abcam

ab238943

Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free

Recombinant | RabMAb

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	EPR18133
Purification technique	Affinity purification Protein A
Concentration	1.065 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-

Notes	-

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-P

Tested

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

WB

Expected

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

Target data

See full target information RHOA

Function

Small GTPase which cycles between an active GTP-bound and an inactive GDP-bound state. Mainly associated with cytoskeleton organization, in active state binds to a variety of effector proteins to regulate cellular responses such as cytoskeletal dynamics, cell migration and cell cycle (PubMed:23871831). Regulates a signal transduction pathway linking plasma membrane receptors to the assembly of focal adhesions and actin stress fibers (PubMed:31570889, PubMed:8910519, PubMed:9121475). Involved in a microtubule-dependent signal that is required for the myosin contractile ring formation during cell cycle cytokinesis (PubMed:12900402, PubMed:16236794). Plays an essential role in cleavage furrow formation. Required for the apical junction formation of keratinocyte cell-cell adhesion (PubMed:20974804, PubMed:23940119). Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly (PubMed:19934221). The MEMO1-RHOA-DIAPH1 signaling pathway plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity. In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization (PubMed:20937854). Involved in the reorientation of endothelial cells and their actin stress fibers in response to cellular mechantransduction-mediated activation by ARHGEF40 (By similarity). Regulates KCNA2 potassium channel activity by reducing its location at the cell surface in response to CHRM1 activation; promotes KCNA2 endocytosis (PubMed:19403695, PubMed:9635436). Acts as an allosteric activator of guanine nucleotide exchange factor ECT2 by binding in its activated GTP-bound form to the PH domain of ECT2 which stimulates the release of PH inhibition and promotes the binding of substrate RHOA to the ECT2 catalytic center (PubMed:31888991). May be an activator of PLCE1 (PubMed:16103226). In neurons, involved in the inhibition of the

initial spine growth. Upon activation by CaMKII, modulates dendritic spine structural plasticity by relaying CaMKII transient activation to synapse-specific, long-term signaling (By similarity). Acts as a regulator of platelet alpha-granule release during activation and aggregation of platelets (By similarity). When activated by DAAM1 may signal centrosome maturation and chromosomal segregation during cell division. May also be involved in contractile ring formation during cytokinesis. (Microbial infection) Serves as a target for the yopT cysteine peptidase from Yersinia pestis, vector of the plague.

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

ab238943 is the carrier-free version of ab187026.

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	RhoA and RhoC also known as RAS homolog family member A and C are small GTPases. They play an essential role in regulating the actin cytoskeleton which impacts cell morphology motility and division. RhoA has a molecular mass of approximately 22 kDa. RhoC shares a similar size and structure. Both are expressed in various human tissues but they show higher expression in the brain lung and liver. These proteins can switch between an active GTP-bound state and an inactive GDP-bound state influencing cellular processes.
Biological function summary	The proteins RhoA and RhoC are key regulators in cell signaling pathways that coordinate cytoskeletal dynamics. They are integral parts of the Rho protein complex which includes other small GTPases like Rac1 and Cdc42. Through these interactions RhoA and RhoC influence cell cycle progression apoptosis and cellular transformations required during development and tissue repair. Their ability to control actomyosin contractility makes them significant for focal adhesion assembly and disassembly affecting cell movement.
Pathways	The activities of RhoA and RhoC are involved in the Rho signaling pathway and the Wnt signaling pathway. These pathways play an important role in guiding cellular architecture and communication. The Rho signaling pathway includes interactions with proteins like ROCK1 and ROCK2 which help modulate smooth muscle contraction and cell trophism. Meanwhile the Wnt signaling pathway involves cross-talk with β-catenin and influences cellular proliferation and growth pointing to RhoA and RhoC's involvement in these essential signal transduction processes.
Associated diseases and disorders	The dysregulation of RhoA and RhoC is linked with various cancers including breast and prostate cancer where they contribute to cancer cell invasion and metastasis. RhoA is also connected to cardiovascular disorders where abnormal Rho signaling can lead to hypertension due to its effect on vascular smooth muscle contraction. In the context of cancer these proteins often work alongside others like Ras which can exacerbate cellular transformation and tumorigenesis. Understanding these connections offers opportunities for targeted therapeutic interventions in these pathological conditions.

