Recombinant Mouse Mapk8 Protein, Myc/DDK-tagged

Cat. No. Mapk8-3945M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Purified recombinant protein of mouse full-length mitogen-activated protein kinase 8 (Mapk8), with C-terminal MYC/DDK tag, expressed in HEK293T cells.
Species	Mouse
Source	HEK293
Description	Serine/threonine-protein kinase involved in various processes such as cell proliferation, differentiation, migration, transformation and programmed cell death. Extracellular stimuli such as proinflammatory 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 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. Phosphorylates the replication licensing factor CDT1, inhibiting the interaction between CDT1 and the histone H4 acetylase HBO1 to replication origins. Loss of this interaction abrogates the acetylation required for replication initiation. Promotes stressed cell apoptosis by phosphorylating key regulatory factors including p53/TP53 and Yes-associates protein YAP1. 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. Mediates starvation-induced BCL2 phosphorylation, BCL2 dissociation from BECN1, and thus activation of autophagy. Phosphorylates STMN2 and hence

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	regulates microtubule dynamics, controlling neurite elongation in cortical neurons. 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. Phosphorylates several other substrates including heat shock factor protein 4 (HSF4), the deacetylase SIRT1, ELK1, or the E3 ligase ITCH. Phosphorylates the CLOCK-ARNTL/BMAL1 heterodimer and plays a role in the regulation of the circadian clock Phosphorylates the heat shock transcription factor HSF1, suppressing HSF1-induced transcriptional activity. Phosphorylates POU5F1, which results in the inhibition of POU5F1's transcriptional activity and enhances its proteosomal degradation Phosphorylates JUND and this phosphorylation is inhibited in the presence of MEN1. In neurons, phosphorylates SYT4 which captures neuronal dense core vesicles at synapses. Phosphorylates EIF4ENIF1/4-ET in response to oxidative stress, promoting P-body assembly.
Molecular Mass	44.7 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 μg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Mapk8 mitogen-activated protein kinase 8 [Mus musculus (house mouse)]

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Official Symbol	Mapk8
Synonyms	MAPK8; mitogen-activated protein kinase 8; MAPK 8; MAP kinase 8; JNK1 beta1 protein kinase; c-Jun N-terminal kinase 1; mitogen activated protein kinase 8; protein kinase mitogen-activated 8; stress-activated protein kinase JNK1; JNK; JNK1; Prkm8; SAPK1; AI849689
Gene ID	26419
mRNA Refseq	NM_016700
Protein Refseq	NP_057909
UniProt ID	Q91Y86

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