

Recombinant Mouse IKKA Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51614

Size: 10ug, 100ug

Protein Name: Inhibitor of nuclear factor kappa-B kinase subunit alpha (I-kappa-B kinase alpha) (IKK-A) (IKK-alpha) (IkBKA) (IkappaB kinase) (EC 2.7.11.10) (Conserved helix-loop-helix ubiquitous kinase) (I-kappa-B kinase 1) (IKK1) (Nuclear factor NF-kappa-B inhibitor kinase alpha) (NFKB1KA)

Synonym: Chuk, Ikka

UniProt ID: Q60680

UniProt Link: www.uniprot.org/uniprotkb/Q60680/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 745 AA

Molecular Weight: 85 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MERPPGLRPGAGGPWEMRERLGTGGFGNVSLYQHRELDLKIATKSCRLELSSKNRERWCHEIQIMK
KLDHANVVKACDVPEELNFLINDVPLAMEYCSGGDLRKLLNKPENCCGLKESQILSLLSDIGSGIRYL
HENKIIHRDLKPENIVLQDVGKTIHKIIDLGYAKDVDQGSLSCTSVGTLQYLAPELFENKPYTATVDY
WSFGTMVFECIAGYRPFLLHLLQPFTHHEKIKKKDPKCIFACEEMTGEVRFSSHLPQPNLSLCSLIVEP
MESWLQLMLNWDPPQRRGPIDLTLLKQPRCFALMDHILNLKIVHILNMTSAKIISFLLPCDESLHSLQS
RIERETGINTGSQELLSETGISLDPRKPASQCVDGVRGCDSYMVYLFDKSKTVYEGPFASRSLSDC
VNYIVQDSKIQLPIQLRKVWAEAVHYVSGLKEDYSRLFQGGQRAAMLSLLRYNANLTKMKNTLISASQ
QLKAKLEFFRKSQILDRLERYSEQMTYGISSEKMLKAWKEMEEKAIHYSEVGVIGYLEDQIMSLHTEIM
ELQKSPYGRRQGDLMESLEQRAIDLYKQLKHRPPDHLYSDDSTEMVKIIVHTVQSQDRVLKELFGHLS
KLLGCKQKIIDLLPKVEVALSNIKEADNTVMFMQGKRQKEIWHLLKIACTQSSARSLVGSSLEGTVTPP
VSAWLPPTLADREHPLTCVVTQDGETLAQMIEENLNCLGHLSTIIREANEDQSSSLMSLDWSWLAE

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 Inhibitor of nuclear factor kappa-B kinase subunit alpha (I-kappa-B kinase alpha) (IKK-A) (IKK-alpha) (IkBKA) (IkappaB kinase) (EC 2.7.11.10) (Conserved helix-loop-helix ubiquitous kinase) (I-kappa-B kinase 1) (IKK1) (Nuclear factor NF-kappa-B inhibitor kinase alpha) (NFKBIA) 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 kinase that plays an essential role in the NF-kappa-B signaling pathway which is activated by multiple stimuli such as inflammatory cytokines, bacterial or viral products, DNA damages or other cellular stresses. Acts as a part of the canonical IKK complex in the conventional pathway of NF-kappa-B activation and phosphorylates inhibitors of NF-kappa-B on serine residues. These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome. In turn, free NF-kappa-B is translocated into the nucleus and activates the transcription of hundreds of genes involved in immune response, growth control, or protection against apoptosis. Negatively regulates the pathway by phosphorylating the scaffold protein TAXBP1 and thus promoting the assembly of the A20/TNFAIP3 ubiquitin-editing complex (composed of A20/TNFAIP3, TAX1BP1, and the E3 ligases ITCH and RNF11). Therefore, CHUK plays a key role in the negative feedback of NF-kappa-B canonical signaling to limit inflammatory gene activation. As part of the non-canonical pathway of NF-kappa-B activation, the MAP3K14-activated CHUK/IKKA homodimer phosphorylates NFKB2/p100 associated with RelB, inducing its proteolytic processing to NFKB2/p52 and the formation of NF-kappa-B RelB-p52 complexes. In turn, these complexes regulate genes encoding molecules involved in B-cell survival and lymphoid organogenesis. Also participates in the negative feedback of the non-canonical NF-kappa-B signaling pathway by phosphorylating and destabilizing MAP3K14/NIK. Within the nucleus, phosphorylates CREBBP and consequently increases both its transcriptional and histone acetyltransferase activities. Modulates chromatin accessibility at NF-kappa-B-responsive promoters by phosphorylating histones H3 at 'Ser-10' that are subsequently acetylated at 'Lys-14' by CREBBP (PubMed:12789342). Additionally, phosphorylates the CREBBP-interacting protein NCOA3. Also phosphorylates FOXO3 and may regulate this pro-apoptotic transcription factor. Phosphorylates RIPK1 at 'Ser-25' which represses its kinase activity and consequently prevents TNF-mediated RIPK1-dependent cell death (PubMed:30988283). Phosphorylates AMBRA1 following mitophagy induction, promoting AMBRA1 interaction with ATG8 family proteins and its mitophagic activity (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Note=Shuttles between the cytoplasm and 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.



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- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.