abcam

ab241061

Anti-RAB8A antibody [MJF-R22-79-3]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	MJF-R22-79-3
Purification technique	Affinity purification Protein A
Concentration	0.595 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/600
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/1000
Notes	-

Target data

See full target information RAB8A

Function The small GTPases Rab are key regulators of intracellular membrane trafficking, from the formation of transport vesicles to their fusion with membranes. Rabs cycle between an inactive GDP-bound form and an active GTP-bound form that is able to recruit to membranes different sets of downstream effectors directly

responsible for vesicle formation, movement, tethering and fusion. RAB8A is involved in polarized vesicular trafficking and neurotransmitter release. Together with RAB11A, RAB3IP, the exocyst complex, PARD3, PRKCI, ANXA2, CDC42 and DNMBP promotes transcytosis of PODXL to the apical membrane initiation sites (AMIS), apical surface formation and lumenogenesis (PubMed:20890297). Regulates the compacted morphology of the Golgi (PubMed:26209634). Together with MYO5B and RAB11A participates in epithelial cell polarization (PubMed:21282656). Also involved in membrane trafficking to the cilium and ciliogenesis (PubMed:21844891, PubMed:30398148, PubMed:20631154). Together with MICALL2, may also regulate adherens junction assembly (By similarity). May play a role in insulin-induced transport to the plasma membrane of the glucose transporter GLUT4 and therefore play a role in glucose homeostasis (By similarity). Involved in autophagy (PubMed:27103069). Participates in the export of a subset of neosynthesized proteins through a Rab8-Rab10-Rab11-dependent endosomal export route (PubMed:32344433). Targeted to and stabilized on stressed lysosomes through LRRK2 phosphorylation (PubMed:30209220). Suppresses stress-induced lysosomal enlargement through EHBP1 and EHNP1L1 effector proteins (PubMed:30209220).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
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.

Collaborations

This antibody was developed with support from The Michael J. Fox Foundation.



Supplementary info

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

Activity summary	RAB8A is a small GTPase also referred to as Ras-related protein Rab-8A involved in intracellular membrane trafficking. It plays a critical role in the regulation of exocytosis the process by which cells release substances to the extracellular space. RAB8A mainly functions by cycling between an inactive GDP-bound form and an active GTP-bound form facilitating vesicle budding transport and fusion with target membranes. This protein is expressed in various tissues including the brain and pancreas where it assists in important cellular functions. RAB8A has a molecular mass of approximately 24 kDa.
Biological function summary	The small GTPase RAB8A contributes to the biosynthetic transport from the trans-Golgi network to the plasma membrane. It performs this activity in coordination with other proteins as part of a larger complex. RAB8A also plays an essential role in cilia formation and maintenance affecting cell polarity and signaling functions. The protein's ability to regulate vesicle movement makes it important for cellular homeostasis and communication.
Pathways	The regulatory function of RAB8A is significant in the ciliary membrane trafficking pathway and the insulin signaling pathway. Within these pathways RAB8A interacts closely with other proteins like Rab11 and Rabin8 which help support its roles in directing vesicle transport. These interactions are essential for proper cellular signaling and the maintenance of polarized cellular structures further supporting the function of various cellular pathways.
Associated diseases and disorders	The dysfunction of RAB8A has associations with certain ciliopathies notably Bardet-Biedl syndrome. This condition involves abnormalities in cilia structure and function leading to symptoms like kidney disease vision impairment and obesity. Moreover disruptions in RAB8A have connections with insulin resistance implicating it in metabolic disorders. In the context of these diseases proteins such as BBS proteins and Rab11 play a role in mediating the effects of dysfunctional RAB8A-related pathways.

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.

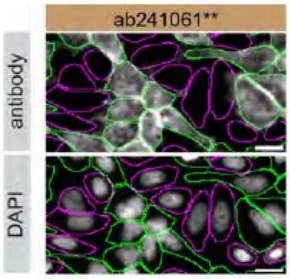
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

14 product images



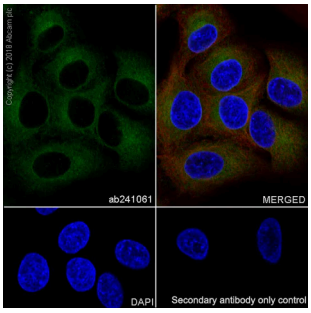
Immunocytochemistry/ Immunofluorescence - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Immunocytochemistry/ Immunofluorescence staining of wild-type HeLa cells using rabbit Anti-RAB8A antibody

ab241061 was shown to react with RAB8A in wild-type HeLa cells in immunocytochemistry with loss of signal observed in RAB8A knockout cell line ab264993. Wild-type and knockout cells were mixed and pelleted at a 1:1 ratio on coverslips. The cells were fixed with 4% paraformaldehyde (15 min) then permeabilized with 0.1% Triton X-100 (10min) and then blocked with 1x PBS, 0.01% Triton X-100, 5% BSA, 5% NGS. The cells were then incubated with ab241061 at 1/600 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat anti-rabbit secondary antibody to (Alexa Fluor® 555) at 0.5 ug/ml.

