abcam

ab302545

Anti-Rab1A antibody [EPR27169-83]

Recombinant | RabMAb | KO Validated | 20ul selling size

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	EPR27169-83
Purification technique	Affinity purification Protein A
Concentration	0.502 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Species	Mouse

Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide - Human
Dilution info	1/1000
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse

Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

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
Dilution info	1/500
Notes	-

Species	Mouse
Dilution info	1/500
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
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50
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
Dilution info	1/30
Notes	-

Species	Mouse
Dilution info	1/30
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	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

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.

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

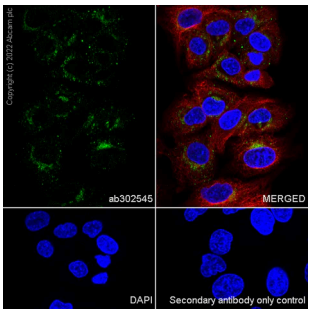
We do not recommend this combination. It is not covered by our product promise.

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.

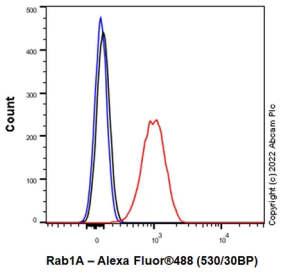
Full details and terms and conditions can be found here:
Terms & Conditions.

11 product images



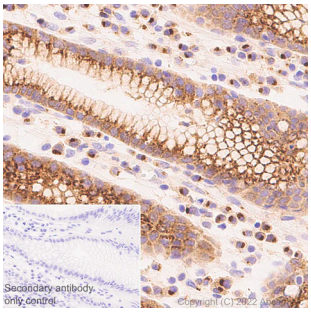
Immunocytochemistry/ Immunofluorescence - Anti-Rab1A antibody [EPR27169-83] (ab302545)

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.



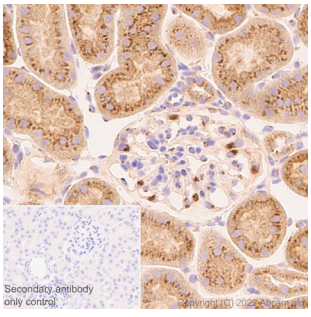
Flow Cytometry (Intracellular) - Anti-Rab1A antibody [EPR27169-83] (ab302545)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized A549 (human lung carcinoma epithelial cell) cells labelling Rab1A with ab302545 at 1/50 dilution (1ug) (Red) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



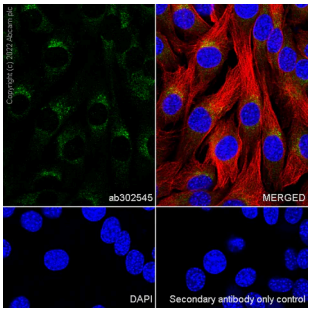
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rab1A antibody [EPR27169-83] (ab302545)

Immunohistochemical analysis of paraffin-embedded Human stomach tissue labeling Rab1A with ab302545 at 1/500 (1.004 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining in human stomach. The section was incubated with ab302545 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



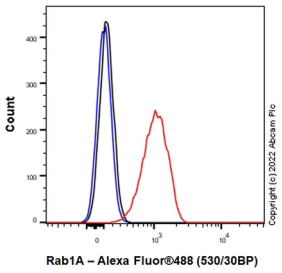
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rab1A antibody [EPR27169-83] (ab302545)

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling Rab1A with ab302545 at 1/2000 (0.251 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining in mouse kidney (PMID:33730578). The section was incubated with ab302545 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



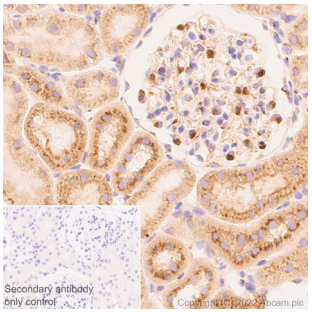
Immunocytochemistry/ Immunofluorescence - Anti-Rab1A antibody [EPR27169-83] (ab302545)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized C2C12 (mouse myoblasts myoblast) 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 C2Cl2 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.



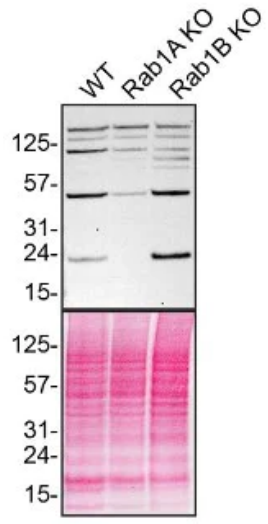
Flow Cytometry (Intracellular) - Anti-Rab1A antibody [EPR27169-83] (ab302545)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized C2C12 (mouse myoblasts myoblast) cells labelling Rab1A with ab302545 at 1/50 dilution (1ug) (Red) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rab1A antibody [EPR27169-83] (ab302545)

Immunohistochemical analysis of paraffin-embedded Rat kidney tissue labeling Rab1A with ab302545 at 1/2000 (0.251 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining in rat kidney (PMID:33730578). The section was incubated with ab302545 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Western blot - Anti-Rab1A antibody [EPR27169-83] (ab302545)

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.

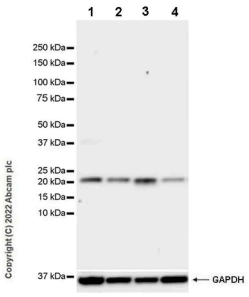
This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate 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] (ab302545)

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

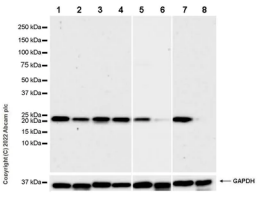
Lane 4:
HCT116 (human colorectal carcinoma epithelial cell), whole cell lysate 20 µg

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] (ab302545)

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

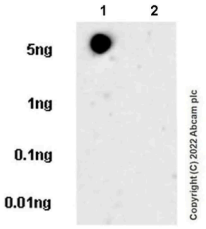
Lane 8:
Rat liver tissue lysate 20 µg

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] (ab302545)



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'.