

**IKK alpha Antibody**  
**Catalog # ASC10061****Specification**

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**IKK alpha Antibody - Product Information**

Application	ICC
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	87 kDa KDa
Application Notes	IKK alpha antibody can be used for detection of IKK alpha by Western blot 0.5 µg/mL. An 85 kDa band should be detected. Antibody can also be used for immunocytochemistry starting at 10 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 17 amino acid peptide near the carboxy terminus of human IKK alpha.<br><br>The immunogen is located within amino acids 640 - 690 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**

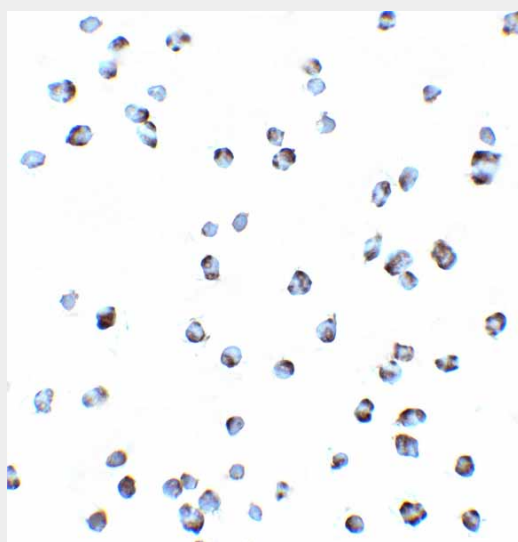
Widely expressed.

## 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



Immunocytochemistry of DR3 in Jurkat cells with DR3 antibody at 5 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 a 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 $\alpha$ , 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