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ProductInformation

Anti-WAVE-1 (C-terminal)
produced in rabbit, affinity isolated antibody

Catalog Number **W2142**

Product Description

Anti-WAVE-1 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 481-496 located near the C-terminus of human WAVE-1 (GeneID: 8936), conjugated to KLH. This sequence is identical in several species including mouse, rat, bovine, and dog WAVE-1, and not found in other WAVE isoforms. Anti-WAVE-1 is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-WAVE-1 (C-terminal) recognizes WAVE-1 by immunoblotting, ~75 kDa. Staining of the WAVE-1 band is specifically inhibited by the immunizing peptide.

Actin dynamics play a central role in cellular function. Reorganization of the actin cytoskeleton via actin polymerization and depolymerization is required for diverse cellular processes including cell morphology, cytokinesis, cell adhesion, and motility. These processes are regulated by the Rho family of small GTPases Cdc42 and Rac. The WASP (Wiskott-Aldrich syndrome protein) and Ena/VASP-family of proteins regulate actin polymerization and cytoskeletal organization by acting as scaffolding proteins to relay signals from Rho small GTPases to the Arp2/3 complex that promotes the formation and branching of actin filaments.[1-4] The WASP family members include WASP, N-WASP, and WAVE (WASP-family verprolin homologous protein) proteins. WAVE proteins also play key roles in the induction of various actin remodeling processes including membrane ruffling and lamellipodia formation. WAVE proteins (also termed SCAR, WASF proteins), include three isoforms WAVE-1, WAVE-2, and WAVE-3.[5-7] Expression of WAVE-1 and WAVE-3 isoforms is restricted to the brain, while WAVE-2 is ubiquitously expressed.[8, 9] The primary difference in the activity of WASP and WAVE proteins is determined by their specificity for small GTPases. WASP and N-WASP are direct and specific effectors of Cdc42 and are thought to mediate most of the cytoskeletal effects of Cdc42.[10, 11] In contrast to WASP/N-WASP, WAVE proteins are thought to act downstream of Rac.

WAVE-1-3 have structures similar to WASP and N-WASP. These include two conserved domains: a WAVE homology domain (WHD), also known as SCAR homology domain (SHD), a C-terminal acidic domain that binds to the Arp2/3 complex, and a central core domain composed of proline-rich sequences that interact with cofilin and various SH3 proteins. WAVE proteins bind to phosphatidylinositol-3,4,5 triphosphate (PI-3,4,5P_3) formed by PI3-kinase, thus facilitating WAVE translocation to the plasma membrane. WAVE proteins are thought to mediate Rac activity indirectly via the target protein IRSp53 or by binding to a macromolecular complex that includes PIR121, Nap1, Abi, and HSPC300 proteins.[11-14] This complex appears to regulate WAVE activity, and interaction of the WAVE-Arp2/3 complex with F-actin in order to induce actin polymerization following Rac activation.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile
Immunoblotting: a working concentration of 0.25-0.5 µg/mL is recommended, using a rat brain cytosolic fraction (S1), and 0.5-1.0 µg/mL using a mouse brain cytosolic fraction (S1).

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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