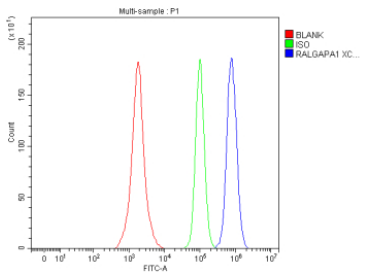
RALGAPA1 Antibody / Ral GTPase-activating protein subunit alpha-1 (FY12744)

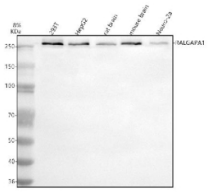
Catalog No.	Formulation	Size
FY12744	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q6GYQ0
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RALGAPA1 antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-RALGAPA1 antibody. Overlay histogram showing SH-SY5Y 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-RALGAPA1 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 GARNL1/RALGAPA1 using anti-RALGAPA1 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: rat brain tissue lysates, Lane 4: mouse brain tissue lysates, Lane 5: mouse Neuro-2a 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-RALGAPA1 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. The expected ~230 kDa protein migrates slightly above the 250 kDa marker, consistent with the known electrophoretic properties and post-translational modifications of full-length RALGAPA1.

Description

RALGAPA1 antibody detects Ras-related protein Ral GTPase-activating protein subunit alpha-1, a large scaffolding and regulatory protein that modulates RalA and RalB small GTPase activity. Encoded by the RALGAPA1 gene on chromosome 14q13.2, this protein forms part of the heterodimeric RalGAP complex together with RALGAPB, acting as a GTPase-activating protein (GAP) that inactivates Ral GTPases by promoting GTP hydrolysis. Through this mechanism, RALGAPA1 negatively regulates Ral-mediated signaling pathways involved in vesicle trafficking, cytoskeletal dynamics, and cell proliferation.

RALGAPA1 localizes to the cytoplasm and membranes, where it integrates signals from Ras and Ral GTPase pathways. By controlling RalA and RalB activity, RALGAPA1 influences exocyst complex formation, endocytosis, and autophagy. Loss or suppression of RALGAPA1 enhances Ral GTPase activation and promotes tumorigenesis, cell motility, and invasion. In neurons, RALGAPA1 contributes to vesicular transport and synaptic regulation, while in muscle tissue it participates in trafficking of insulin-responsive vesicles. Mutations in RALGAPA1 have been associated with neurodevelopmental delay and epilepsy, underscoring its importance in neuronal signaling.

The RALGAPA1 antibody is used in signal transduction, neurobiology, and cancer research to investigate Ral GTPase regulation and membrane trafficking. Western blot analysis identifies a 190 kilodalton band corresponding to the alpha subunit of the RalGAP complex, while immunofluorescence reveals cytoplasmic and membrane-associated staining. This antibody enables detailed characterization of RALGAPA1 expression and function in signaling networks that intersect Ras and Rho GTPase pathways.

Mechanistically, RALGAPA1 serves as a key inhibitor of Ral-dependent pathways that link receptor tyrosine kinases to exocytosis and cytoskeletal remodeling. Its GAP activity provides spatial and temporal control over Ral signaling to prevent aberrant growth or migration. The RALGAPA1 antibody is essential for studying how deregulation of RalGAP signaling contributes to cancer progression and neurological dysfunction. NSJ Bioreagents offers this antibody validated for its applications, for reliable use in human and model systems.

Application Notes

Optimal dilution of the RALGAPA1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GARNL1/RALGAPA1 recombinant protein (Position: S503-H1729) was used as the immunogen for the RALGAPA1 antibody.

Storage

After reconstitution, the RALGAPA1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.