abcam

ab32524

Anti-ARF1 + ARF3 antibody [EP442Y]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP442Y
Purification technique	Affinity purification Protein A
Specificity	The immunogen used for this product shares 100% homology with ARF3, ARF4 and ARF5. Cross-reactivity with the latter two protein have not been confirmed experimentally.
Concentration	0.293 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

WB

Tested

Species	Synthetic peptide - Human
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/80
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat, Synthetic peptide - Human
Dilution info	-

Notes	-

Target data

See full target information ARF1

Function	Small GTPase involved in protein trafficking between different compartments (PubMed:8253837). Modulates vesicle budding and uncoating within the Golgi complex (PubMed:8253837). In its GTP-bound form, triggers the recruitment of coatomer proteins to the Golgi membrane (PubMed:8253837). The hydrolysis of ARF1-bound GTP, which is mediated by ARFGAPs proteins, is required for dissociation of coat proteins from Golgi membranes and vesicles (PubMed:8253837). The GTP-bound form interacts with PICK1 to limit PICK1-mediated inhibition of Arp2/3 complex activity; the function is linked to AMPA receptor (AMPAR) trafficking, regulation of synaptic plasticity of excitatory synapses and spine shrinkage during long-term depression (LTD) (By similarity). Plays a key role in the regulation of intestinal stem cells and gut microbiota, and is essential for maintaining intestinal homeostasis (By similarity). Also plays a critical role in mast cell expansion but not in mast cell maturation by facilitating optimal mTORC1 activation (By similarity). (Microbial infection) Functions as an allosteric activator of the cholera toxin catalytic subunit, an ADP-ribosyltransferase.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity

- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	ARF1 and ARF3 also known as ADP-ribosylation factors 1 and 3 are small GTP-binding proteins belonging to the ARF family. ARF1 has a molecular mass of approximately 21 kDa. These proteins are expressed in most eukaryotic cells where they play roles in vesicular trafficking processes. ARF1 is mainly located in the Golgi apparatus while ARF3 appears in the plasma membrane and cytoplasm. They function as molecular switches by cycling between active GTP-bound and inactive GDP-bound states which regulates the formation and budding of vesicles.
Biological function summary	ARF1 and ARF3 are significant in the intracellular trafficking of proteins and lipids. The proteins are part of the coatomer protein complex (COPI) important for retrograde transport from the Golgi to the endoplasmic reticulum. By recruiting coat proteins to the Golgi membranes ARF1 and ARF3 facilitate the sorting and packaging of cargo molecules into transport vesicles. This process sustains the maintenance of organelle identity and the dynamics of membrane remodeling.
Pathways	ARF1 and ARF3 are involved in key cellular pathways particularly those related to vesicular trafficking and membrane dynamics. They participate in the COPI and clathrin-mediated pathways. Through these pathways ARF1 interacts with proteins like PDZD8 while ARF3 works with proteins involved in primary cilia formation. These interactions underline their integrative role in maintaining proper cellular organization and communication.
Associated diseases and disorders	ARF1 and ARF3 have links to cancer and neurodegenerative diseases. Dysregulation of ARF1 is associated with various cancer types due to its role in cell proliferation and migration. ARF3 has connections to neurodegenerative disorders where altered vesicular trafficking can lead to pathological conditions. ARF1's interaction with the protein NFDM-442 highlights its importance in disease contexts whereby changes in these interactions might contribute to disease progression and severity.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

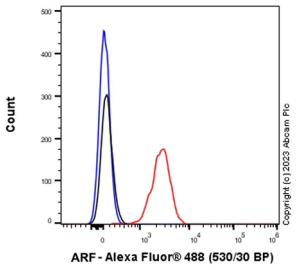
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

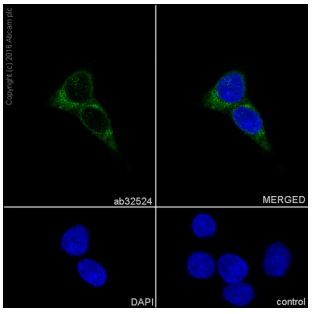
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8 product images



Flow Cytometry (Intracellular) - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

