abcam

ab302546

Anti-Rab1A antibody [EPR27169-83] (BSA and 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	EPR27169-83
Purification technique	Affinity purification Protein A
Concentration	1.013 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Expected

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

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IHC-Fr

Not recommended

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

ICC/IF

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

Species	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, Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Target data

See full target information RAB1A

Function	The small GTPases Rab are key regulators of intracellular membrane trafficking, from the formation of transport vesicles to their fusion with membranes (PubMed:20639577, PubMed:20861236, PubMed:21303926, PubMed:22939626).

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 (PubMed:20639577, PubMed:20861236, PubMed:21303926, PubMed:22939626). RAB1A regulates vesicular protein transport from the endoplasmic reticulum (ER) to the Golgi compartment and on to the cell surface, and plays a role in IL-8 and growth hormone secretion (PubMed:21303926). Required to modulate the compacted morphology of the Golgi (PubMed:26209634). Regulates the level of CASR present at the cell membrane (PubMed:20861236). Plays a role in cell adhesion and cell migration, via its role in protein trafficking (PubMed:20639577). Plays a role in autophagosome assembly and cellular defense reactions against pathogenic bacteria (PubMed:22939626). Plays a role in microtubule-dependent protein transport by early endosomes and in anterograde melanosome transport (By similarity).

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

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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.

Supplementary info

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

Activity summary	Rab1A also known as Ras-related protein Rab-1A is a small GTPase belonging to the Rab family. Rab1A has a role in regulating vesicle trafficking and it is involved in ER-to-Golgi transport. This protein with a molecular mass of approximately 23.5 kDa regulates intracellular traffic affecting vesicle budding motility and fusion. Rab1A is highly expressed in various tissues including the liver heart kidney and to lesser extents in others.
Biological function summary	The Rab1A protein influences intracellular transport processes and maintains cellular homeostasis. It forms part of multimeric protein complexes that facilitate its functions in the secretory pathway. The protein ensures the proper trafficking of cargo proteins from the endoplasmic reticulum to the Golgi apparatus playing a role in the early secretory pathway. This involvement is critical for maintaining the post-translational modification and processing of proteins.
Pathways	The mechanical function of Rab1A integrates into several cellular pathways including the secretory pathway and autophagy. Rab1A works with other proteins like Rab2 and Rab30 in the secretory pathway to coordinate the proper flow of proteins. Its coordination with proteins like LC3 during autophagy highlights its importance in cellular turnover and degradation processes linking Rab1A to essential biological functions and homeostasis.
Associated diseases and disorders	Rab1A has a connection to certain cancers and neurodegenerative diseases. Aberrant Rab1A expression or mutations can lead to disruptions in cellular trafficking implicated in hepatocellular carcinoma. The protein's altered function could also influence the pathogenesis of Parkinson’s disease with proteins such as α-synuclein showing interaction in disease pathways. Understanding these relationships helps in elucidating Rab1A's role in disease mechanisms.

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.

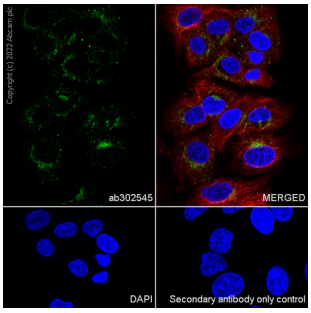
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

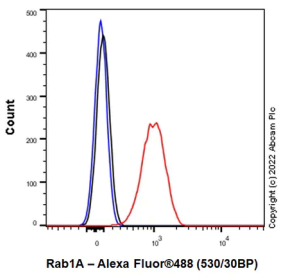
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11 product images



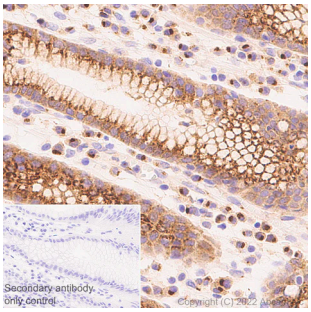
Immunocytochemistry/ Immunofluorescence - Anti-Rab1A antibody [EPR27169-83] (BSA and Azide free) (ab302546)

This data was developed using ab302545, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized A549 (human lung carcinoma epithelial cell) cells labelling Rab1A with ab302545 at 1/500 (1.004 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing cytoplasmic staining in A549 cell line is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



