

Recombinant Rat MAPK3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52525

Size: 10ug, 100ug

Protein Name: MAP kinase-activated protein kinase 3 (MAPK-activated protein kinase 3) (MAPKAP kinase 3) (MAPKAP-K3) (MAPKAPK-3) (MK-3) (EC 2.7.11.1)

Synonym: Mapkapk3

UniProt ID: Q66H84

UniProt Link: www.uniprot.org/uniprotkb/Q66H84/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 384 AA

Molecular Weight: 43 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDGETAGEKGSLVPQPGALGAPALGGAPAPGVRREPKKYAVTDDYQLSKQVLGLGVNGKVLECYH
RRSGQKCALKLLYDSPKARQEVDDHHWQASGGPHIVRILDVYENMHGKRCLLIVMECMEGGELFSR
IQERGDQAFTEREAAEIMRDIGTAIQFLHSQNIHRDVKPENLLYTSKEKDAVLKLTDFGFAKETTTQNA
LQTPCYTPYYVAPEVLGPEKYDKSCDMWSLGVIMYILLCGFPFYSNTGQAISPGMKRRIRLGQYGF
PKPEWADVSEDAKQLIRLLLKTDPTERLTIMQFMNHPWINQSMEVPQTPLHTARVLEEDKDHWDVV
KEEMTSALATMRVDYDQVKIKDLKTSNNRLLNKRRKKQGGSSSASPGCENNQ

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 MAP kinase-activated protein kinase 3 (MAPK-activated protein kinase 3) (MAPKAP kinase 3) (MAPKAP-K3) (MAPKAPK-3) (MK-3) (EC 2.7.11.1) 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: Stress-activated serine/threonine-protein kinase involved in cytokines production, endocytosis, cell migration, chromatin remodeling and transcriptional regulation. Following stress, it is phosphorylated and activated by MAP kinase p38-alpha/MAPK14, leading to phosphorylation of substrates. Phosphorylates serine in the peptide sequence, Hyd-X-R-X(2)-S, where Hyd is a large hydrophobic residue. MAPKAPK2 and MAPKAPK3, share the same function and substrate specificity, but MAPKAPK3 kinase activity and level in protein expression are lower compared to MAPKAPK2. Phosphorylates HSP27/HSPB1, KRT18, KRT20, RCSD1, RPS6KA3, TAB3 and TTP/ZFP36. Mediates phosphorylation of HSP27/HSPB1 in response to stress, leading to dissociate HSP27/HSPB1 from large small heat-shock protein (sHsps) oligomers and impair their chaperone activities and ability to protect against oxidative stress effectively. Involved in inflammatory response by regulating tumor necrosis factor (TNF) and IL6 production post-transcriptionally: acts by phosphorylating AU-rich elements (AREs)-binding proteins, such as TTP/ZFP36, leading to regulate the stability and translation of TNF and IL6 mRNAs. Phosphorylation of TTP/ZFP36, a major post-transcriptional regulator of TNF, promotes its binding to 14-3-3 proteins and reduces its ARE mRNA affinity leading to inhibition of dependent degradation of ARE-containing transcript. Involved in toll-like receptor signaling pathway (TLR) in dendritic cells: required for acute TLR-induced macropinocytosis by phosphorylating and activating RPS6KA3. Also acts as a modulator of Polycomb-mediated repression (By similarity).

Subcellular Localization: Nucleus . Cytoplasm . Note=Predominantly located in the nucleus, when activated it translocates to the cytoplasm.

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.