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# IKK beta Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8109a

## Product Information

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| **Application** | WB, IHC-P, IF, E |
| **Primary Accession** | O14920 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Calculated MW** | 86564 |

## Additional Information

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| **Gene ID** | 3551 |
| **Other Names** | Inhibitor of nuclear factor kappa-B kinase subunit beta, I-kappa-B-kinase beta, IKK-B, IKK-beta, IkBKB, I-kappa-B kinase 2, IKK2, Nuclear factor NF-kappa-B inhibitor kinase beta, NFKBIKB, IKBKB, IKKB |
| **Target/Specificity** | This IKK beta antibody is generated from rabbits immunized with recombinant human IKK beta (full length sequence). |
| **Dilution** | WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | IKK beta Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | IKBKB |
| **Synonyms** | IKKB |
| **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:20434986, PubMed:20797629, PubMed:21138416, |

| | |
|---|---|
| | PubMed:30337470, PubMed:9346484). Acts as a part of the canonical IKK complex in the conventional pathway of NF-kappa-B activation (PubMed:9346484). Phosphorylates inhibitors of NF-kappa-B on 2 critical serine residues (PubMed:20434986, PubMed:20797629, PubMed:21138416, PubMed:9346484). These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome (PubMed:20434986, PubMed:20797629, PubMed:21138416, 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:20434986, PubMed:20797629, PubMed:21138416, PubMed:9346484). In addition to the NF-kappa-B inhibitors, phosphorylates several other components of the signaling pathway including NEMO/IKBKG, NF-kappa-B subunits RELA and NFKB1, as well as IKK-related kinases TBK1 and IKBKE (PubMed:11297557, PubMed:14673179, PubMed:20410276, PubMed:21138416). IKK-related kinase phosphorylations may prevent the overproduction of inflammatory mediators since they exert a negative regulation on canonical IKKs (PubMed:11297557, PubMed:20410276, PubMed:21138416). Phosphorylates FOXO3, mediating the TNF-dependent inactivation of this pro-apoptotic transcription factor (PubMed:15084260). Also phosphorylates other substrates including NAA10, NCOA3, BCL10 and IRS1 (PubMed:17213322, PubMed:19716809). Phosphorylates RIPK1 at 'Ser-25' which represses its kinase activity and consequently prevents TNF- mediated RIPK1-dependent cell death (By similarity). Phosphorylates the C-terminus of IRF5, stimulating IRF5 homodimerization and translocation into the nucleus (PubMed:25326418). Following bacterial lipopolysaccharide (LPS)-induced TLR4 endocytosis, phosphorylates STAT1 at 'Thr-749' which restricts interferon signaling and anti-inflammatory responses and promotes innate inflammatory responses (PubMed:38621137). IKBKB-mediated phosphorylation of STAT1 at 'Thr-749' promotes binding of STAT1 to the ARID5A promoter, resulting in transcriptional activation of ARID5A and subsequent ARID5A-mediated stabilization of IL6 (PubMed:32209697). It also promotes binding of STAT1 to the IL12B promoter and activation of IL12B transcription (PubMed:32209697). |
| **Cellular Location** | Cytoplasm. Nucleus. Membrane raft. Note=Colocalized with DPP4 in membrane rafts. |
| **Tissue Location** | Highly expressed in heart, placenta, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, testis and peripheral blood |

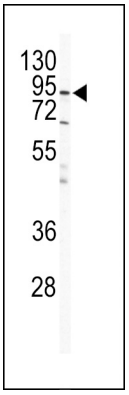
## Background

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 ubiquination pathway, thereby activating the transcription factor.

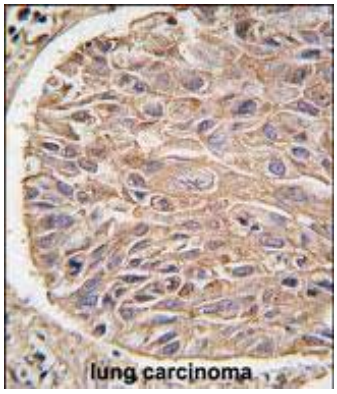
## References


Tang, E.D., et al., J. Biol. Chem. 278(40):38566-38570 (2003).
Sakurai, H., et al., J. Biol. Chem. 278(38):36916-36923 (2003).
Ebner, K., et al., Blood 102(1):192-199 (2003).
Carter, R.S., et al., J. Biol. Chem. 278(22):19642-19648 (2003).
Huang, W.C., et al., J. Biol. Chem. 278(11):9944-9952 (2003).

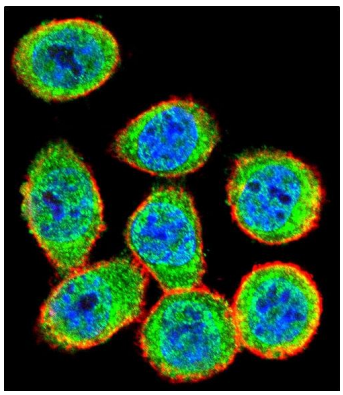

## Images




Western blot analysis of anti-IKK beta Antibody (Cat.#AP8109a) in Hela cell line lysates (35ug/lane). IKK beta(arrow) was detected using the purified Pa).




Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with IKK beta antibody (Cat.#AP8109a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of IKK beta Antibody(Cat#AP8109a) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).

## Citations


- Regulation of I(kappa)B kinase complex by phosphorylation of (gamma)-binding domain of I(kappa)B kinase (beta) by Polo-like kinase 1.
- The Listeria monocytogenes InlC protein interferes with innate immune responses by targeting the I{kappa}B kinase subunit IKK{alpha}.
- Increased NF-κB and Decreased Wnt-β-Catenin Signaling Mediate the Reduced Osteoblast Differentiation and Function in F508Δ-CFTR Mice.
- Activation of porcine alveolar macrophages by Actinobacillus pleuropneumoniae lipopolysaccharide via the TLR4/NF-κB mediated pathway.


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