SANTA CRUZ BIOTECHNOLOGY, INC.

p-Vav2 (Tyr 172)-R: sc-16409-R



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.

REFERENCES

- Movilla, N., et al. 1999. Biological and regulatory properties of Vav3, a new member of the Vav family of oncoproteins. Mol. Cell. Biol. 19: 7870-7885.
- Lopez-Lago, M., et al. 2000. Tyrosine phosphorylation mediates both activation and downmodulation of the biological activity of Vav. Mol. Cell. Biol. 20: 1678-1691.
- Moores, S.L., et al. 2000. Vav family proteins couple to diverse cell surface receptors. Mol. Cell. Biol. 20: 6364-6373.
- Zeng, L., et al. 2000. Vav3 mediates receptor protein tyrosine kinase signaling, regulates GTPase activity, modulates cell morphology, and induces cell transformation. Mol. Cell. Biol. 20: 9212-9224.
- Trenkle, T., et al. 2000. Major transcript variants of Vav3, a new member of the Vav family of guanine nucleotide exchange factors. Gene 245: 139-149.
- Billadeau, D.D., et al. 2000. Specific subdomains of Vav differentially affect T cell and NK cell activation. J. Immunol. 164: 3971-3981.

CHROMOSOMAL LOCATION

Genetic locus: VAV2 (human) mapping to 9q34.2; Vav2 (mouse) mapping to 2 A3.

SOURCE

p-Vav2 (Tyr 172)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 172 phosphorylated Vav2 of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

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

Blocking peptide available for competition studies, sc-16409 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Vav2 (Tyr 172)-R is recommended for detection of Tyr 172 phosphorylated Vav2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

p-Vav2 (Tyr 172)-R is also recommended for detection of correspondingly phosphorylated Vav2 in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for Vav2 siRNA (h): sc-41738, Vav2 siRNA (m): sc-41739, Vav2 shRNA Plasmid (h): sc-41738-SH, Vav2 shRNA Plasmid (m): sc-41739-SH, Vav2 shRNA (h) Lentiviral Particles: sc-41738-V and Vav2 shRNA (m) Lentiviral Particles: sc-41739-V.

Molecular Weight of p-Vav2: 101 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Chen, X., et al. 2007. Integrin $\alpha 1\beta 1$ controls reactive oxygen species synthesis by negatively regulating epidermal growth factor receptor-mediated Rac activation. Mol. Cell. Biol. 27: 3313-3326.

RESEARCH USE

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

PROTOCOLS

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