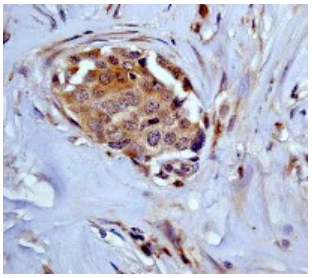
Flow cytometry analysis of 4% paraformaldehyde fixed 90% methanol permeabilised MCF7 (human breast adenocarcinoma epithelial cell) cells using ab32524 at 1/500 dilution (red) and secondary Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution. The isotype control was Rabbit monoclonal IgG (ab172730) (Black) and the control was cell swithout incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

ARF1 + ARF3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ARF1 + ARF3 antibody

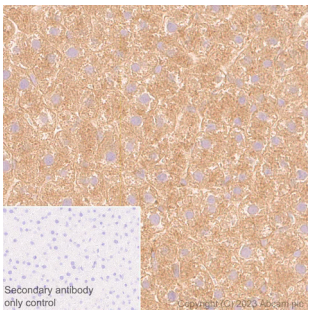
Immunofluorescence staining of MCF7 cells with purified ab32524 working dilution of 1/500 counter-stained with DAPI. The secondary antibody was an Alexa Fluor® 488 conjugated goat anti-rabbit (ab150077) used at a dilution of 1/1000. The cells were fixed in 100% methanol. The negative control is shown in bottom right hand panel - for the negative control PBS was used instead of the primary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

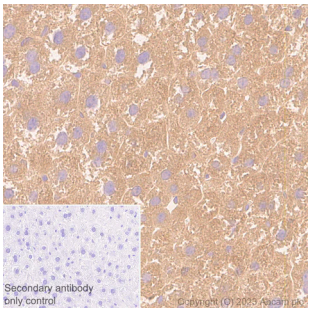
ARF1 + ARF3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ARF1 + ARF3 antibody

Immunohistochemical analysis of paraffin-embedded human breast carcinoma using ab32524 at 1/250 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



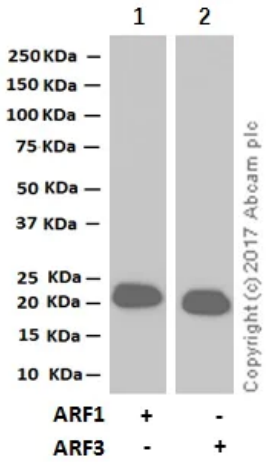
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

Immunohistochemistry analysis of paraffin-embedded rat liver tissue sections using ab32524 at 1/2000 dilution and ready to use secondary LeicaDS9800 (Bond™ Polymer Refine Detection). Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins. Positive staining on rat liver. The section was incubated with ab32524 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

Immunohistochemistry analysis of paraffin-embedded mouse liver tissue sections using ab32524 at 1/2000 dilution and ready to use secondary LeicaDS9800 (Bond™ Polymer Refine Detection). Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins. Positive staining on mouse liver. The section was incubated with ab32524 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument



Western blot - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

Blocking and diluting buffer: 5% NFDM/TBST
Human ARF-1 recombinant protein, (Cat#:ab123538)
Human ARF-3 recombinant protein, (Cat#:ab113581)

All lanes:
Western blot - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524) at 1/20000 dilution

Lane 1:
Full length human ARF-1 recombinant protein at 0.015 µg

Lane 2:
Full length human ARF-3 recombinant protein at 0.015 µg

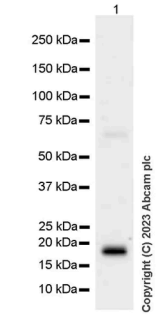
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 21 kDa

Observed band size: 23 kDa

Exposure time: 3min



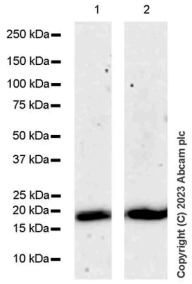
Western blot - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

Blocking and diluting buffer: 5% NFDM/TBST. Lysate was freshly made and used for Western blotting immediately to minimize protein degradation.
All lanes:
Western blot - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524) at 1/1000 dilution

All lanes:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Observed band size: 20 kDa

Exposure time: 70s



Western blot - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524)

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-ARF1 + ARF3 antibody [EP442Y] (ab32524) at 1/1000 dilution

Lane 1:
SiHa (human cervical epithelial cell) whole cell lysate at 50 µg

Lane 2:
T-47D (human ductal breast epithelial tumor epithelial cell) whole cell lysate at 50 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 20 kDa

Exposure time: 180s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.