abcam

ab215263

Anti-MEK1 + MEK2 antibody [EPR16667] - 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	EPR16667
Purification technique	Affinity purification Protein A
Concentration	1.049 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	-

Notes	-

Expected

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

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

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

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.

Target data

See full target information MAP2K1

Function	Dual specificity protein kinase which acts as an essential component of the MAP kinase signal transduction pathway. Binding of extracellular ligands such as growth factors, cytokines and hormones to their cell-surface receptors activates RAS and this initiates RAF1 activation. RAF1 then further activates the dual-specificity protein kinases MAP2K1/MEK1 and MAP2K2/MEK2. Both MAP2K1/MEK1 and MAP2K2/MEK2 function specifically in the MAPK/ERK cascade, and catalyze the concomitant phosphorylation of a threonine and a tyrosine residue in a Thr-Glu-Tyr sequence located in the extracellular signal-regulated kinases MAPK3/ERK1 and MAPK1/ERK2, leading to their activation and further transduction of the signal

within the MAPK/ERK cascade. Activates BRAF in a KSR1 or KSR2-dependent manner; by binding to KSR1 or KSR2 releases the inhibitory intramolecular interaction between KSR1 or KSR2 protein kinase and N-terminal domains which promotes KSR1 or KSR2-BRAF dimerization and BRAF activation (PubMed:29433126). Depending on the cellular context, this pathway mediates diverse biological functions such as cell growth, adhesion, survival and differentiation, predominantly through the regulation of transcription, metabolism and cytoskeletal rearrangements. One target of the MAPK/ERK cascade is peroxisome proliferator-activated receptor gamma (PPARG), a nuclear receptor that promotes differentiation and apoptosis. MAP2K1/MEK1 has been shown to export PPARG from the nucleus. The MAPK/ERK cascade is also involved in the regulation of endosomal dynamics, including lysosome processing and endosome cycling through the perinuclear recycling compartment (PNRC), as well as in the fragmentation of the Golgi apparatus during mitosis.

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

ab215263 is the carrier-free version of ab178876.

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	MEK1 and MEK2 also known as MAP2K1 and MAP2K2 respectively are dual-specificity kinases that play roles in signaling pathways mediating cellular responses. MEK1 and MEK2 have molecular weights of approximately 45kDa. They are expressed in various tissues including the heart brain and skeletal muscles reflecting their widespread function within the organism. These proteins are often referred collectively as the MEK1/2 complex due to their shared and overlapping roles in cell signaling.
Biological function summary	MEK1 and MEK2 are integral parts of the mitogen-activated protein kinase (MAPK) signaling cascade. MEK1/2 phosphorylate and activate the ERK1/2 kinases which transmit signals from the cell surface to the nucleus regulating gene expression and cell fate decisions. The MEK1/2 proteins also act in concert with other kinases and substrates forming signaling complexes that ensure specific and regulated cellular outcomes.
Pathways	MEK1 and MEK2 play key roles within the MAPK/ERK pathway a critical signaling mechanism for cell division and survival. They also link to the RAS/MAPK pathway involved in transmitting signals from membrane receptors to the nucleus. In these pathways MEK1/2 interact with proteins like RAF kinases and ERK1/2 propagating signals that influence cellular growth and differentiation.
Associated diseases and disorders	MEK1 and MEK2 are implicated in cancer and neurological disorders. Abnormal activity of the MEK1/2 proteins often due to mutations can lead to uncontrolled cell proliferation contributing to the development of cancers such as melanoma. In neurological disorders dysregulation of MEK1/2 signaling relates to conditions like neuro-cardio-facial-cutaneous syndromes. These proteins interact with other key players in these diseases such as mutant RAF proteins in melanoma highlighting their critical roles 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.

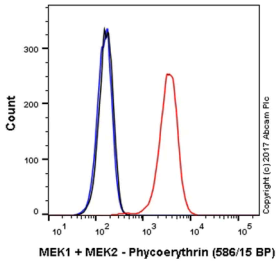
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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9 product images



Flow Cytometry (Intracellular) - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

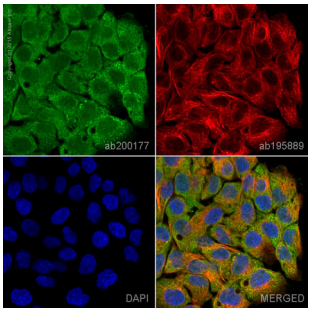
MEK1 + MEK2 Flow Cytometry (Intracellular) staining using rabbit Anti-MEK1 + MEK2 antibody

Clone EPR16667 (ab215263) has been successfully conjugated by Abcam. This image was generated using Anti-MEK1 + MEK2 antibody [EPR16667] (PE). Please refer to ab225265 for protocol details.
Overlay histogram showing A431 cells stained with ab225265 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab225265, 1/1000 dilution) for 30 min at 22°C.

Isotype control antibody (black line) was Rabbit IgG (monoclonal) Phycoerythrin (ab209478) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50 mW Yellow/Green laser (561nm) and 586/15 bandpass filter.

This antibody gave a positive signal in A431 cells fixed with 4% formaldehyde (10 min)/permeabilized with 0.1% PBS-Triton X-100 for 15 min used under the same conditions.



