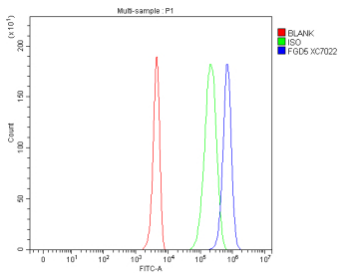
FGD5 Antibody / FYVE, RhoGEF and PH domain-containing protein 5 (FY12385)

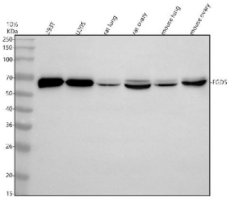
Catalog No.	Formulation	Size
FY12385	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
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	Q6ZNL6
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This FGD5 antibody is available for research use only.



Flow Cytometry analysis of 293T cells using anti-FGD5 antibody. Overlay histogram showing 293T cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-FGD5 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.



Western blot analysis of FGD5 using anti-FGD5 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human U2OS whole cell lysates, Lane 3: rat lung tissue lysates, Lane 4: rat ovary tissue lysates, Lane 5: mouse lung tissue lysates, Lane 6: mouse ovary 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-FGD5 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. FGD5 (~160 kDa predicted) was detected near ~68 kDa, consistent with published reports describing endogenous short isoforms or proteolytically processed catalytic fragments of FGD5 in endothelial and cancer cells. The apparent doublet likely reflects differential phosphorylation or processing of this active form.

Description

The FGD5 antibody targets FYVE, RhoGEF, and PH domain-containing protein 5, a guanine nucleotide exchange factor encoded by the FGD5 gene. This protein belongs to the FGD family of Rho guanine nucleotide exchange factors (GEFs) that activate CDC42, a small GTPase involved in cytoskeletal organization, vesicle trafficking, and angiogenesis. FYVE, RhoGEF, and PH domain-containing protein 5 is enriched in endothelial cells and plays a critical role in vascular development and remodeling. The FGD5 antibody enables detection and quantification of this signaling molecule, supporting research into endothelial cell biology and vascular homeostasis.

FGD5 contains multiple conserved domains, including a FYVE domain that binds phosphatidylinositol 3-phosphate, a Dbl homology (DH) domain that catalyzes GTP loading of CDC42, and a pleckstrin homology (PH) domain that anchors the protein to membranes. These domains coordinate spatial activation of CDC42 at specific cellular sites, promoting actin cytoskeletal rearrangements necessary for cell migration and tube formation. The FGD5 antibody provides a key reagent for examining how this protein localizes to endosomes and plasma membrane regions during angiogenic signaling.

Endothelial FGD5 regulates cell polarity, barrier integrity, and lumen formation by activating CDC42 and downstream effectors such as PAK and N-WASP. Its expression is induced by vascular growth factors, including VEGF and FGF, which drive endothelial morphogenesis. The FGD5 antibody supports studies into these processes, helping delineate how Rho GTPase signaling orchestrates angiogenic sprouting and vessel stabilization. Loss of FGD5 function leads to impaired vascular network formation, highlighting its essential developmental role.

Beyond angiogenesis, FYVE, RhoGEF, and PH domain-containing protein 5 contributes to intracellular trafficking and signal transduction in other tissues, including kidney and brain. Abnormal FGD5 expression has been linked to vascular pathologies, diabetic retinopathy, and cancer progression, where altered endothelial behavior supports tumor angiogenesis. The FGD5 antibody allows researchers to quantify expression changes under pathological conditions and explore its regulatory influence on endothelial plasticity.

The FGD5 antibody performs well in western blotting, immunofluorescence, and immunohistochemistry, yielding distinct cytoplasmic and membrane-associated staining. NSJ Bioreagents provides this antibody as a validated reagent for consistent performance across model systems. By facilitating detailed analysis of FYVE, RhoGEF, and PH domain-containing protein 5 expression and function, the FGD5 antibody supports vascular biology research and contributes to understanding the molecular mechanisms driving angiogenesis and endothelial cell dynamics.

Application Notes

Optimal dilution of the FGD5 antibody should be determined by the researcher.

Immunogen

E.coli-derived human FGD5 recombinant protein (Position: Q705-L1462) was used as the immunogen for the FGD5 antibody.

Storage

After reconstitution, the FGD5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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