

Recombinant Mouse MK09 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51979

Size: 10ug, 100ug

Protein Name: Mitogen-activated protein kinase 9 (MAP kinase 9) (MAPK 9) (EC 2.7.11.24)
(Stress-activated protein kinase JNK2) (c-Jun N-terminal kinase 2)

Synonym: Mapk9, Jnk2, Prkm9

UniProt ID: Q9WTU6

UniProt Link: www.uniprot.org/uniprotkb/Q9WTU6/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 423 AA

Molecular Weight: 48 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSDSKSDGQFYSVQVADSTFTVLKRYQQLKPIGSGAQQGIVCAAFDITVLGINVAVKKLSRPFQNQTHA
KRAYRELVLLKCVNHKNIISLLNVFTPQKTLEEFQDVYLVMEMLDANLCQVIHMELDHERMSYLLYQM
LCGIKHLHSAGIIHRDLKPSNIVKSDCTLKILDFGLARTACTNFMMPYVVTRYRAPEVILGMGYKE
NVDIWSVGCIMAEMVLHKVLFPGRDYIDQWNKVIEQLGTPSAEFMKKLQPTVRNYVENRPKYPGIKF
EELFPDWIFPSESERDKIKTSQARDLLSKMLVIDPDKRISVDEALRHPYITVWYDPAEAEAPPPQIYDA
QLEEREHAIEEWKELIYKEVMDWEERSKNGVKDQPSDAAVSSKATPSQSSSINDISSMSTEHTLASD
TDSSLDASTGPLEGCR

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Mitogen-activated protein kinase 9 (MAP kinase 9) (MAPK 9) (EC 2.7.11.24) (Stress-activated protein kinase JNK2) (c-Jun N-terminal kinase 2) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Serine/threonine-protein kinase involved in various processes such as cell proliferation, differentiation, migration, transformation and programmed cell death (PubMed:10811224, PubMed:11562351, PubMed:16973441, PubMed:21554942, PubMed:22441692, PubMed:29153991, PubMed:9806643). 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:10811224, PubMed:11562351, PubMed:16973441, PubMed:21554942, PubMed:22441692, PubMed:29153991, PubMed:9806643). In this cascade, two dual specificity kinases MAP2K4/MKK4 and MAP2K7/MKK7 phosphorylate and activate MAPK9/JNK2 (By similarity). In turn, MAPK9/JNK2 phosphorylates a number of transcription factors, primarily components of AP-1 such as JUN and ATF2 and thus regulates AP-1 transcriptional activity (By similarity). In response to oxidative or ribotoxic stresses, inhibits rRNA synthesis by phosphorylating and inactivating the RNA polymerase 1-specific transcription initiation factor RRN3 (By similarity). Promotes stressed cell apoptosis by phosphorylating key regulatory factors including TP53 and YAP1 (By similarity). In T-cells, MAPK8 and MAPK9 are required for polarized differentiation of T-helper cells into Th1 cells (PubMed:10811224). Upon T-cell receptor (TCR) stimulation, is activated by CARMA1, BCL10, MAP2K7 and MAP3K7/TAK1 to regulate JUN protein levels (PubMed:10811224). Plays an important role in the osmotic stress-induced epithelial tight-junctions disruption (By similarity). When activated, promotes beta-catenin/CTNNB1 degradation and inhibits the canonical Wnt signaling pathway (By similarity). Also participates in neurite growth in spiral ganglion neurons (PubMed:21554942). Phosphorylates the CLOCK-BMAL1 heterodimer and plays a role in the regulation of the circadian clock (PubMed:22441692). Phosphorylates POU5F1, which results in the inhibition of POU5F1's transcriptional activity and enhances its proteasomal degradation (PubMed:29153991). Phosphorylates ALKBH5 in response to reactive oxygen species (ROS), promoting ALKBH5 sumoylation and inactivation (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Note=Colocalizes with POU5F1 in the nucleus.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.