abcam

ab275884

Anti-Ras antibody [EPR23474-20] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR23474-20
Purification technique	Affinity purification Protein A
Concentration	1.068 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Mouse
Dilution info	-

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

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat, Recombinant full length protein - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Mouse, Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Recombinant full length protein - Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

IHC-P

Tested

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

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

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Target data

See full target information HRAS

Function	Involved in the activation of Ras protein signal transduction (PubMed:22821884). Ras proteins bind GDP/GTP and possess intrinsic GTPase activity (PubMed:12740440, PubMed:14500341, PubMed:9020151).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab275884 is the carrier-free version of ab275875.

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	The Ras protein also known by its alternate names such as KRAS NRAS and HRAS functions as a small GTPase which is a type of enzyme that binds to guanosine triphosphate (GTP) and can switch to an inactive form when it hydrolyzes GTP to GDP. Ras proteins are encoded by genes located in different chromosomes and typically have a molecular weight of about 21 kDa. These proteins are expressed in various tissues throughout the body where they play key roles in cellular signaling.
Biological function summary	Ras proteins are pivotal in regulating cell proliferation differentiation and survival. They are often part of larger protein complexes that facilitate signal transduction across cell membranes. These proteins function as binary molecular switches toggling between active (GTP-bound) and inactive (GDP-bound) states. Mutations in Ras proteins such as NRAS Q61R can lead the protein to assume permanently active conformations disrupting normal cellular signaling processes and contributing to oncogenesis.
Pathways	Ras proteins play significant roles in the MAPK/ERK and PI3K/AKT signaling pathways. Their activation leads to a cascade of phosphorylation events that ultimately regulate gene expression. Within these pathways Ras proteins interact

	with various molecules including RAF kinases and the PI3K protein further illustrating their complex roles in signal propagation. These pathways control many cellular processes including growth differentiation and survival illustrating how Ras proteins integrate multiple signals to modulate cellular outcomes.
Associated diseases and disorders	Ras proteins are frequently implicated in various cancers notably pancreatic and colorectal cancers. Mutated forms of Ras such as KRAS G12V drive oncogenesis by promoting uncontrolled cell growth and division. In cancer pathology Ras often interacts with tumor suppressor proteins influencing the disease progression. Targeting Ras-mediated signaling pathways using approaches like pan-Ras inhibitors or chemiluminescence ELISAs represents an ongoing area of therapeutic research aimed at combating Ras-driven malignancies.

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

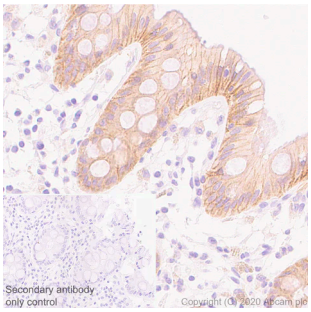
We do not recommend this combination. It is not covered by our product promise.

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.

13 product images



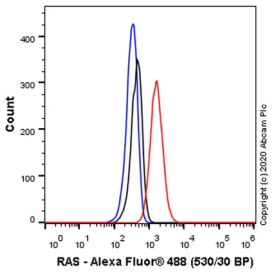
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

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

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling Ras with ab275875 at 1/2000 (0.338 ug/ml) dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human colon. The section was incubated with ab275875 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

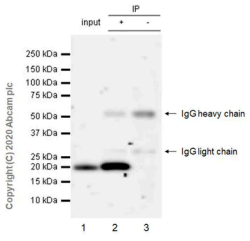


Flow Cytometry (Intracellular) - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

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

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling Ras with ab275875 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

A Goat anti rabbit IgG (Alexa Fluor®488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Ras was immunoprecipitated from 0.35 mg HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate with ab275875 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab275875 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 ug

Lane 2: ab275875 IP in HeLa whole cell lysate

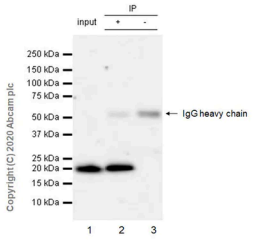
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab275875 in HeLa whole cell lysate

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

Exposure time: 110 seconds.
All lanes:
Immunoprecipitation - Anti-Ras antibody [EPR23474-20] (ab275875)

Predicted band size: 21 kDa

Observed band size: 21 kDa



Immunoprecipitation - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Ras was immunoprecipitated from 0.35 mg A431 (human epidermoid carcinoma epithelial cell) whole cell lysate 10 with ab275875 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab275875 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: A431 (human epidermoid carcinoma epithelial cell) whole cell lysate 10 ug

Lane 2: ab275875 IP in A431 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab275875 in A431 whole cell lysate

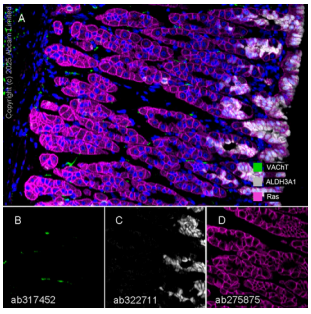
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 50 seconds.

All lanes:
Immunoprecipitation - Anti-Ras antibody [EPR23474-20] (ab275875)

Predicted band size: 21 kDa

Observed band size: 21 kDa



Multiplex immunohistochemistry - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

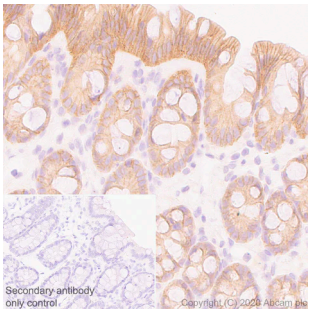
This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded mouse stomach tissue staining VAChT with ab317452 at 1/1000 dilution, ab322711 anti-ALDH3A1 used at 1/500 dilution and ab275875 anti-Ras used at 1/2000 dilution. Opal Polymer HRP Ms + Rb was used as a secondary antibody.

