

Recombinant Rat MK07 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52263

Size: 10ug, 100ug

Protein Name: Mitogen-activated protein kinase 7 (MAP kinase 7) (MAPK 7) (EC 2.7.11.24) (Big MAP kinase 1) (BMK-1) (Extracellular signal-regulated kinase 5) (ERK-5)

Synonym: Mapk7, Bmk1, Erk5

UniProt ID: P0C865

UniProt Link: www.uniprot.org/uniprotkb/P0C865/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 806 AA

Molecular Weight: 88 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAEPLKEEDGEDGSGEPPGRVKAEPVHTAASVVAKNLALLKARSFDVTFDVGDEYEIIETIGNGAYG
VVSSARRRLTGQQVAIKKIPNAFDVVTNAKRTLRELKILKHKHDNIIAIKDILRPTVPYGEFRSVYVVL
DLMESDLHQIIHSSQPLTLEHVRYFLYQLLRGLKYMHSQAQVIHRDLKPSNLLVNENCELKIGDFGMAR
GLCTSPAEHQYFMTEYVATRWYRAPELMLSLHEYTQAIDLWSVGCIFGEMLARRQLFPGKNYVHQL
QLIMMVLGTPSPAVIQAVGAERVRAIYQSLPPRQPVPWETVYPGADRQALSLLGRMLRFEPSARISA
AAALRHPFLAKYHDPDDEPDCAPPFDFAFDREALTRERIKEAIVAEIEDFHARREGIRQQIRFQPSLQ
PVASEPVCPCDVEMPSPWAPSGDCAMESPPPALPPCSGPAPDVTDLTLQPAPPASELAPPKREGAIS
DNTKAALKAALLKSLRSRLRDGPSAPLEAPEPRKPVTAQERQREREKRRRRQERAKEREREKRRQE
RERKERGAGTLGGPSTDPLAGLVLSNDNRSLLERWTRMARPPVPAPAPAPAPTPKPSSAQPTSP
NGPVSQSTAPLQPAGSIPGPASQPVCPGPGVPQAGPVPAPLQTAPSTSLLASQSLVPPSGLPGS
GAPEVLPHYFSPGPPPPDGLTPQPSTSESPDVNLVTQQLSKSQVEDPLPPVFSGTPKGSGAGYGVG
FDLEEFNLQSFDMGVADGPQDQGQADSASLSASLLADWLLEGHGMNPADIESLQREIQMDSPMLLSDL
PDLQEP

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 7 (MAP kinase 7) (MAPK 7) (EC 2.7.11.24) (Big MAP kinase 1) (BMK-1) (Extracellular signal-regulated kinase 5) (ERK-5) 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: Plays a role in various cellular processes such as proliferation, differentiation and cell survival. The upstream activator of MAPK7 is the MAPK kinase MAP2K5. Upon activation, it translocates to the nucleus and phosphorylates various downstream targets including MEF2C. EGF activates MAPK7 through a Ras-independent and MAP2K5-dependent pathway. As part of the MAPK/ERK signaling pathway, acts as a negative regulator of apoptosis in cardiomyocytes via interaction with STUB1/CHIP and promotion of STUB1-mediated ubiquitination and degradation of ICER-type isoforms of CREM (PubMed:20724525). May have a role in muscle cell differentiation. May be important for endothelial function and maintenance of blood vessel integrity. MAP2K5 and MAPK7 interact specifically with one another and not with MEK1/ERK1 or MEK2/ERK2 pathways. Phosphorylates SGK1 at Ser-78 and this is required for growth factor-induced cell cycle progression (By similarity). Involved in the regulation of p53/TP53 by disrupting the PML-MDM2 interaction (By similarity).

Subcellular Localization: Cytoplasm. Nucleus. Nucleus, PML body . Note=Translocates to the nucleus upon activation.

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.