

Recombinant Human IKKB Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50486

Size: 10ug, 100ug

Protein Name: Inhibitor of nuclear factor kappa-B kinase subunit beta (I-kappa-B-kinase beta) (IKK-B) (IKK-beta) (Ikbkb) (EC 2.7.11.10) (I-kappa-B kinase 2) (IKK-2) (IKK2) (Nuclear factor NF-kappa-B inhibitor kinase beta) (NFKBKB) (Serine/threonine protein kinase IKBKB) (EC 2.7.11.1)

Synonym: IKBKB, IKKB

UniProt ID: O14920

UniProt Link: www.uniprot.org/uniprotkb/O14920/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 756 AA

Molecular Weight: 87 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSWSPSLTTQTCGAWEMKERLGTGGFGNVIRWHNQETGEQIAIKQCRQELSPRNRERWCLEIQIM
RRLTHPNVVAARDVPEGMQNLPNDLPLAMEYCGGGDLRKYLNQFENCCGLREGAILTLLSDIASA
LRYLHENRIIHRDLKPENIVLQQGEQRLIHKIIDLGAKELDQGSLSFVGTQLQYLAPELLEQQKYTVT
VDYWSFGTLAFECITGFRPFLPNWQPVQVHVKVRQKSEVDIVVSEDNLNGTVKFSSSLPYPNNLNSV
LAERLEKWLQLMLMWHPRQRGTPTYGPNGCFKALDDILNLKLVHILNMVTGTIHTYPVTEDESLQS
LKARIQQDTGIPEEDQELLQEAGLALIPDKPATQCISDGKLNIGHTLDMDLVFLFDNSKITYETQISPR
PQPESVSCILQEPKRNLAFFQLRKVWGQVWHISQITLKEDCNRLQQGQRAAMMNLRLNNSCLSKMK
NSMASMSQQLKAKLDDFFKTSIQIDLEKYSEQTEFGITSDKLLAWREMEQAVELCGRENEVKLLVER
MMALQTDIVDLQRSPMGRKQGGTLDLEEQAARELYRRLREKPRDQRTEGDSQEMVRLLLQAIQSF
EKKVRVIYTQLSKTVVCKQKALELLPKVEEVVSLMNEDEKTVVRLQEKRQKELWNLLKIACSKVRGP
VSGSPDSMNASRLSQPGQLMSQPSTASNSLPEPAKKSEELVAEAHNLCTLLENAIQDQTVREQDQSF
TALDWSWLQTEEEHSCLEQAS

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 beta (I-kappa-B-kinase beta) (IKK-B) (IKK-beta) (Ikbkb) (EC 2.7.11.10) (I-kappa-B kinase 2) (IKK-2) (IKK2) (Nuclear factor NF-kappa-B inhibitor kinase beta) (NFKB1KB) (Serine/threonine protein kinase IKBKB) (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: 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 (PubMed:20434986, PubMed:20797629, PubMed:21138416, PubMed:30337470, PubMed:9346484). Acts as a part of the canonical IKK complex in the conventional pathway of NF-kappa-B activation (PubMed:9346484). Phosphorylates inhibitors of NF-kappa-B on 2 critical serine residues (PubMed:20434986, PubMed:20797629, PubMed:21138416, PubMed:9346484). These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome (PubMed:20434986, PubMed:20797629, PubMed:21138416, PubMed:9346484). 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 (PubMed:20434986, PubMed:20797629, PubMed:21138416, PubMed:9346484). In addition to the NF-kappa-B inhibitors, phosphorylates several other components of the signaling pathway including NEMO/IKBKG, NF-kappa-B subunits RELA and NFkB1, as well as IKK-related kinases TBK1 and IKBKE (PubMed:11297557, PubMed:14673179, PubMed:20410276, PubMed:21138416). IKK-related kinase phosphorylations may prevent the overproduction of inflammatory mediators since they exert a negative regulation on canonical IKKs (PubMed:11297557, PubMed:20410276, PubMed:21138416). Phosphorylates FOXO3, mediating the TNF-dependent inactivation of this pro-apoptotic transcription factor (PubMed:15084260). Also phosphorylates other substrates including NAA10, NCOA3, BCL10 and IRS1 (PubMed:17213322, PubMed:19716809). Phosphorylates RIPK1 at 'Ser-25' which represses its kinase activity and consequently prevents TNF-mediated RIPK1-dependent cell death (By similarity). Phosphorylates the C-terminus of IRF5, stimulating IRF5 homodimerization and translocation into the nucleus (PubMed:25326418). Following bacterial lipopolysaccharide (LPS)-induced TLR4 endocytosis, phosphorylates STAT1 at 'Thr-749' which restricts interferon signaling and anti-inflammatory responses and promotes innate inflammatory responses (PubMed:38621137). IKBKB-mediated phosphorylation of STAT1 at 'Thr-749' promotes binding of STAT1 to the ARID5A promoter, resulting in transcriptional activation of ARID5A and subsequent ARID5A-mediated stabilization of IL6 (PubMed:32209697). It also promotes binding of STAT1 to the IL12B promoter and activation of IL12B transcription (PubMed:32209697).

Subcellular Localization: Cytoplasm . Nucleus . Membrane raft . Note=Colocalized with DPP4 in membrane rafts.

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.