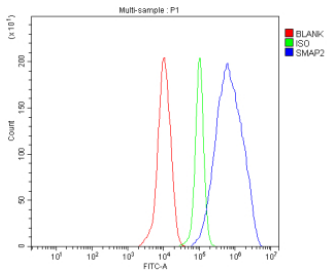
SMAP2 Antibody / Small ArfGAP 2 (FY13074)

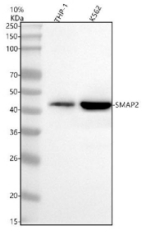
Catalog No.	Formulation	Size
FY13074	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

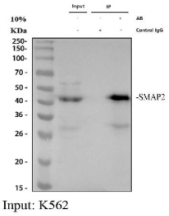
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q8WU79
Applications	Western Blot : 0.25-0.5ug/ml Immunoprecipitation : 2-4ug/500ug of lysate Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SMAP2 antibody is available for research use only.



Flow Cytometry analysis of THP-1 cells using anti-SMAP2 antibody. Overlay histogram showing THP-1 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-SMAP2 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 SMAP2 using anti-SMAP2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human THP-1 whole cell lysates, Lane 2: human K562 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-SMAP2 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. A major band is detected at approximately 42 kDa, slightly below the predicted molecular weight of 47 kDa. This difference is consistent with previous reports and reflects the faster electrophoretic migration of the mature SMAP2 protein, which lacks extensive post-translational modifications and may undergo minor N-terminal processing. The observed band corresponds to the full-length SMAP2 protein.



Input: K562

Immunoprecipitating (IP) SMAP2 in K562 whole cell lysate. Western blot analysis of SMAP2 using anti-SMAP2 antibody; Lane 1: K562 whole cell lysates (30ug); Lane 2: Rabbit control IgG instead of anti-SMAP2 antibody in K562 whole cell lysate; Lane 3: anti-SMAP2 antibody (2ug) + K562 whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-SMAP2 antibody at a dilution of 0.5 ug/ml and probed with a mouse anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A major band is detected at approximately 42 kDa, slightly below the predicted molecular weight of 47 kDa. This difference is consistent with previous reports and reflects the faster electrophoretic migration of the mature SMAP2 protein, which lacks extensive post-translational modifications and may undergo minor N-terminal processing. The observed band corresponds to the full-length SMAP2 protein.

Description

SMAP2 antibody detects Small ArfGAP 2, an ADP-ribosylation factor GTPase-activating protein that regulates membrane trafficking and clathrin-mediated endocytosis. The UniProt recommended name is Small ArfGAP 2 (SMAP2). This cytosolic protein functions as a regulator of ARF family small GTPases, controlling vesicle formation and cargo sorting at the trans-Golgi network and plasma membrane.

Functionally, SMAP2 antibody identifies a 429-amino-acid protein containing an ArfGAP domain and a C-terminal clathrin-binding region. SMAP2 stimulates GTP hydrolysis on ARF1 and ARF6, facilitating vesicle uncoating and recycling. It plays a key role in synaptic vesicle turnover, receptor endocytosis, and intracellular trafficking, ensuring efficient communication between organelles.

The SMAP2 gene, located on chromosome 1p34.1, is widely expressed in brain, heart, and other tissues with active vesicular transport. In neurons, SMAP2 localizes to presynaptic terminals, where it interacts with clathrin and adaptor proteins to regulate synaptic vesicle cycling. Its activity coordinates endocytosis and exocytosis, maintaining synaptic plasticity and receptor availability.

Pathologically, aberrant SMAP2 expression or dysfunction may contribute to neurological disorders, including synaptic transmission defects and neurodevelopmental abnormalities. Its regulatory role in membrane dynamics also links it to cancer cell migration and secretion. Research with SMAP2 antibody provides insight into ARF signaling, vesicle recycling, and cellular communication mechanisms.

SMAP2 antibody is suitable for western blotting, immunocytochemistry, and immunoprecipitation to detect SMAP2 in cultured cells and tissues. NSJ Bioreagents offers validated SMAP2 antibody reagents designed for studies of ARF GTPase signaling, endocytosis, and neuronal function.

Structurally, SMAP2 contains an N-terminal ArfGAP catalytic domain that interacts with GTP-bound ARF, accelerating GTP hydrolysis, and a C-terminal region that binds clathrin and adaptor proteins. This modular structure allows SMAP2 to act as a molecular bridge between vesicle formation and signaling regulation. This antibody aids in understanding SMAP2Ã¯Â¿Â½s contribution to intracellular trafficking and membrane remodeling.

Application Notes

Optimal dilution of the SMAP2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SMAP2 recombinant protein (Position: K142-K429) was used as the immunogen for the SMAP2 antibody.

Storage

After reconstitution, the SMAP2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.