

# KD-Validated Anti-IKK $\alpha$ Rabbit Monoclonal Antibody

Rabbit monoclonal antibody

Catalog # AGI1176

## Product Information

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| <b>Application</b>       | WB, ICC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Primary Accession</b> | <a href="#">O15111</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Reactivity</b>        | Rat, Human, Mouse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Clonality</b>         | Monoclonal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Isotype</b>           | Rabbit IgG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Clone Names</b>       | 23GB765                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Calculated MW</b>     | 84640                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Gene Name</b>         | CHUK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Aliases</b>           | CHUK; Component Of Inhibitor Of Nuclear Factor Kappa B Kinase Complex; IKK-Alpha; NFKB1A; IKK1; IKKA; Inhibitor Of Nuclear Factor Kappa-B Kinase Subunit Alpha; Conserved Helix-Loop-Helix Ubiquitous Kinase; IkBKA; TCF16; Transcription Factor 16; I-Kappa-B Kinase 1; EC 2.7.11.10; IKK-1; Nuclear Factor NF-Kappa-B Inhibitor Kinase Alpha; Nuclear Factor NFkappaB Inhibitor Kinase Alpha; IkB Kinase Alpha Subunit; I-Kappa-B Kinase-Alpha; I-Kappa-B Kinase Alpha; I-Kappa-B Kinase; IkappaB Kinase; IKK-A Kinase; EC 2.7.11; TCF-16; IKBKA; IKK-A; BPS2 |
| <b>Immunogen</b>         | A synthesized peptide derived from human IKK $\alpha$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Additional Information

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| <b>Gene ID</b>     | 1147                                                                                                                                                                                                                                                                                                                              |
| <b>Other Names</b> | 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, IKK-1, IKK1, Nuclear factor NF-kappa-B inhibitor kinase alpha, NFKB1A, Transcription factor 16, TCF-16, CHUK, IKKA, TCF16 |

## Protein Information

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| <b>Name</b>     | CHUK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Synonyms</b> | IKKA, TCF16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Function</b> | 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="#">18626576</a> , PubMed: <a href="#">9244310</a> , PubMed: <a href="#">9252186</a> , PubMed: <a href="#">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="#">18626576</a> , PubMed: <a href="#">35952808</a> , PubMed: <a href="#">9244310</a> , PubMed: <a href="#">9252186</a> , PubMed: <a href="#">9346484</a> ). 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](#)).

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| <b>Cellular Location</b> | Cytoplasm. Nucleus Note=Shuttles between the cytoplasm and the nucleus |
| <b>Tissue Location</b>   | Widely expressed.                                                      |

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