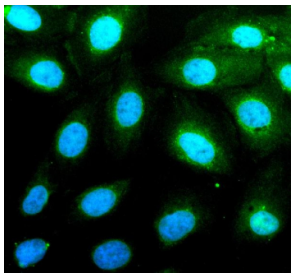
PAG1 Antibody / Cbp / Phosphoprotein associated with glycosphingolipid-enriched microdomains 1 (FY13067)

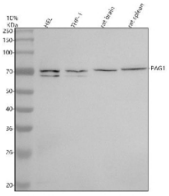
Catalog No.	Formulation	Size
FY13067	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

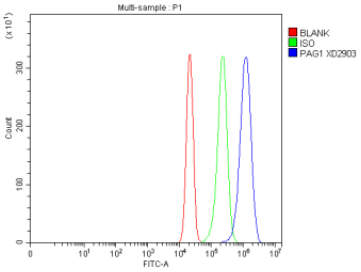
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9NWQ8
Localization	Cytoplasm, plasma membrane
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This PAG1 antibody is available for research use only.



Immunofluorescent staining of PAG1 using anti-PAG1 antibody (green). PAG1 was detected in an immunocytochemical section of U2OS cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-PAG1 antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of PAG1 using anti-PAG1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human HEL whole cell lysates, Lane 2: human THP-1 whole cell lysates, Lane 3: rat brain tissue lysates, Lane 4: rat spleen tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PAG1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. Western blot analysis of PAG1 (Cbp) expression in human and rodent samples. Although PAG1 has a predicted molecular weight of ~47 kDa, it consistently migrates at ~68-72 kDa on SDS-PAGE due to its dual palmitoylation and extensive tyrosine phosphorylation. Human lysates display a characteristic doublet, corresponding to differently phosphorylated forms of PAG1, while rodent tissues show a single dominant species at similar apparent size.



Flow Cytometry analysis of RT4 cells using anti-PAG1 antibody. Overlay histogram showing RT4 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-PAG1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

PAG1 antibody detects Phosphoprotein associated with glycosphingolipid-enriched microdomains 1, also called Transmembrane phosphoprotein Cbp, a transmembrane adaptor protein that regulates Src family kinase signaling and immune receptor function. The UniProt recommended name is Phosphoprotein associated with glycosphingolipid-enriched microdomains 1 (PAG1). This scaffold protein, also known as Csk-binding protein (CBP), localizes to lipid rafts in the plasma membrane and mediates inhibitory signaling by recruiting the tyrosine kinase CSK to suppress Src family kinases such as LCK and FYN.

Functionally, PAG1 antibody identifies a 432-amino-acid type I transmembrane protein containing multiple tyrosine residues that undergo phosphorylation following receptor activation. Phosphorylated PAG1 binds CSK, leading to phosphorylation and inactivation of Src kinases at their C-terminal regulatory tyrosine. This mechanism provides a critical negative feedback loop that fine-tunes T cell receptor (TCR) and B cell receptor (BCR) signaling, maintaining immune homeostasis.

The PAG1 gene is located on chromosome 8q21.13 and is expressed in hematopoietic cells, neurons, and various epithelial tissues. In T lymphocytes, PAG1 is enriched in membrane microdomains and associates with LAT, LCK, and CD45, modulating activation thresholds and signaling kinetics. Beyond the immune system, PAG1 participates in neuronal development, cell adhesion, and stress response signaling pathways.

Pathologically, dysregulated PAG1 expression contributes to altered immune signaling and oncogenic kinase activation. Downregulation of PAG1 has been observed in certain lymphomas and leukemias, allowing unchecked Src kinase activity. Conversely, overexpression may suppress cell motility and proliferation. Research using PAG1 antibody supports investigations into lipid raft-associated signaling, immune synapse organization, and signal attenuation mechanisms.

PAG1 antibody is suitable for use in western blotting, immunoprecipitation, and immunofluorescence to detect native or phosphorylated PAG1 in cell lysates or tissue samples. It supports studies focused on immune receptor regulation, kinase signaling networks, and cancer biology. NSJ Bioreagents offers validated PAG1 antibody reagents designed for reliable

performance in Src signaling and membrane microdomain research.

Structurally, PAG1 contains an extracellular immunoglobulin-like domain, a single transmembrane segment, and a cytoplasmic tail rich in tyrosine motifs. Its lipid raft localization depends on palmitoylation and interaction with glycosphingolipids. This antibody aids in elucidating PAG1's scaffolding functions that link plasma membrane signaling to intracellular kinase regulation.

Application Notes

Optimal dilution of the PAG1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the N-terminus of human PAG1 was used as the immunogen for the PAG1 antibody.

Storage

After reconstitution, the PAG1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.