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MAPK8 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7505a

Product Information

Application	IF, IHC-P, WB, E
Primary Accession	P45983
Other Accession	P49185
Reactivity	Human, Rat, Mouse
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	48296
Antigen Region	358-389

Additional Information

Gene ID	5599
Other Names	Mitogen-activated protein kinase 8, MAP kinase 8, MAPK 8, JNK-46, Stress-activated protein kinase 1c, SAPK1c, Stress-activated protein kinase JNK1, c-Jun N-terminal kinase 1, MAPK8, JNK1, PRKM8, SAPK1, SAPK1C
Target/Specificity	This MAPK8 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 358-389 amino acids from the C-terminal region of human MAPK8.
Dilution	IF~~1:10~50 IHC-P~~1:100~500 WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MAPK8 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAPK8
Function	Serine/threonine-protein kinase involved in various processes such as cell

proliferation, differentiation, migration, transformation and programmed cell death. Extracellular stimuli such as pro- inflammatory cytokines or physical stress stimulate the stress- activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling pathway (PubMed:28943315). In this cascade, two dual specificity kinases MAP2K4/MKK4 and MAP2K7/MKK7 phosphorylate and activate MAPK8/JNK1. In turn, MAPK8/JNK1 phosphorylates a number of transcription factors, primarily components of AP-1 such as JUN, JDP2 and ATF2 and thus regulates AP-1 transcriptional activity (PubMed:18307971). Phosphorylates the replication licensing factor CDT1, inhibiting the interaction between CDT1 and the histone H4 acetylase HBO1 to replication origins (PubMed:21856198). Loss of this interaction abrogates the acetylation required for replication initiation (PubMed:21856198). Promotes stressed cell apoptosis by phosphorylating key regulatory factors including p53/TP53 and Yes- associates protein YAP1 (PubMed:21364637). In T-cells, MAPK8 and MAPK9 are required for polarized differentiation of T-helper cells into Th1 cells. Contributes to the survival of erythroid cells by phosphorylating the antagonist of cell death BAD upon EPO stimulation (PubMed:21095239). Mediates starvation-induced BCL2 phosphorylation, BCL2 dissociation from BECN1, and thus activation of autophagy (PubMed:18570871). Phosphorylates STMN2 and hence regulates microtubule dynamics, controlling neurite elongation in cortical neurons (By similarity). In the developing brain, through its cytoplasmic activity on STMN2, negatively regulates the rate of exit from multipolar stage and of radial migration from the ventricular zone (By similarity). Phosphorylates several other substrates including heat shock factor protein 4 (HSF4), the deacetylase SIRT1, ELK1, or the E3 ligase ITCH (PubMed:16581800, PubMed:17296730, PubMed:20027304). Phosphorylates the CLOCK-BMAL1 heterodimer and plays a role in the regulation of the circadian clock (PubMed:22441692). Phosphorylates the heat shock transcription factor HSF1, suppressing HSF1-induced transcriptional activity (PubMed:10747973). Phosphorylates POU5F1, which results in the inhibition of POU5F1's transcriptional activity and enhances its proteasomal degradation (By similarity). Phosphorylates JUND and this phosphorylation is inhibited in the presence of MEN1 (PubMed:22327296). In neurons, phosphorylates SYT4 which captures neuronal dense core vesicles at synapses (By similarity). Phosphorylates EIF4ENIF1/4-ET in response to oxidative stress, promoting P-body assembly (PubMed:22966201). Phosphorylates SIRT6 in response to oxidative stress, stimulating its mono-ADP-ribosyltransferase activity (PubMed:27568560). Phosphorylates NLRP3, promoting assembly of the NLRP3 inflammasome (PubMed:28943315). Phosphorylates ALKBH5 in response to reactive oxygen species (ROS), promoting ALKBH5 sumoylation and inactivation (PubMed:34048572).

Cellular Location

Cytoplasm. Nucleus. Synapse {ECO:0000250|UniProtKB:P49185}. Note=In the cortical neurons, predominantly cytoplasmic and associated with the Golgi apparatus and endosomal fraction. Increased neuronal activity increases phosphorylated form at synapses (By similarity). Colocalizes with POU5F1 in the nucleus. {ECO:0000250|UniProtKB:P49185, ECO:0000250|UniProtKB:Q91Y86}

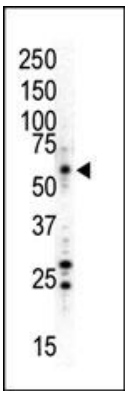
Background

JNK1 is a member of the MAP kinase family. MAP kinases act as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. This kinase is activated by various cell stimuli, and targets specific transcription factors, and thus mediates immediate-early gene expression in response to cell stimuli. The activation of this kinase by tumor-necrosis factor alpha (TNF-alpha) is found to be required for TNF-alpha induced apoptosis. This kinase is also involved in UV radiation induced apoptosis, which is thought to be related to cytochrom c-mediated cell death pathway. Studies of the mouse counterpart of this gene suggested that this kinase play a key role in T cell proliferation, apoptosis and differentiation.

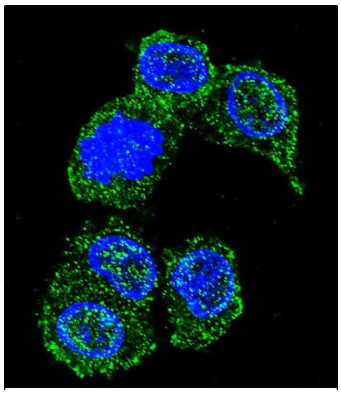
References

Deng, Y., et al., Cell 115(1):61-70 (2003).
Luo, W., et al., J. Biol. Chem. 278(39):37451-37458 (2003).
Ghosh, J., Biochem. Biophys. Res. Commun. 307(2):342-349 (2003).
Utsugi, M., et al., J. Immunol. 171(2):628-635 (2003).
Vivo, C., et al., J. Biol. Chem. 278(28):25461-25467 (2003).

Images



Western blot analysis of anti-JNK1 Pab (Cat. #AP7505a) in HL60 (UV-treated) cell lysate. JNK1 (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.



Confocal immunofluorescent analysis of MAPK8 Antibody (C-term)(Cat#AP7505a) with HepG2 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).



MAPK8 Antibody (C-term) (Cat. #AP7505a)immunohistochemistry analysis in formalin fixed and paraffin embedded human breast tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of MAPK8 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

Citations

- Expression genetics identifies spinal mechanisms supporting formalin late phase behaviors.

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