

KD-Validated Anti-IKK alpha Rabbit Monoclonal Antibody

Rabbit monoclonal antibody

Catalog # AGI2323

Product Information

Application	WB, FC, ICC
Primary Accession	O15111
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB1065
Calculated MW	84640
Gene Name	CHUK
Aliases	CHUK; Component Of Inhibitor Of Nuclear Factor Kappa B Kinase Complex; IKK-Alpha; NFKB1KA; 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
Immunogen	A synthesized peptide derived from human IKK alpha

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, IKK-1, IKK1, Nuclear factor NF-kappa-B inhibitor kinase alpha, NFKB1KA, Transcription factor 16, TCF-16, CHUK, IKKA, TCF16

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: 18626576 , PubMed: 9244310 , PubMed: 9252186 , PubMed: 9346484). 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: 18626576 , PubMed: 35952808 , PubMed: 9244310 , PubMed: 9252186 , PubMed: 9346484). 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](#)).

Cellular Location	Cytoplasm. Nucleus Note=Shuttles between the cytoplasm and the nucleus
Tissue Location	Widely expressed.

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