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# Anti-IKK Alpha Antibody

Catalog # ABO10928

## Product Information

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| **Application** | WB |
| **Primary Accession** | O15111 |
| **Host** | Rabbit |
| **Reactivity** | Human |
| **Clonality** | Polyclonal |
| **Format** | Lyophilized |
| **Description** | Rabbit IgG polyclonal antibody for Inhibitor of nuclear factor kappa-B kinase subunit alpha(CHUK) detection. Tested with WB in Human. |
| **Reconstitution** | Add 0.2ml of distilled water will yield a concentration of 500ug/ml. |

## Additional Information

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| **Gene ID** | 1147 |
| **Other Names** | Inhibitor of nuclear factor kappa-B kinase subunit alpha, I-kappa-B kinase alpha, IKK-A, IKK-alpha, IkBKA, IkappaB kinase, 2.7.11.10, Conserved helix-loop-helix ubiquitous kinase, I-kappa-B kinase 1, IKK1, Nuclear factor NF-kappa-B inhibitor kinase alpha, NFKBIKA, Transcription factor 16, TCF-16, CHUK, IKKA, TCF16 |
| **Calculated MW** | 84640 |
| **Application Details** | Western blot, 0.1-0.5 □g/ml, Human |
| **Subcellular Localization** | Cytoplasm . Nucleus . Shuttles between the cytoplasm and the nucleus. |
| **Tissue Specificity** | Widely expressed. |
| **Source** | Eukaryota |
| **Protein Name** | Inhibitor of nuclear factor kappa-B kinase subunit alpha(I-kappa-B kinase alpha/IKK-A/IKK-alpha/IkBKA/IkappaB kinase) |
| **Contents** | Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3. |
| **Immunogen** | A synthetic peptide corresponding to a sequence at the C-terminus of human IKK alpha(728-745aa NEEQGNSMMNLDWSWLTE). |
| **Purification** | Immunogen affinity purified. |
| **Cross Reactivity** | No cross reactivity with other proteins |

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| **Storage** | At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing. |
| **Sequence Similarities** | Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. I-kappa-B kinase subfamily. |

## Protein Information

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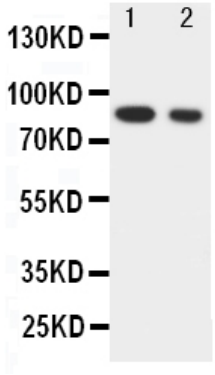
| **Name** | CHUK |
| **Synonyms** | IKKA, TCF16 |
| **Function** | Serine kinase that plays an essential role in the NF-kappa-B signaling pathway which is activated by multiple stimuli such as inflammatory cytokines, bacterial or viral products, DNA damages or other cellular stresses (PubMed:18626576, PubMed:9244310, PubMed:9252186, PubMed:9346484). 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 (PubMed:18626576, PubMed:35952808, PubMed:9244310, PubMed:9252186, PubMed:9346484). These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome (PubMed:18626576, PubMed:9244310, PubMed:9252186, 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:18626576, PubMed:9244310, PubMed:9252186, PubMed:9346484). 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) (PubMed:21765415). 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 (PubMed:20501937). 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 (PubMed:17434128). 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 (PubMed:15084260). Phosphorylates RIPK1 at 'Ser-25' which represses its kinase activity and consequently prevents TNF-mediated RIPK1-dependent cell death (By similarity). Phosphorylates AMBRA1 following mitophagy induction, promoting AMBRA1 interaction with ATG8 family proteins and its mitophagic activity (PubMed:30217973). |
| **Cellular Location** | Cytoplasm. Nucleus Note=Shuttles between the cytoplasm and the nucleus |
| **Tissue Location** | Widely expressed. |

## Background

IKBKA(INHIBITOR OF KAPPA LIGHT POLYPEPTIDE GENE ENHANCER IN B CELLS, KINASE OF, ALPHA), also called CHUK, NFKBIKA, IKKA, IKK1, I-KAPPA-B, is a protein kinase that in humans is encoded by the CHUK gene. And it is a member of the protein kinase superfamily. And the protein contains a serine/threonine kinase domain, due to its ubiquitous expression in a broad array of tissues and high degree of conservation across species. By FISH, the IKBKA gene is mapped to chromosome 10q24. Phosphorylation of serine residues on the I-kappa-B proteins by kinases(IKBKA or IKBKB) marks them for destruction via the ubiquitination pathway, thereby allowing activation of the NF-kappa-B complex. IKK-alpha is part of the I kappa B kinase complex that plays an important role in regulating the NF-kappa B transcription factor.

## Images




Anti-IKK alpha antibody, ABO10928, Western blottingLane 1: HELA Cell LysateLane 2: JURKAT Cell Lysate

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