abcam

ab278723

Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2]

Recombinant | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human MAP2K1 pS218. The exact immunogen used to generate this antibody is proprietary information. Database link Q02750
Clone number	MEK12S217S221-H2
Purification technique	Affinity purification Protein A/G
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	0.001-1 µg/mL
Notes	-

WB

Tested

Species	Human
Dilution info	0.001-1 µg/mL
Notes	-

Target data

See full target information MAP2K1 pS218

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 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

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	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

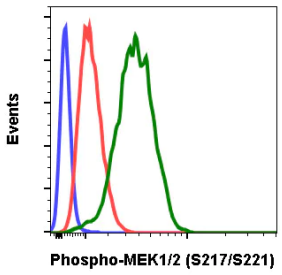
We do not recommend this combination. It is not covered by our product promise.

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.

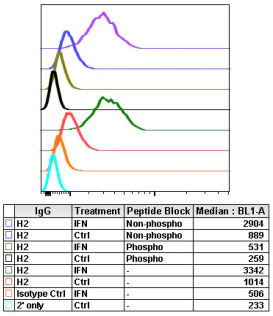
4 product images



Flow Cytometry - Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2] (ab278723)

MEK1 + MEK2 (phospho S218 + S222) Flow Cytometry staining using rabbit Anti-MEK1 + MEK2 (phospho S218 + S222) antibody

Flow cytometric analysis of Daudi cells secondary antibody only negative control (blue) or untreated (red) or treated with IFNa + IL-4 + pervanadate (green) using ab278723 at 0.01 µg/mL.

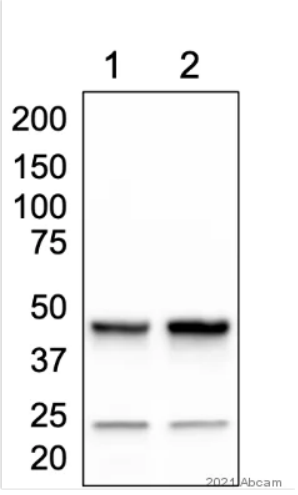


IgG	Treatment	Peptide Block	Median : BL1-A
H2	IFN	Non-phospho	2904
H2	Ctrl	Non-phospho	889
H2	IFN	Phospho	531
H2	Ctrl	Phospho	259
H2	IFN	-	3342
H2	Ctrl	-	1014
Isotype Ctrl	IFN	-	506
2° only	Ctrl	-	233

Flow Cytometry - Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2] (ab278723)

MEK1 + MEK2 (phospho S218 + S222) Flow Cytometry staining using rabbit Anti-MEK1 + MEK2 (phospho S218 + S222) antibody

Peptide blocking flow cytometric analysis of Daudi cells secondary antibody only negative control (light blue) or stained with isotype control (orange) or untreated (red) or treated with IFNa + IL-4 + pervanadate (green) or untreated and blocked with phospho peptide (gold) or treated and blocked with phospho peptide (black) or untreated and blocked with non-phospho peptide (dark blue) or treated and blocked with non-phospho peptide (purple) using ab278723 at 0.01 µg/mL.



This image is courtesy of an anonymous customer review

Western blot - Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2] (ab278723)

MEK1 + MEK2 (phospho S218 + S222) Western blot staining using rabbit Anti-MEK1 + MEK2 (phospho S218 + S222) antibody

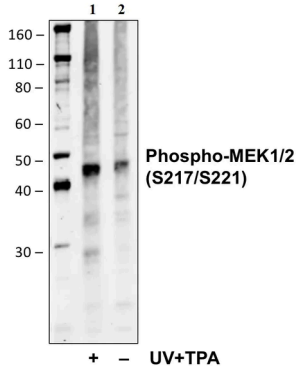
4-15% Gel. Blocking was done using 5% milk for 1 hour at 25°C
All lanes:
Western blot - Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2] (ab278723) at 1/1000 dilution

Lane 1:
HEK293T cells Serum starved overnight at 25 µg

Lane 2:
HEK293T cells Serum starved overnight then stimulated with EGF for 30 min at 25 µg

Secondary

All lanes:
HRP-conjugated affinipure goat anti-rabbit at 1/5000 dilution



Western blot - Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2] (ab278723)

All lanes:
Western blot - Anti-MEK1 + MEK2 (phospho S218 + S222) antibody [MEK12S217S221-H2] (ab278723) at 0.1 µg/mL

Lane 1:
HeLa cell extract treated with UV+TPA

Lane 2:
HeLa cell extract untreated with UV+TPA

Predicted band size: 43 kDa

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