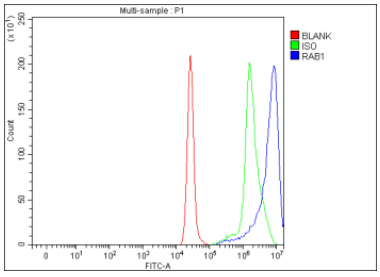
RAB1A Antibody / Ras-related protein Rab-1A (FY13241)

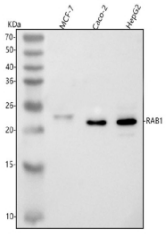
Catalog No.	Formulation	Size
FY13241	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
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	P62820
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RAB1A antibody is available for research use only.



Flow Cytometry analysis of cells using anti-RAB1A antibody. Overlay histogram showing 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-RAB1A 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 (Red line) was also used as a control.



Western blot analysis of RAB1A using anti-RAB1A antibody. Lane 1: human MCF-7 whole cell lysates, Lane 2: human Caco-2 whole cell lysates, Lane 3: human HepG2 whole cell 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-RAB1A 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 enhanced chemiluminescent. RAB1A is detected at ~22-23 kDa across lines; in MCF7 the band migrates slightly higher, consistent with cell-typeâ€“dependent prenylation/phosphorylation and membrane association that modestly slow SDS-PAGE mobility.

Description

RAB1A antibody detects Ras-related protein Rab-1A, a small GTPase involved in vesicular trafficking between the endoplasmic reticulum (ER) and Golgi apparatus. The UniProt recommended name is Ras-related protein Rab-1A (RAB1A). This essential member of the Rab family regulates the formation, movement, and docking of transport vesicles that ensure protein secretion and Golgi organization.

Functionally, RAB1A antibody identifies a 205-amino-acid GTP-binding protein that cycles between active GTP-bound and inactive GDP-bound states. Active RAB1A recruits effector proteins such as p115, GM130, and COPII components to mediate vesicle tethering and fusion at the cis-Golgi membrane. It coordinates early secretory pathway events and maintains ER-to-Golgi transport fidelity, supporting proper protein maturation and trafficking.

The RAB1A gene is located on chromosome 2p14 and is ubiquitously expressed in eukaryotic cells, with particularly high expression in secretory tissues. Its activity is regulated by GEFs (guanine nucleotide exchange factors) and GAPs (GTPase-activating proteins) that control the GTP/GDP cycle and subcellular localization.

Pathologically, RAB1A dysregulation affects autophagy, neurodegeneration, and cancer progression. Overexpression enhances cell proliferation and Golgi reorganization in tumor cells, while impaired RAB1A function contributes to ER stress and defective autophagosome formation. Research using RAB1A antibody supports studies in membrane trafficking, Golgi function, and oncogenic signaling.

RAB1A antibody is validated for western blotting, immunofluorescence, and immunohistochemistry to detect small GTPases. NSJ Bioreagents provides RAB1A antibody reagents optimized for research in vesicle transport, protein secretion, and cellular trafficking dynamics.

Structurally, Ras-related protein Rab-1A contains conserved GTP-binding motifs (GxxxxGK[S/T], DxxG, NKxD, and SAx) and a C-terminal geranylgeranylation site that anchors it to membranes. Its switch regions undergo conformational changes upon GTP binding, enabling interaction with effectors that mediate vesicle transport. This antibody allows exploration of RAB1A's role in ER-Golgi trafficking and its contribution to secretory pathway regulation.

Application Notes

Optimal dilution of the RAB1A antibody should be determined by the researcher.

Immunogen

E.coli-derived human RAB1A recombinant protein (Position: R74-Q199) was used as the immunogen for the RAB1A antibody.

Storage

After reconstitution, the RAB1A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.