# Phospho-VAV1 (Tyr174) Antibody / Proto-oncogene vav [clone 32V35] (FY13388)

| Catalog No. | Formulation | Size |
|---|---|---|
| FY13388 | Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA | 100 ul |

Recombinant RABBIT MONOCLONAL

**Bulk quote request**

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| **Availability** | 2-3 weeks |
| **Species Reactivity** | Human |
| **Format** | Liquid |
| **Clonality** | Recombinant Rabbit Monoclonal |
| **Isotype** | Rabbit IgG |
| **Clone Name** | 32V35 |
| **Purity** | Affinity-chromatography |
| **Buffer** | Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA. |
| **UniProt** | P15498 |
| **Applications** | Western Blot : 1:500-1:2000<br>Immunocytochemistry/Immunofluorescence : 1:50-1:200 |
| **Limitations** | This Phospho-VAV1 (Tyr174) antibody is available for research use only. |

## Description

Phospho-VAV1 (Tyr174) antibody detects VAV1 phosphorylated at tyrosine 174, encoded by the VAV1 gene. VAV1 is a guanine nucleotide exchange factor that regulates Rho family GTPases and is essential for cytoskeletal reorganization, immune cell activation, and signal transduction. Phospho-VAV1 (Tyr174) antibody provides researchers with a highly specific reagent to study immune signaling, lymphocyte activation, and phosphorylation-dependent regulation of guanine nucleotide exchange factors.

VAV1 contains multiple functional domains, including a calponin homology domain, Dbl homology domain, pleckstrin homology domain, SH2 domain, and SH3 domains. Research using Phospho-VAV1 (Tyr174) antibody has shown that phosphorylation at Tyr174 within the acidic domain is a critical step in its activation. This phosphorylation relieves autoinhibition and promotes exchange activity toward Rho family GTPases such as Rac1 and RhoA, enabling downstream cytoskeletal rearrangements and signaling cascades.

Studies with Phospho-VAV1 (Tyr174) antibody have revealed that Tyr174 phosphorylation is mediated by Src family kinases, particularly Lck and Fyn, following T cell receptor or B cell receptor stimulation. This modification serves as a key molecular switch that couples receptor engagement with actin cytoskeletal remodeling, calcium signaling, and transcription factor activation. As such, phosphorylation at Tyr174 is indispensable for adaptive immune responses.

Dysregulation of VAV1 phosphorylation contributes to immune dysfunction and cancer. Research using Phospho-VAV1 (Tyr174) antibody has shown that aberrant activation promotes excessive immune cell signaling, contributing to autoimmunity. Conversely, impaired phosphorylation limits lymphocyte activation, leading to immunodeficiency. In oncology, VAV1 mutations and altered phosphorylation have been implicated in T cell leukemias and lymphomas, where they drive uncontrolled signaling and proliferation.

Beyond immune signaling, VAV1 phosphorylation influences neuronal development and angiogenesis. Studies with Phospho-VAV1 (Tyr174) antibody have demonstrated that VAV1 regulates axon guidance and endothelial cell migration, extending its functional relevance beyond the immune system. These findings highlight the broad biological importance of Tyr174 phosphorylation.

Phospho-VAV1 (Tyr174) antibody is widely applied in western blotting, immunoprecipitation, and immunofluorescence. Western blotting distinguishes phosphorylated from total VAV1, immunoprecipitation identifies complexes assembled during receptor signaling, and immunofluorescence demonstrates actin cytoskeletal remodeling in activated lymphocytes. These approaches make Phospho-VAV1 (Tyr174) antibody indispensable in immunology research.

By supplying validated Phospho-VAV1 (Tyr174) antibody reagents, NSJ Bioreagents supports studies into immune cell signaling, cytoskeletal biology, and disease. Detection of VAV1 phosphorylated at Tyr174 provides insight into how phosphorylation regulates guanine nucleotide exchange factors and immune responses.

## Application Notes

Optimal dilution of the Phospho-VAV1 (Tyr174) antibody should be determined by the researcher.

## Immunogen

A synthesized peptide derived from human Phospho-VAV1 (Y174) was used as the immunogen for the Phospho-VAV1 (Tyr174) antibody.

## Storage

Store the Phospho-VAV1 (Tyr174) antibody at -20oC.