

**CHUK Antibody**  
**Purified Mouse Monoclonal Antibody**  
**Catalog # AO1196a**

**Specification**

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**CHUK Antibody - Product Information**

Application	<b>WB, IHC, IF</b>
Primary Accession	<a href="#">O15111</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>IgG1</b>

**Description**

CHUK: conserved helix-loop-helix ubiquitous kinase. This gene encodes a member of the serine/threonine protein kinase family. The encoded protein, a component of a cytokine-activated protein complex that is an inhibitor of the essential transcription factor NF-kappa-B complex, phosphorylates sites that trigger the degradation of the inhibitor via the ubiquitination pathway, thereby activating the transcription factor.

**Immunogen**

Purified recombinant fragment of CHUK (aa500-590) expressed in E. Coli.

**Formulation**

Ascitic fluid containing 0.03% sodium azide. <br />

**CHUK 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

**Dilution**

WB~~1/500 - 1/2000  
IHC~~1:200~~1000  
IF~~1:200~1000.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

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

**CHUK 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.

**CHUK 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](#)

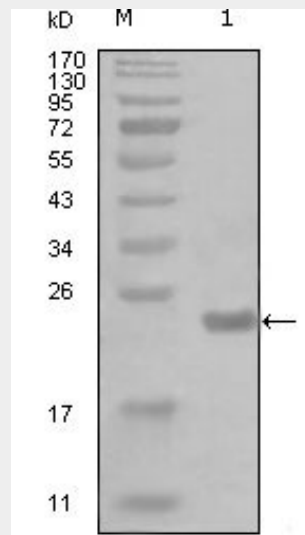
**CHUK Antibody - Images**

Figure 1: Western blot analysis using CHUK mouse mAb against truncated Trx-CHUK recombinant protein (1).

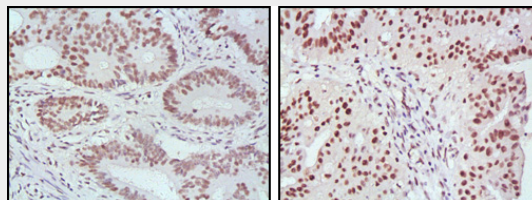


Figure 2: Immunohistochemical analysis of paraffin-embedded human rectum cancer (left) and ovarian cancer (right) tissues, showing nuclear localization with DAB staining using MLH1 mouse mAb.

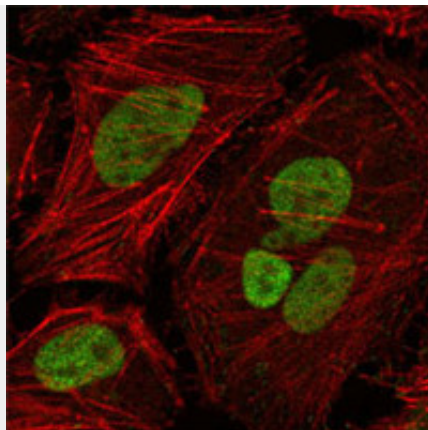


Figure 3: Confocal immunofluorescence analysis of HeLa cells using anti-MLH1 mAb (green), showing nuclear localization. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

#### **CHUK Antibody - References**

1. J Biol Chem. 2004 Jan 16;279(3):1739-46.
2. Mol Cell Biol. 2003 Nov;23(22):8334-44.
3. Mol Cell. 2005 Apr 1;18(1):71-82.