Acquisition of the green (wild-type), red (antibody staining) and far-red (knockout) channels was performed. Representative grayscale images of the red channel are shown. Wild-type and knockout cells are outlined with yellow and magenta dashed line, respectively. Schematic representation of the mosaic strategy used is shown on the bottom-right panel. Image was acquired with a Zeiss(LSM-880).

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.

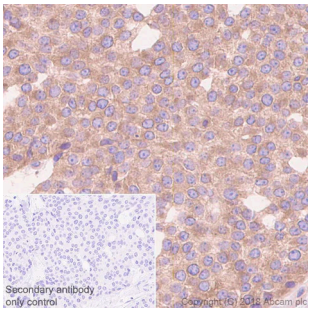


Immunocytochemistry/ Immunofluorescence - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RAB8A antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized A549 (human lung carcinoma cell line) cells labeling RAB8A with ab241061 at 1/500 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining in A549 cells.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

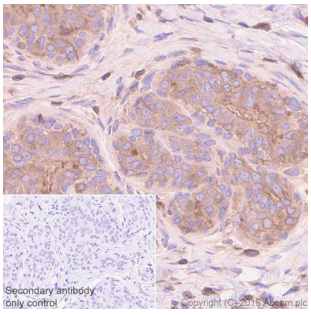


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RAB8A antibody

Immunohistochemical analysis of paraffin-embedded human bladder cancer tissue labeling RAB8A with ab241061 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining on human bladder cancer (PMID: 14581456). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

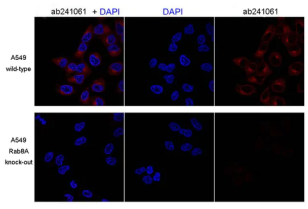


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RAB8A antibody

Immunohistochemical analysis of paraffin-embedded human breast tissue labeling RAB8A with ab241061 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining on human breast (PMID: 14581456). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

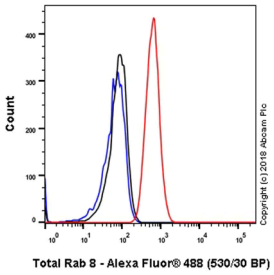
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RAB8A antibody

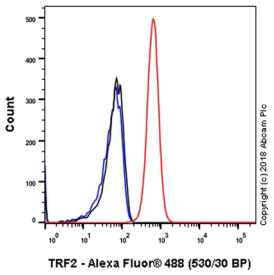
Immunofluorescent analysis of 3% paraformaldehyde-fixed, 0.1% Saponin permeabilized A549 (human lung carcinoma cell line) and RAB8A knock-out A549 cells labeling RAB8A with ab241061 at 1/100 dilution.
This image is kindly provided by our collaborator Dr. Dario Alessi, University of Dundee.



Flow Cytometry (Intracellular) - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Flow Cytometry (Intracellular) staining using rabbit Anti-RAB8A antibody

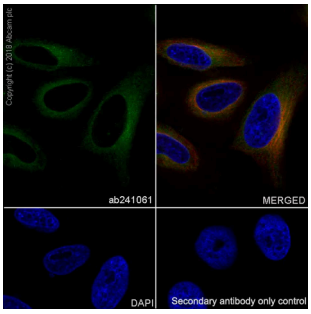
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized A549 (human lung carcinoma cell line) cell line labeling RAB8A with ab241061 at 1/600 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Flow Cytometry (Intracellular) staining using rabbit Anti-RAB8A antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized A549 (human lung carcinoma cell line) cell line labeling RAB8A with ab241061 at 1/600 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.

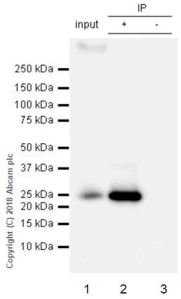


Immunocytochemistry/ Immunofluorescence - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RAB8A antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling RAB8A with ab241061 at 1/500 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining in HeLa cells. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Immunoprecipitation - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A was immunoprecipitated from 0.35 mg of A549 (human lung carcinoma cell line) whole cell lysate with ab241061 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab241061 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: A549 whole cell lysate 10 µg (Input).

