Phospho-Caveolin 1 (pTyr14) Antibody / CAV1 [clone 32C49] (FY13264)

Catalog No.	Formulation	Size
FY13264	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

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32C49
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	Q03135
Applications	Western Blot : 1:500-1:2000
Limitations	This Phospho-Caveolin 1 (pTyr14) antibody is available for research use only.

Description

Phospho-Caveolin 1 (pTyr14) antibody detects Caveolin 1 phosphorylated at tyrosine 14, encoded by the CAV1 gene. Caveolin 1 is an integral membrane protein and principal component of caveolae, small invaginations in the plasma membrane involved in endocytosis, cholesterol homeostasis, and signal transduction. Phosphorylation at tyrosine 14 is a key regulatory modification that alters Caveolin 1 function and interactions with signaling molecules. Phospho-Caveolin 1 (pTyr14) antibody provides researchers with a powerful tool for investigating membrane dynamics and signaling pathways regulated by caveolae.

Caveolin 1 acts as a scaffolding protein that organizes signaling complexes at the plasma membrane. Research using Phospho-Caveolin 1 (Tyr14) antibody has demonstrated that phosphorylation at tyrosine 14 is mediated primarily by Src family kinases in response to growth factors, mechanical stress, or cellular adhesion events. This modification induces conformational changes that modulate protein interactions and influence downstream signaling. By altering binding

partners, phosphorylation at Tyr14 affects processes such as focal adhesion turnover, cell migration, and proliferation.

Studies with Phospho-Caveolin 1 (pTyr14) antibody have shown that this modification regulates integrin signaling and cytoskeletal dynamics. Phosphorylated Caveolin 1 promotes disassembly of focal adhesions, allowing cells to migrate during wound healing, angiogenesis, and cancer metastasis. It also participates in mechanotransduction, enabling cells to sense and respond to changes in extracellular matrix stiffness or fluid shear stress. These findings highlight the versatility of Caveolin 1 phosphorylation as a regulatory switch in cell biology.

Dysregulation of Caveolin 1 phosphorylation has been linked to multiple diseases. Research using Phospho-Caveolin 1 (Tyr14) antibody has revealed altered phosphorylation in cancer, where excessive modification promotes tumor cell invasion and metastasis. In cardiovascular disease, abnormal Caveolin 1 phosphorylation disrupts endothelial function and contributes to vascular pathology. In pulmonary fibrosis, changes in Caveolin 1 phosphorylation status affect fibroblast activation and extracellular matrix remodeling. These diverse roles emphasize its broad clinical relevance.

Phospho-Caveolin 1 (pTyr14) antibody is widely used in western blotting, immunohistochemistry, and immunofluorescence. Western blotting distinguishes phosphorylated Caveolin 1 from its unmodified form, immunohistochemistry identifies activated signaling domains in tissues, and immunofluorescence visualizes phosphorylated Caveolin 1 within caveolae at the plasma membrane. These applications make the antibody indispensable for cell signaling and membrane biology research.

By providing validated Phospho-Caveolin 1 (pTyr14) antibody reagents, NSJ Bioreagents supports studies into membrane signaling, cytoskeletal regulation, and disease processes. Detection of Caveolin 1 phosphorylation at tyrosine 14 offers a highly specific marker of caveolae mediated signaling activity.

Application Notes

Optimal dilution of the Phospho-Caveolin 1 (pTyr14) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-Caveolin-1 (Y14) was used as the immunogen for the Phospho-Caveolin 1 (pTyr14) antibody.

Storage

Store the Phospho-Caveolin 1 (Tyr14) antibody at -20oC.