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# MAPK10 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7222a

## Product Information

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| **Application** | WB, IHC-P, E |
| **Primary Accession** | P53779 |
| **Reactivity** | Human, Rat, Mouse |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Calculated MW** | 52585 |
| **Antigen Region** | 7-34 |

## Additional Information

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| **Gene ID** | 5602 |
| **Other Names** | Mitogen-activated protein kinase 10, MAP kinase 10, MAPK 10, MAP kinase p49 3F12, Stress-activated protein kinase 1b, SAPK1b, Stress-activated protein kinase JNK3, c-Jun N-terminal kinase 3, MAPK10, JNK3, JNK3A, PRKM10, SAPK1B |
| **Target/Specificity** | This MAPK10 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 7-34 amino acids from the N-terminal region of human MAPK10. |
| **Dilution** | WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification. |
| **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** | MAPK10 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | MAPK10 |
| **Synonyms** | JNK3, JNK3A, PRKM10, SAPK1B |
| **Function** | Serine/threonine-protein kinase involved in various processes such as |

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| | neuronal proliferation, differentiation, migration 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. In this cascade, two dual specificity kinases MAP2K4/MKK4 and MAP2K7/MKK7 phosphorylate and activate MAPK10/JNK3. In turn, MAPK10/JNK3 phosphorylates a number of transcription factors, primarily components of AP-1 such as JUN and ATF2 and thus regulates AP-1 transcriptional activity. Plays regulatory roles in the signaling pathways during neuronal apoptosis. Phosphorylates the neuronal microtubule regulator STMN2. Acts in the regulation of the amyloid-beta precursor protein/APP signaling during neuronal differentiation by phosphorylating APP. Also participates in neurite growth in spiral ganglion neurons. Phosphorylates the CLOCK-BMAL1 heterodimer and plays a role in the photic regulation of the circadian clock (PubMed:22441692). Phosphorylates JUND and this phosphorylation is inhibited in the presence of MEN1 (PubMed:22327296). |
| **Cellular Location** | Cytoplasm. Membrane; Lipid-anchor. Nucleus Mitochondrion. Note=Palmitoylation regulates MAPK10 trafficking to cytoskeleton. Recruited to the mitochondria in the presence of SARM1 (By similarity). |
| **Tissue Location** | Specific to a subset of neurons in the nervous system. Present in the hippocampus and areas, cerebellum, striatum, brain stem, and weakly in the spinal cord. Very weak expression in testis and kidney |

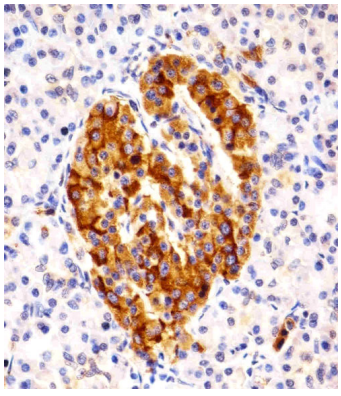
## Background

MAPK10 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 protein is a neuronal-specific form of c-Jun N-terminal kinases (JNKs). Through its phosphorylation and nuclear localization, this kinase plays regulatory roles in the signaling pathways during neuronal apoptosis. Beta-arrestin 2, a receptor-regulated MAP kinase scaffold protein, is found to interact with, and stimulate the phosphorylation of this kinase by MAP kinase kinase 4 (MKK4). Cyclin-dependent kinase 5 can phosphorylate, and inhibit the activity of this kinase, which may be important in preventing neuronal apoptosis.

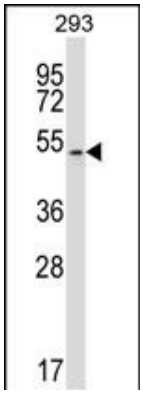
## References


Li, B.S., et al., EMBO J. 21(3):324-333 (2002).
Yoshida, S., et al., J. Hum. Genet. 47(11):614-619 (2002).
McDonald, P.H., et al., Science 290(5496):1574-1577 (2000).
Yang, D.D., et al., Nature 389(6653):865-870 (1997).
Gupta, S., et al., EMBO J. 15(11):2760-2770 (1996).


## Images



Immunohistochemical analysis of paraffin-embedded H. pancreas section using MAPK10 Antibody (N-term)(Cat#AP7222a). AP7222a was diluted at 1:25 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.




MAPK10 Antibody (C21) (Cat. #AP7222a) western blot analysis in SH-SY5Y cell line lysates (35ug/lane).This demonstrates the MAPK10 antibody detected the MAPK10 protein (arrow).

## Citations

- c-Jun N-terminal kinase 3 deficiency protects axotomized retinal ganglion cells affecting mitochondria involved apoptosis pathway.