Panel A: merged staining of anti-VAChT (green; Opal™520), anti-ALDH3A1 (gray; Opal™570) and anti-Ras (magenta; Opal™690) on mouse stomach.
Panel B: anti-VAChT staining nerve plexus in mouse stomach.
Panel C: ant-ALDH3A1 staining epithelium in mouse stomach.
Panel D: ant-Ras showed mainly membranous staining in mouse stomach.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab317452, ab322711 and ab275875 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND®RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



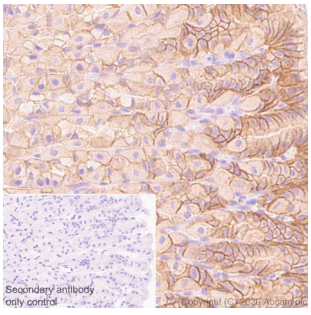
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

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

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Rat colon tissue labeling Ras with ab275875 at 1/2000 (0.338 ug/ml) dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on rat colon. The section was incubated with ab275875 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



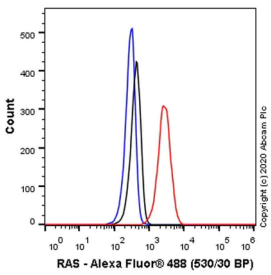
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

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

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Mouse stomach tissue labeling Ras with ab275875 at 1/2000 (0.338 ug/ml) dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on Mouse stomach. The section was incubated with ab275875 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

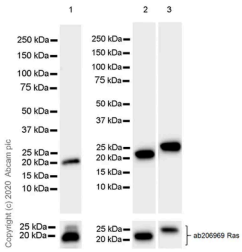


Flow Cytometry (Intracellular) - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

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

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling Ras with ab275875 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

A Goat anti rabbit IgG (Alexa Fluor®488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: 15 seconds.

All lanes:
Western blot - Anti-Ras antibody [EPR23474-20] (ab275875) at 1/1000 dilution

Lane 1:
His-tagged human KRAS recombinant protein, 20 ng

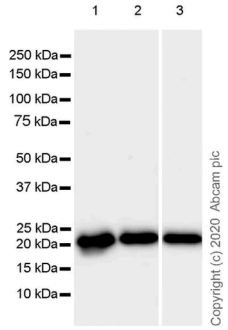
Lane 2:
His-tagged human HRAS recombinant protein, 20 ng

Lane 3:
His-tagged human NRAS recombinant protein, 20 ng

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 21 kDa



Western blot - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: Lanes 1-2: 26 seconds; Lane3: 10 seconds.

All lanes:
Western blot - Anti-Ras antibody [EPR23474-20] (ab275875) at 1/1000 dilution

Lane 1:
Human colon tissue lysate at 40 µg

Lane 2:
Human liver tissue lysate at 40 µg

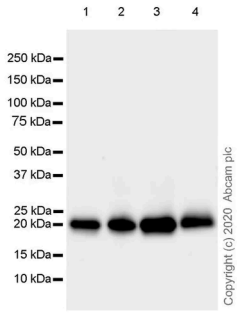
Lane 3:
Human stomach tissue lysate at 40 µg

Secondary

All lanes:
VeriBlot for IP secondary antibody(HRP)(ab131366) at 1/1000 dilution

Predicted band size: 21 kDa

Observed band size: 21 kDa



Western blot - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST

Exposure time: 26 seconds.

All lanes:
Western blot - Anti-Ras antibody [EPR23474-20] (ab275875) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 40 µg

Lane 2:
HEK-293T (human embryonic kidney epithelial cell) whole cell lysate at 40 µg

Lane 3:
A431 (human epidermoid carcinoma epithelial cell) whole cell lysate at 40 µg

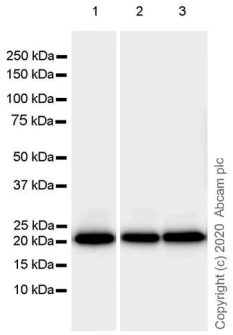
Lane 4:
Human brain tissue lysate at 40 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/50000 dilution

Predicted band size: 21 kDa

Observed band size: 21 kDa



Western blot - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

Ras Western blot staining using rabbit Anti-Ras antibody

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST

Exposure time: 3 seconds.

All lanes:
Western blot - Anti-Ras antibody [EPR23474-20] (ab275875) at 1/1000 dilution

Lane 1:
Mouse colon tissue lysate at 40 µg

Lane 2:
Mouse stomach tissue lysate at 40 µg

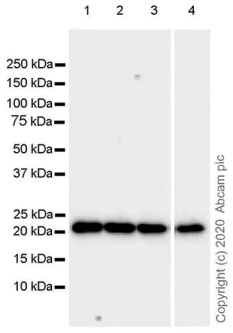
Lane 3:
Rat colon tissue lysate at 40 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/50000 dilution

Predicted band size: 21 kDa

Observed band size: 21 kDa



Western blot - Anti-Ras antibody [EPR23474-20] - BSA and Azide free (ab275884)

Ras Western blot staining using rabbit Anti-Ras antibody

This data was developed using ab275875, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: Lanes 1-3: 26 seconds; Lane 4: 70 seconds.

All lanes:
Western blot - Anti-Ras antibody [EPR23474-20] (ab275875) at 1/1000 dilution

Lane 1:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 2:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 3:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Lane 4:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/50000 dilution

Predicted band size: 21 kDa

Observed band size: 21 kDa

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