

Anti-IKK Alpha Antibody

Catalog # ABO10928

#### Specification

# Anti-IKK Alpha Antibody - Product Information

ApplicationWBPrimary AccessionO15111HostRabbitReactivityHumanClonalityPolyclonalFormatLyophilizedDescriptionRabbit In Construction

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.

# Anti-IKK Alpha Antibody - Additional Information

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 MW KDa

**Application Details** Western blot, 0.1-0.5 μg/ml, Human<br>

**Subcellular Localization** Cytoplasm . Nucleus . Shuttles between the cytoplasm and the nucleus.

**Tissue Specificity** Widely expressed.

**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

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.

### Anti-IKK Alpha Antibody - Protein Information

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: <a href="http://www.uniprot.org/citations/18626576" target="\_blank">18626576</a>, PubMed:<a href="http://www.uniprot.org/citations/9244310" target=" blank">9244310</a>, PubMed:<a href="http://www.uniprot.org/citations/9252186" target=" blank">9252186</a>, PubMed:<a href="http://www.uniprot.org/citations/9346484" target="blank">9346484</a>). 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:<a href="http://www.uniprot.org/citations/18626576" target=" blank">18626576</a>, PubMed:<a href="http://www.uniprot.org/citations/35952808" target=" blank">35952808</a>, PubMed:<a href="http://www.uniprot.org/citations/9244310" target="\_blank">9244310</a>, PubMed:<a href="http://www.uniprot.org/citations/9252186" target="\_blank">9252186</a>, PubMed:<a href="http://www.uniprot.org/citations/9346484" target="\_blank">9346484</a>). These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome (PubMed:<a href="http://www.uniprot.org/citations/18626576" target=" blank">18626576</a>, PubMed:<a href="http://www.uniprot.org/citations/9244310" target=" blank">9244310</a>, PubMed:<a href="http://www.uniprot.org/citations/9252186" target=" blank">9252186</a>, PubMed:<a href="http://www.uniprot.org/citations/9346484" target=" blank">9346484</a>). 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:<a href="http://www.uniprot.org/citations/18626576" target=" blank">18626576</a>, PubMed:<a href="http://www.uniprot.org/citations/9244310" target=" blank">9244310</a>, PubMed:<a href="http://www.uniprot.org/citations/9252186" target=" blank">9252186</a>, PubMed:<a href="http://www.uniprot.org/citations/9346484" target=" blank">9346484</a>). Negatively regulates the pathway by phosphorylating the scaffold protein TAXBP1 and thus promoting the assembly of the A20/TNFAIP3 ubiguitin-editing complex (composed of A20/TNFAIP3, TAX1BP1, and the E3 ligases ITCH and RNF11) (PubMed: <a href="http://www.uniprot.org/citations/21765415" target=" blank">21765415</a>). 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:<a href="http://www.uniprot.org/citations/20501937"

target="\_blank">20501937</a>). 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:<a

href="http://www.uniprot.org/citations/17434128" target="\_blank">17434128</a>). 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:<a

href="http://www.uniprot.org/citations/12789342" target="\_blank">12789342</a>). Additionally, phosphorylates the CREBBP-interacting protein NCOA3. Also phosphorylates FOXO3 and may regulate this pro-apoptotic transcription factor (PubMed:<a

href="http://www.uniprot.org/citations/15084260" target="\_blank">15084260</a>). 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:<a href="http://www.uniprot.org/citations/30217973" target="\_blank">30217973</a>).

**Cellular Location** Cytoplasm. Nucleus Note=Shuttles between the cytoplasm and the nucleus

Tissue Location Widely expressed.

# Anti-IKK Alpha Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

Anti-IKK Alpha Antibody - Images





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

# Anti-IKK Alpha Antibody - 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.