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.

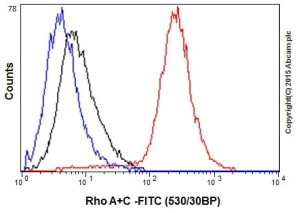
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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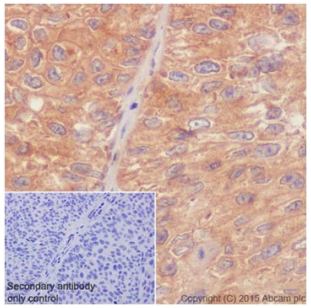
6 product images



Flow Cytometry (Intracellular) - Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free (ab238943)

RhoA + RhoC Flow Cytometry (Intracellular) staining using rabbit Anti-RhoA + RhoC antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed Jurkat (Human T cell leukemia cells from peripheral blood) cells labeling RhoA + RhoC with ab187026 at 1/400 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and a unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187026).



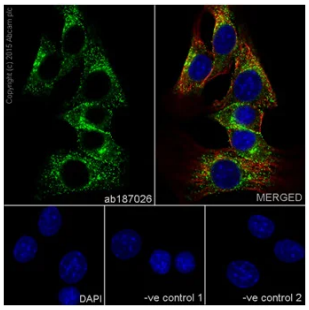
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free (ab238943)

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

Immunohistochemical analysis of paraffin-embedded Human transitional cell carcinoma of bladder tissue labeling RhoA + RhoC with ab187026 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on cancer cells of transitional cell carcinoma of bladder is observed. Counter stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187026).

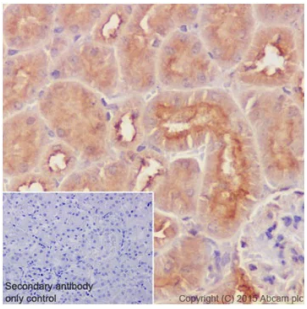
Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free (ab238943)

RhoA + RhoC Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RhoA + RhoC antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embyro fibroblast cells) cells labeling RhoA + RhoC with ab187026 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green). Confocal image showing cytoplasmic staining on NIH 3T3 cells is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:
1. ab187026 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
2. ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187026).



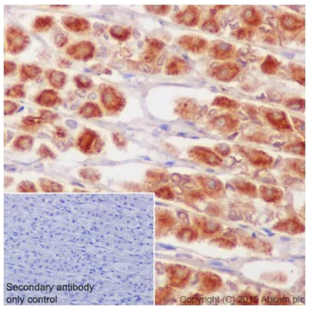
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free (ab238943)

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

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling RhoA + RhoC with ab187026 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on kidney tubules of mouse kidney is observed. Counter stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187026).

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free (ab238943)

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

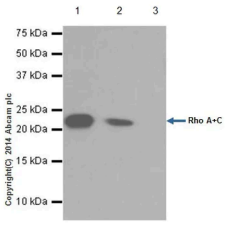
Immunohistochemical analysis of paraffin-embedded Rat stomach tissue labeling RhoA + RhoC with ab187026 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on epithelial cells of rat stomach is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187026).

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

Immunoprecipitation - Anti-RhoA + RhoC antibody [EPR18133] - BSA and Azide free (ab238943)



Immunoprecipitation of RhoA + RhoC from 1mg of NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysate achieved using ab187026 at 1/50 dilution.
Lane 1: Input: 10µg of NIH/3T3 whole cell lysate.
Lane 2: NIH/3T3 whole cell lysate following IP with ab187026.
Lane 3: Negative control: IP using Rabbit monoclonal IgG (ab172730) instead of ab187026 in NIH/3T3 whole cell lysates.
Western blot was performed using ab187026 at 1/1000 dilution.
VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1/1500 dilution.
Blocking and dilution buffer and concentration: 5% NFDM/TBST. 30 second exposure.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187026).

All lanes:
Immunoprecipitation - Anti-RhoA + RhoC antibody [EPR18133] (ab187026)

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