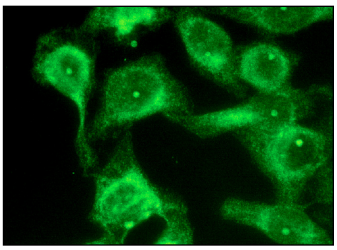
RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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



p-Vav (89.Tyr 174): sc-135786. Western blot analysis of Vav phosphorylation in Raji whole cell lysate.



p-Vav (89.Tyr 174): sc-135786. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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. Not for resale.

PROTOCOLS

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