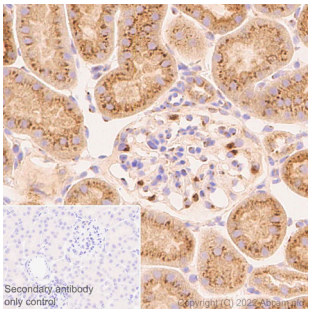
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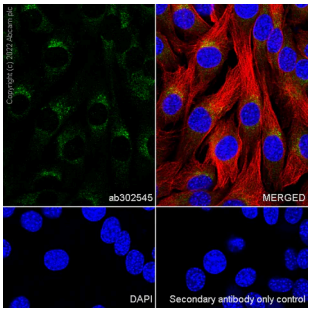
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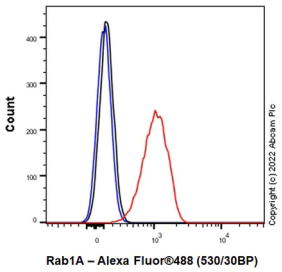
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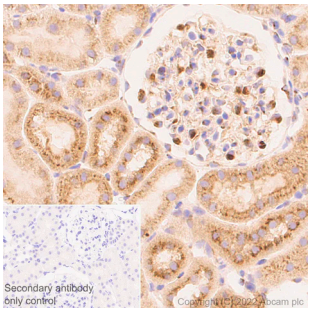
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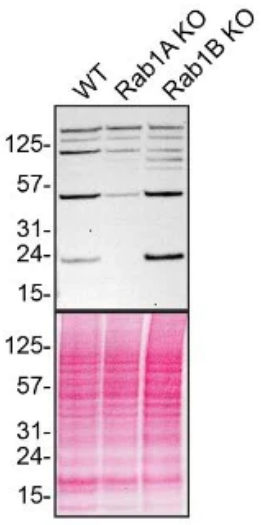
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Western blot - Anti-Rab1A antibody [EPR27169-83] (BSA and Azide free) (ab302546)

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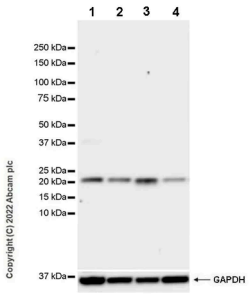
ab302545 was shown to react with RAB1A in wild-type HAP1 cells in Western blot with loss of signal observed in a RAB1A knockout cell line. Wild-type HAP1, RAB1A knockout and RAB1B knockoutcell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab302545 overnight at 4 °C at a 1/200 dilution. Blots were incubated with secondary antibodies at 0.2ug/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-Rab1A antibody [EPR27169-83] (ab302545) at 1/200 dilution

Lane 1:
Wild-type HAP1 lysate at 20 µg

Lane 2:
RAB1A knock-out HAP1 lysate at 20 µg

Lane 3:
RAB1B knock-out HAP1 lysate at 20 µg



Western blot - Anti-Rab1A antibody [EPR27169-83] (BSA and Azide free) (ab302546)

This data was developed using ab302545, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST Low expression: HCT116 (PMID: 30896866)
All lanes:
Western blot - Anti-Rab1A antibody [EPR27169-83] (ab302545) at 1/1000 dilution

Lane 1:
U-87 MG (human glioblastoma-astrocytoma epithelial cell), whole cell lysate 20 µg

Lane 2:
U-2 OS (human bone osteosarcoma epithelial cell), whole cell lysate 20 µg

Lane 3:
A549 (human lu carcinoma epithelial cell), whole cell lysate 20 µg

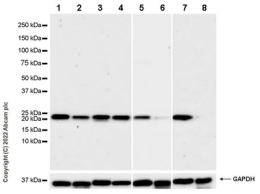
Lane 4:
HCT116 (human colorectal carcinoma epithelial cell), whole cell lysate 20 µg

Secondary

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

Observed band size: 22 kDa

Exposure time: 26s



Western blot - Anti-Rab1A antibody [EPR27169-83] (BSA and Azide free) (ab302546)

This data was developed using ab302545, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST Low expression: liver (PMID: 26308575)
All lanes:
Western blot - Anti-Rab1A antibody [EPR27169-83] (ab302545) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate 20 µg

Lane 2:
C2C12 (mouse myoblasts myoblast), whole cell lysate 20 µg

Lane 3:
C6 (rat glial tumor glial cell), whole cell lysate 20 µg

Lane 4:
Human stomach tissue lysate 20 µg

Lane 5:
Mouse brain tissue lysate 20 µg

Lane 6:
Mouse liver tissue lysate 20 µg

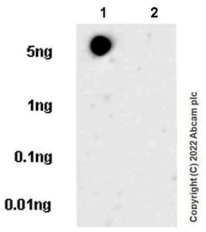
Lane 7:
Rat brain tissue lysate 20 µg

Lane 8:
Rat liver tissue lysate 20 µg

Secondary

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

Observed band size: 22 kDa



Dot Blot - Anti-Rab1A antibody [EPR27169-83] (BSA and Azide free) (ab302546)

This data was developed using ab302545, the same antibody clone in a different buffer formulation. Dot blot analysis of Rab1A using ab302545 at 1:1000 (0.502 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution. Exposure time: 3 minutes Blocking and diluting buffer and concentration: 5% NFDM/TBST

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