

**IKK alpha Antibody**  
**Catalog # ASC10042****Specification**

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**IKK alpha Antibody - Product Information**

Application	IF
Primary Accession	<a href="#">O15111</a>
Other Accession	<a href="#">AF009225</a> , <a href="#">1147</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	85 kDa KDa
Application Notes	IKK alpha can be used for detection of IKK alpha by Western blot at 1 µg/mL. An 85 kDa band should be detected. Antibody can also be used for immunocytochemistry starting at 1 µg/mL. For immunofluorescence start at 20 µg/mL.

**IKK alpha Antibody - Additional Information**Gene ID **1147****Other Names**

IKK alpha Antibody: IKK1, IKKA, IKBKA, TCF16, NFKB1A, IKK-alpha, Inhibitor of nuclear factor kappa-B kinase subunit alpha, Conserved helix-loop-helix ubiquitous kinase, I-kappa-B kinase alpha, conserved helix-loop-helix ubiquitous kinase

**Target/Specificity**

IKK alpha antibody was raised against a 19 amino acid peptide near the carboxy terminus of human IKK alpha.  
The immunogen is located within the last 50 amino acids of IKK alpha.

**Reconstitution & Storage**

IKK alpha antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

IKK alpha Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**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 ubiquitin-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. Participates also 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**

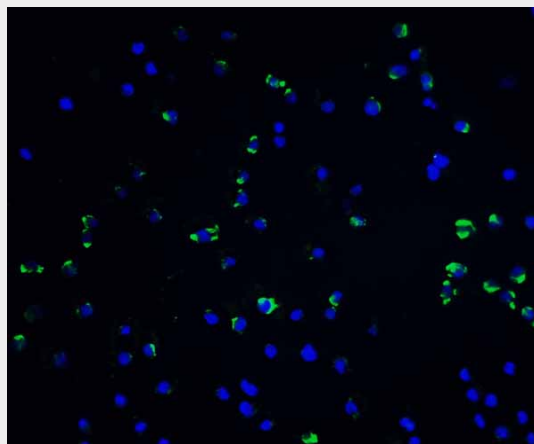
Widely expressed.

## IKK alpha Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## IKK alpha Antibody - Images



Immunofluorescence of Vinculin in Jurkat cells with Vinculin antibody at 20 µg/ml.

## IKK alpha Antibody - Background

IKK alpha Antibody: Nuclear factor kappa B (NF- $\kappa$ B) is a ubiquitous transcription factor and an essential mediator of gene expression during activation of immune and inflammatory responses. NF- $\kappa$ B mediates the expression of a great variety of genes in response to extracellular stimuli including IL-1, TNF $\alpha$ , and bacteria product LPS. NF- $\kappa$ B is associated with I $\kappa$ B proteins in the cell cytoplasm, which inhibit NF- $\kappa$ B activity. The long-sought I $\kappa$ B kinase (IKK), which phosphorylates I $\kappa$ B, and mediates I $\kappa$ B degradation and NF- $\kappa$ B activation, was recently identified by several laboratories. IKK is a serine protein kinase, and the IKK complex contains alpha and beta subunits (IKK $\alpha$  and IKK $\beta$ ). IKK $\alpha$  and IKK $\beta$  interact with each other and both are essential for the NF- $\kappa$ B activation. IKK $\alpha$  specifically phosphorylates I $\kappa$ B-alpha. IKK $\alpha$  is expressed in variety of human tissues.

## IKK alpha Antibody - References

DiDonato JA, Hayakawa M, Rothwarf DM, Zandi E, Karin M. A cytokine-responsive I $\kappa$ B kinase that activates the transcription factor NF- $\kappa$ B. *Nature* 1997;388:548-54

Regnier CH, Song HY, Gao X, Goeddel DV, Cao Z, Rothe M. Identification and characterization of an I $\kappa$ B kinase. *Cell* 1997;90:373-83

Zandi E, Rothwarf DM, Delhase M, Hayakawa M, Karin M. The I $\kappa$ B kinase complex (IKK) contains two kinase subunits, IKK $\alpha$  and IKK $\beta$ , necessary for I $\kappa$ B phosphorylation and NF- $\kappa$ B activation. *Cell* 1997;91:243-52

Woronicz JD, Gao X, Cao Z, Rothe M, Goeddel DY. I $\kappa$ B kinase- $\beta$ : NF- $\kappa$ B activation and complex formation with I $\kappa$ B kinase- $\alpha$  and NIK. *Science* 1997;278:866-9