Lane 2: ab241061 IP in A549 whole cell lysate .

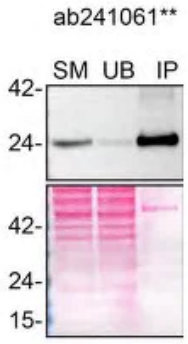
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab241061 in A549 whole cell lysate .

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 8 seconds.

All lanes:
Immunoprecipitation - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

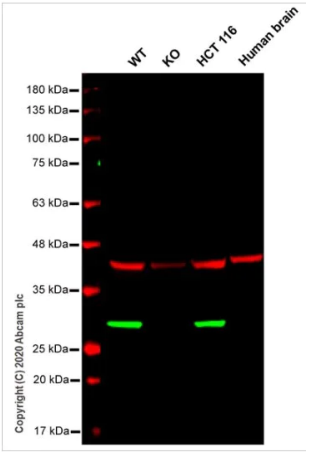
Predicted band size: 24 kDa



Immunoprecipitation - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

Immunoprecipitation of RAB8A in HeLa cells. Lysates were prepared and immunoprecipitation was performed using 2 µg of ab241061 pre-coupled to Protein A beads. Samples were then washed and processed for western blot.

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Western blot staining using rabbit Anti-RAB8A antibody

Lanes 1-4: Merged signal (red and green). Green - ab241061 observed at 24 kDa. Red - loading control, ab8245 observed at 37 kDa.
ab241061 Anti-RAB8A antibody [MJF-R22-79-3] was shown to specifically react with RAB8A in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab264993 (knockout cell lysate ab257195) was used. Wild-type and RAB8A knockout samples were subjected to SDS-PAGE. ab ab241061 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
RAB8A knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human RAB8A knockout HeLa cell line (ab264993)

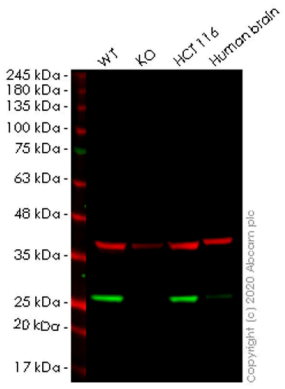
Lane 3:
HCT116 cell lysate at 20 µg

Lane 4:
Human brain tissue lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 24 kDa

Observed band size: 24 kDa



Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Western blot staining using rabbit Anti-RAB8A antibody

Lanes 1-4: Merged signal (red and green). Green - ab241061 observed at 24 kDa. Red - loading control, ab8245 observed at 37 kDa.
ab241061 Anti-RAB8A antibody [MJF-R22-79-3] was shown to specifically react with RAB8A in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab264993 (knockout cell lysate ab257195) was used. Wild-type and RAB8A knockout samples were subjected to SDS-PAGE. ab ab241061 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
RAB8A knockout HeLa cell lysate at 20 µg

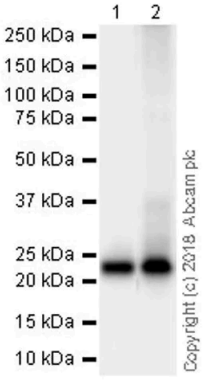
Lane 3:
HCT116 cell lysate at 20 µg

Lane 4:
Human brain tissue lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 24 kDa

Observed band size: 24 kDa



Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Western blot staining using rabbit Anti-RAB8A antibody

Exposure time : 7.75 seconds.
Blocking/Dilution buffer: 5% NFDM/TBST.

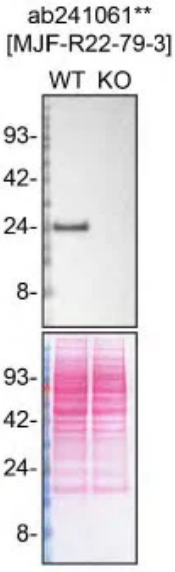
The expression profile observed is consistent with what has been described in the literature (PMID: 15673612).

All lanes:
Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061) at 1/1000 dilution

Lane 1:
HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Predicted band size: 24 kDa



Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061)

RAB8A Western blot staining using rabbit Anti-RAB8A antibody

ab241061 was shown to react with RAB8A in wild-type HeLa cells in Western blot with loss of signal observed in RAB8A knockout cell line ab264993. Wild-type HeLa and RAB8A knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab241061 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-RAB8A antibody [MJF-R22-79-3] (ab241061) at 1/1000 dilution

Lane 1:
Wild-type HeLa lysate at 30 µg

Lane 2:
RAB8A knock-out HeLa lysate at 30 µg

Lane 2:
Western blot - Human RAB8A knockout HeLa cell line (ab264993)

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