abcam

ab52618

Anti-MKK7 antibody [EP1455Y]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1455Y
Purification technique	Affinity purification Protein A
Concentration	0.904 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/10000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information MAP2K7

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 MAP2K4/MKK4, 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/MKK4 shows preference for phosphorylation of the Tyr residue and MAP2K7/MKK7 for the Thr residue. The monophosphorylation of JNKs on the Thr residue is sufficient to increase JNK activity indicating that MAP2K7/MKK7 is important to trigger JNK activity, while the additional phosphorylation of the Tyr residue by MAP2K4/MKK4 ensures optimal JNK activation. Has a specific role in JNK signal transduction pathway activated by pro-inflammatory cytokines. The MKK/JNK signaling pathway is also involved in mitochondrial death signaling pathway, including the release cytochrome c, leading to apoptosis. Part of a non-canonical MAPK signaling pathway, composed of the upstream MAP3K12 kinase and downstream MAP kinases MAPK1/ERK2 and MAPK3/ERK1, that enhances the AP-1-mediated transcription of APP in response to APOE (PubMed:28111074).

Storage

Shipped at conditions	Conditional Ambient
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

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	MKK7 also known as MAP2K7 or Mitogen-activated protein kinase kinase 7 is a dual-specificity kinase involved in the phosphorylation of target proteins. It functions as a critical member of the MAP2K family with a molecular mass of approximately 44 kDa. MKK7 is widely expressed in various tissues including the brain and immune cells which indicates its diverse functional roles across different biological systems.
Biological function summary	MKK7 plays an essential role in the activation of the JNK (c-Jun N-terminal kinases) signaling pathway by phosphorylating and activating JNK. It operates as part of a signaling complex that responds to stress stimuli. This kinase is involved in numerous cellular processes such as apoptosis differentiation and inflammatory responses. The regulation of these processes by MKK7 impacts many aspects of cellular homeostasis and response to environmental changes.
Pathways	MKK7 is integrally involved in the stress-activated MAPK pathway and the cellular response to inflammatory cytokines. It closely collaborates with related proteins such as JNK1 JNK2 and JNK3 to mediate its downstream effects. Activation of this pathway leads to the modulation of gene expression that governs cell survival proliferation and other critical cellular functions.
Associated diseases and disorders	Dysregulation of MKK7 activity connects the protein to disorders like cancer and neurodegenerative diseases. Altered MKK7-JNK signaling contributes to the pathogenesis of certain cancers by affecting cell proliferation and survival mechanisms. In neurodegenerative diseases MKK7-mediated pathways are associated with neuronal stress responses and cell death highlighting its interaction with proteins like Amyloid-beta in Alzheimer's disease. Understanding MKK7's role in these conditions offers potential for therapeutic interventions.

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.

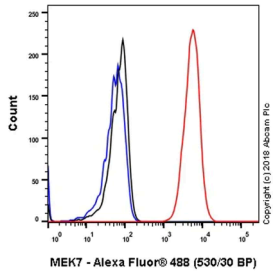
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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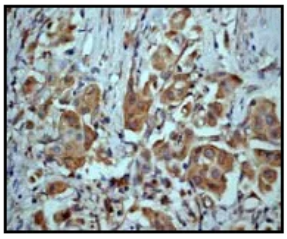
5 product images



Flow Cytometry (Intracellular) - Anti-MKK7 antibody [EP1455Y] (ab52618)

MKK7 Flow Cytometry (Intracellular) staining using rabbit Anti-MKK7 antibody

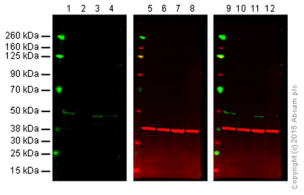
Intracellular Flow Cytometry analysis ofMCF7 (Human breast adenocarcinoma epithelial cell) cells labeling MKK7 with ab52618at 1/100 dilution (1µg) (Red). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody. Cells were fixed with4% paraformaldehyde. Rabbit monoclonal IgG (ab172730) was used as isotype control (Black). Unlabelled control: Cells without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MKK7 antibody [EP1455Y] (ab52618)

MKK7 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MKK7 antibody

ab52618 at 1/50 dilution staining human baldder tissue; paraffin embedded.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



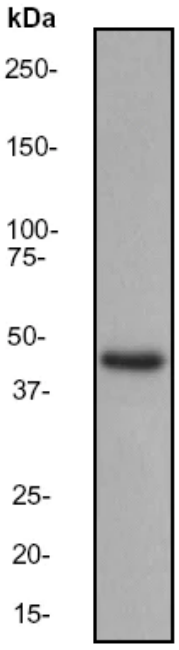
Western blot - Anti-MKK7 antibody [EP1455Y] (ab52618)

MKK7 Western blot staining using rabbit Anti-MKK7 antibody

Lanes 1, 5 and 9: Wild-type HAP1 cell lysate (20 µg)
Lanes 2, 6 and 10: MEK7 knockout HAP1 cell lysate (20 µg)
Lanes 3, 7 and 11: HeLa cell lysate (20 µg)
Lanes 4, 8 and 12: A431 cell lysate (20 µg)

Lanes 1, 2, 3 and 4: Green signal from target - ab52618 observed at 47 kDa
Lanes 5, 6, 7 and 8: Red signal from loading control - ab8245 observed at 37 kDa
Lanes 9, 10, 11 and 12: Merged (red and green) signal
ab52618 was shown to specifically react with MEK7 when MEK7 knockout samples were used. Wild-type and MEK7 knockout samples were subjected to SDS-PAGE. ab52618 and ab8245 (loading control to GAPDH) were diluted 1/10 000 and 1/2000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-MKK7 antibody [EP1455Y] (ab52618)

Predicted band size: 47 kDa



Western blot - Anti-MKK7 antibody [EP1455Y] (ab52618)

All lanes:
Western blot - Anti-MKK7 antibody [EP1455Y] (ab52618) at 1/10000 dilution

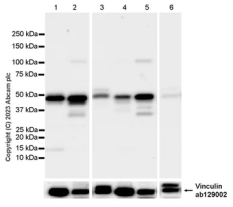
All lanes:
HeLa cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP antibody at 1/2000 dilution

Predicted band size: 47 kDa

Observed band size: 47 kDa



Western blot - Anti-MKK7 antibody [EP1455Y] (ab52618)

MKK7 Western blot staining using rabbit Anti-MKK7 antibody

Dilution and blocking buffer: 5% NFDM/TBST.

Low expression control: mouse and rat skeletal muscle.

In Western blot, anti-Vinculin antibody (ab129002) loading control staining at 1/10000 dilution.

All lanes:
Western blot - Anti-MKK7 antibody [EP1455Y] (ab52618) at 1/1000 dilution

Lane 1:
Mouse testis tissue lysate at 20 µg

Lane 2:
Mouse brain tissue lysate at 20 µg

Lane 3:
Mouse skeletal muscle tissue lysate (Low expression control) at 20 µg

Lane 4:
Rat testis tissue lysate at 20 µg

Lane 5:
Rat brain tissue lysate at 20 µg

Lane 6:
Rat skeletal muscle tissue lysate (Low expression control) at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 47 kDa

Exposure time: 15s

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