abcam

ab221780

Anti-RAB8A antibody [EPR14873] - Low endotoxin, Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR14873
Purification technique	Affinity purification Protein A

Reactivity data

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - 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	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab221780 is the carrier-free version of ab188574.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

What does low endotoxin mean?
Our low endotoxin, azide-free formats have low endotoxin level (1 EU/mg, determined by the TAL assay) and are free from azide, to achieve consistent experimental results in functional assays.

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

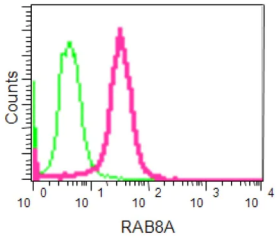
We do not recommend this combination. It is not covered by our product promise.

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.

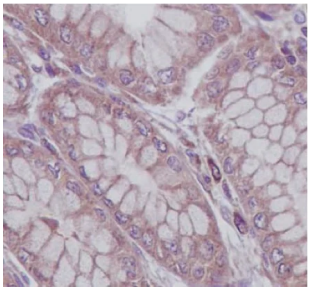
6 product images



Flow Cytometry (Intracellular) - Anti-RAB8A antibody [EPR14873] - Low endotoxin, Azide free (ab221780)

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

Intracellular flow cytometrical analysis of HeLa cells labeling RAB8A with ab188574 at 1/260 (pink) compared to a Isotype control (green). FITC-conjugated goat-anti-rabbit secondary antibody at 1/150 were used for the analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188574).

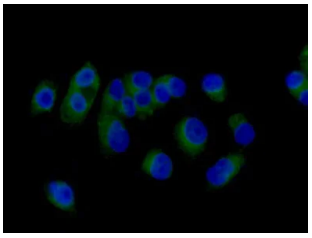


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RAB8A antibody [EPR14873] - Low endotoxin, Azide free (ab221780)

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

Immunohistochemical analysis of paraffin-embedded Human stomach tissue labeling RAB8A with ab188574 at 1/500. A prediluted HRP Polymer for Rabbit IgG was used as the secondary antibody. Counter stained with Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab188574).

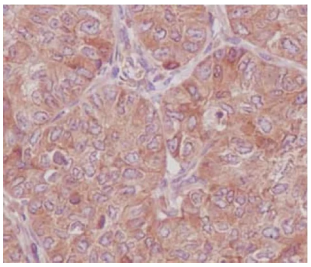
Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-RAB8A antibody [EPR14873] - Low endotoxin, Azide free (ab221780)

RAB8A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RAB8A antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed HepG2 cells labelling RAB8A with ab188574 at 1/500 followed by Goat anti rabbit IgG (Alexa Fluor® 488) and DAPI staining.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab188574).

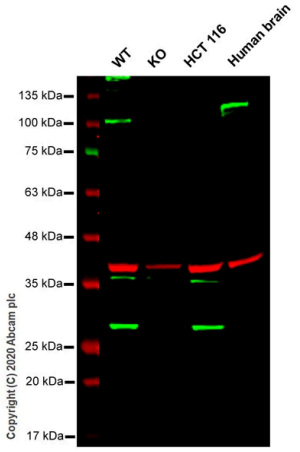


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RAB8A antibody [EPR14873] - Low endotoxin, Azide free (ab221780)

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

This IHC data was generated using the same anti-RAB8A antibody clone EPR14873 in a different buffer formulation (cat# ab188574).
Immunohistochemical analysis of paraffin-embedded Human adenocarcinoma of colon tissue labelling RAB8A with ab188574 at 1/500. A prediluted HRP Polymer for Rabbit IgG was used as the secondary antibody. Counter stained with Hematoxylin.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-RAB8A antibody [EPR14873] - Low endotoxin, Azide free (ab221780)

RAB8A Western blot staining using rabbit Anti-RAB8A antibody

This data was developed using the same antibody clone in a different buffer formulation (ab188574).
Lanes 1-4: Merged signal (red and green). Green - ab188574 observed at 24 kDa. Red - loading control, ab8245 observed at 37 kDa.

ab188574 Anti-RAB8A antibody [EPR14873] 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. ab188574 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 [EPR14873] (ab188574) at 1/1000 dilution

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

Lane 2:
RAB8A knockout HeLa cell lysate at 20 µg

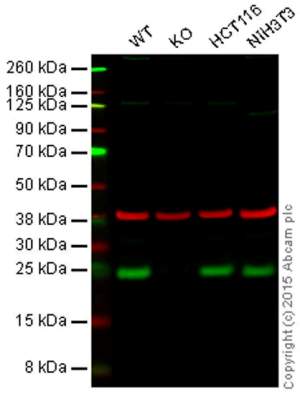
Lane 3:
HCT116 cell lysate at 20 µg

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 [EPR14873] - Low endotoxin, Azide free (ab221780)

This WB data was generated using the same anti-RAB8A antibody clone, EPR14873, in a different buffer formulation (cat# ab188574).
Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: RAB8A knockout HAP1 cell lysate (20 µg)
Lane 3: HCT116 cell lysate (20 µg)
Lane 4: NIH/3T3 cell lysate (20 µg)

Lanes 1 - 4: Merged signal (red and green). Green - ab188574 observed at 24 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab188574 was shown to specifically react with RAB8A when RAB8A knockout samples were used. Wild-type and RAB8A knockout samples were subjected to SDS-PAGE. ab188574 and ab8245 (loading control to GAPDH) were diluted 1/1000 and 1/2000 and incubated overnight at 4°C. 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 1/10 000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-RAB8A antibody [EPR14873] (ab188574) at 1/1000 dilution

Lane 1:
Wild-type HAP1 cell lysate at 20 µg

Lane 2:
RAB8A knockout HAP1 cell lysate at 20 µg

Lane 3:
HCT116 cell lysate at 20 µg

Lane 4:
NIH/3T3 cell lysate at 20 µg

Predicted band size: 24 kDa

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