abcam

ab278654

PE Anti-MEK4/MKK4 (phospho S257) antibody [SEK1MKK4S257-C5]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human MAP2K4 phospho S257. The exact immunogen used to generate this antibody is proprietary information. Database link P45985
Clone number	SEK1MKK4S257-C5
Purification technique	Affinity purification Protein A/G
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	5 µL for 10^6 Cells
Notes	-

Target data

See full target information MAP2K4 phospho S257

Function	Dual specificity protein kinase which acts as an essential component of the MAP kinase signal transduction pathway. Essential component of the stress-activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling pathway. With MAP2K7/MKK7, is the one of the only known kinase to directly activate the stress-activated protein kinase/c-Jun N-terminal kinases MAPK8/JNK1, MAPK9/JNK2 and MAPK10/JNK3. MAP2K4/MKK4 and MAP2K7/MKK7 both activate the JNKs by phosphorylation, but they differ in their preference for the phosphorylation site in the Thr-Pro-Tyr motif. MAP2K4 shows preference for phosphorylation of the Tyr residue and MAP2K7/MKK7 for the Thr residue. The phosphorylation of the Thr residue by MAP2K7/MKK7 seems to be the prerequisite for JNK activation at least in response to pro-inflammatory cytokines, while other stimuli activate both MAP2K4/MKK4 and MAP2K7/MKK7 which synergistically phosphorylate JNKs. MAP2K4 is required for maintaining peripheral lymphoid homeostasis. The MKK/JNK signaling pathway is also involved in mitochondrial death signaling pathway, including the release cytochrome c, leading to apoptosis. Whereas MAP2K7/MKK7 exclusively activates JNKs, MAP2K4/MKK4 additionally activates the p38 MAPKs MAPK11, MAPK12, MAPK13 and MAPK14.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Store in the dark

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	MEK4 also known as MKK4 is a protein kinase with a molecular weight of approximately 43 kDa. It functions as a dual-specificity kinase that phosphorylates and activates other kinases in cellular signaling pathways. MEK4 appears in various tissues including heart brain and skeletal muscle. It acts as an essential component in transmitting extracellular signals to downstream effectors and is involved in critical cellular processes like proliferation differentiation and apoptosis.
Biological function summary	MEK4 acts as an upstream kinase in the MAPK signaling cascade. Through its role in this pathway it is part of a larger signaling complex. MEK4 specifically activates JUN N-terminal kinase (JNK) by phosphorylation. JNK further regulates gene expression by influencing transcription factors impacting cellular responses. This makes MEK4 a pivotal element in facilitating messenger roles that allow cells to adapt to changing environments such as stress responses and immune reactions.
Pathways	MEK4 plays significant roles in the MAPK and stress-activated protein kinase (SAPK) pathways. In the MAPK pathway MEK4 phosphorylates JNK thereby influencing cellular responses to environmental changes. Within the SAPK pathway MEK4 interacts with other kinases such as MKK7 to modulate cellular responses further. The flow of signals through these pathways affects cell fate cell cycle regulation and programmed cell death demonstrating its comprehensive influence on cell physiology.
Associated diseases and disorders	MEK4 shows involvement in cancer progression and neurodegenerative diseases. Abnormal activation of MEK4 can contribute to tumor growth and metastasis in cancers such as prostate and ovarian cancer by enhancing JNK signaling. In neurodegenerative disorders deregulation of MEK4-related pathways might lead to neuronal damage or apoptosis. Proteins like JNK and other MAP kinases become dysregulated in these conditions illustrating the interconnected role of MEK4 in disease mechanisms. Phospho flow cytometry can be utilized to measure alterations in MEK4 phosphorylation states aiding in elucidating its role in disease contexts.

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.

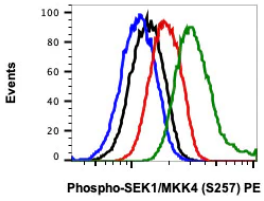
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Flow Cytometry - PE Anti-MEK4/MKK4 (phospho S257) antibody [SEK1MKK4S257-C5] (ab278654)

MEK4/MKK4 (phospho S257) Flow Cytometry staining using rabbit Anti-MEK4/MKK4 (phospho S257) antibody

Flow cytometric analysis of 293T cells treated with lambda phosphatase (red) or treated with UV (100 mJ/cm^2)+TPA (200nM, 1 hr recovery ; green) using ab278654, or concentration-matched Rabbit (G9) mAb IgG Isotype Control (PE Conjugate) for cells treated with lambda phosphatase (black) or treated with UV+TPA (blue).

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