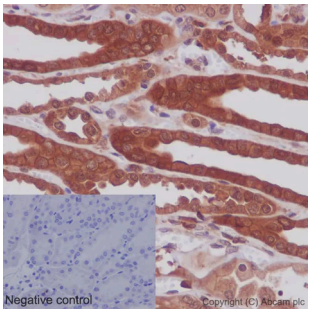
Immunocytochemistry/ Immunofluorescence - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

MEK1 + MEK2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MEK1 + MEK2 antibody

Clone EPR16667 (ab215263) has been successfully conjugated by Abcam. This image was generated using Anti-MEK1 + MEK2 antibody [EPR16667] (Alexa Fluor® 488). Please refer to ab200177 for protocol details.

ab200177 staining MEK1 + MEK2 in A431 cells. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab200177 at a 1/100 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at a 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

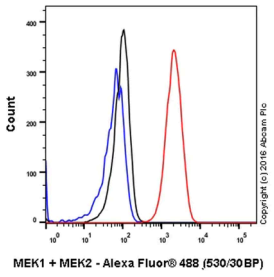
MEK1 + MEK2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEK1 + MEK2 antibody

Immunohistochemical analysis of paraffin-embedded Human renal medulla tissue labeling MEK1 + MEK2 with ab178876 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Renal tubule epithelial cells show strong cytoplasmic staining with some additional nuclear staining. Counter stained with Hematoxylin.

Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab178876).

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



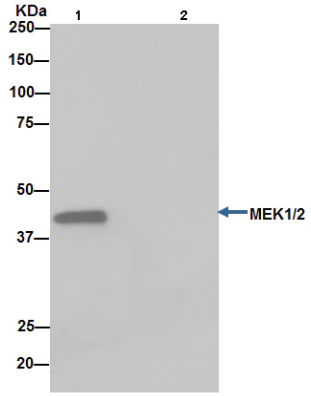
Flow Cytometry (Intracellular) - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

MEK1 + MEK2 Flow Cytometry (Intracellular) staining using rabbit Anti-MEK1 + MEK2 antibody

ab178876 staining MEK1 + MEK2 in the human cell line HeLa (human cervix adenocarcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde, permabilised with 90% methanol and the sample was incubated with the primary antibody at a dilution of 1/100. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody. Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab178876).



Immunoprecipitation - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

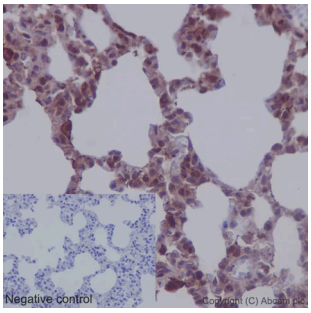
MEK1 + MEK2 was immunoprecipitated from 1mg of HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell extract with ab178876 at 1/120 dilution. Western blot was performed from the immunoprecipitate using ab178876 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution. Lane 1: HeLa whole cell extract. Lane 2: PBS instead of HeLa whole cell extract.

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

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab178876).

All lanes:
Immunoprecipitation - Anti-MEK1 + MEK2 antibody [EPR16667] (ab178876)

Predicted band size: 43 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

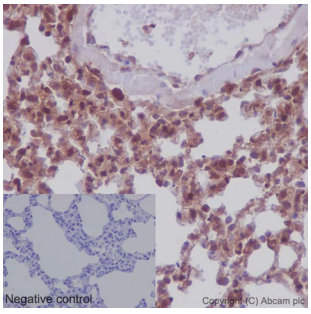
MEK1 + MEK2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEK1 + MEK2 antibody

Immunohistochemical analysis of paraffin-embedded Rat lung tissue labeling MEK1 + MEK2 with ab178876 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Alveolar epithelial cells show strong cytoplasmic staining with some additional nuclear staining. Counter stained with Hematoxylin.

Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab178876).

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

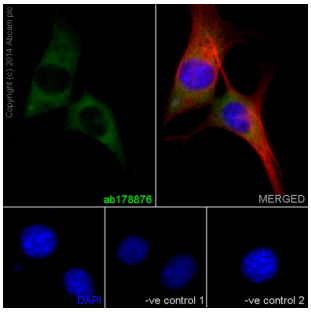
MEK1 + MEK2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEK1 + MEK2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse lung tissue labeling MEK1 + MEK2 with ab178876 at 1/500 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Alveolar epithelial cells show strong cytoplasmic staining with some additional nuclear staining. Counter stained with Hematoxylin.

Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab178876).

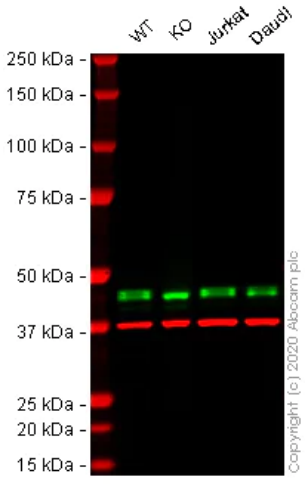
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

MEK1 + MEK2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MEK1 + MEK2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embyro fibroblast cells) cells labeling MEK1 + MEK2 with ab178876 at 1/100 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/200 dilution (green). Cytoplasmic staining on NIH/3T3 cell line is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows;
1. ab178876 at 1/100 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
2. ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/200 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab178876).



Western blot - Anti-MEK1 + MEK2 antibody [EPR16667] - BSA and Azide free (ab215263)

MEK1 + MEK2 Western blot staining using rabbit Anti-MEK1 + MEK2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab178876).
Lanes 1 - 4: Merged signal (red and green). Green - ab178876 observed at 45 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

ab178876 was shown to react with MEK2 in wild-type HEK-293T cells in western blot with loss of signal observed in MAP2K2 knockout sample. Wild-type HEK-293T and MAP2K2 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with ab178876 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 20000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-MEK1 + MEK2 antibody [EPR16667] (ab178876) at 1/20000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
MAP2K2 knockout HEK293T cell lysate at 20 µg

Lane 3:
Jurkat cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 43 kDa

Observed band size: 45 kDa

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