

IKBKB Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1087a

Specification

IKBKB Antibody - Product Information

Application	WB, IHC
Primary Accession	O14920
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	43kDa KDa

Description

IKBKB(Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta, also called IKK2/IKKB), is a member of the IKK complex which is composed of IKK-alpha, IKK-beta, IKK-gamma and IKAP. Phosphorylation of I-Kappa-B on a serine residue by the IKK complex frees NF-kB from I-Kappa-B and marks it for degradation via ubiquination. IKK-beta has been shown to activate NF-kB and phosphorylate IKB-alpha and beta. Phosphorylation of 2 sites at the activation loop of IKK-beta is essential for activation of IKK by TNF and IL1. Once activated, IKK-beta autophosphorylates which in turn decreases IKK activity and prevents prolonged activation of the inflammatory response. Additionally, IKK-beta activity can also be regulated by MEKK-1.

Immunogen

Purified recombinant fragment of IKBKB expressed in E. Coli.

Formulation

Ascitic fluid containing 0.03% sodium azide.

IKBKB Antibody - Additional Information

Gene ID 3551

Other Names

Inhibitor of nuclear factor kappa-B kinase subunit beta, I-kappa-B-kinase beta, IKK-B, IKK-beta, Ikbkb, 2.7.11.10, I-kappa-B kinase 2, IKK2, Nuclear factor NF-kappa-B inhibitor kinase beta, NFKB1KB, IKBKB, IKKB

Dilution

WB~~1/500 - 1/2000

IHC~~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

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

IKBKB Antibody - Protein Information

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](http://www.uniprot.org/citations/20434986)), PubMed: [20797629](http://www.uniprot.org/citations/20797629)), PubMed: [21138416](http://www.uniprot.org/citations/21138416)), PubMed: [30337470](http://www.uniprot.org/citations/30337470)), PubMed: [9346484](http://www.uniprot.org/citations/9346484)). Acts as a part of the canonical IKK complex in the conventional pathway of NF-kappa-B activation (PubMed: [9346484](http://www.uniprot.org/citations/9346484)). Phosphorylates inhibitors of NF-kappa-B on 2 critical serine residues (PubMed: [20434986](http://www.uniprot.org/citations/20434986)), PubMed: [20797629](http://www.uniprot.org/citations/20797629)), PubMed: [21138416](http://www.uniprot.org/citations/21138416)), PubMed: [9346484](http://www.uniprot.org/citations/9346484)). These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome (PubMed: [20434986](http://www.uniprot.org/citations/20434986)), PubMed: [20797629](http://www.uniprot.org/citations/20797629)), PubMed: [21138416](http://www.uniprot.org/citations/21138416)), PubMed: [9346484](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/20434986)), PubMed: [20797629](http://www.uniprot.org/citations/20797629)), PubMed: [21138416](http://www.uniprot.org/citations/21138416)), PubMed: [9346484](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/11297557)), PubMed: [14673179](http://www.uniprot.org/citations/14673179)), PubMed: [20410276](http://www.uniprot.org/citations/20410276)), PubMed: [21138416](http://www.uniprot.org/citations/21138416)). IKK-related kinase phosphorylations may prevent the overproduction of inflammatory mediators since they exert a negative regulation on canonical IKKs (PubMed: [11297557](http://www.uniprot.org/citations/11297557)), PubMed: [20410276](http://www.uniprot.org/citations/20410276)), PubMed: [21138416](http://www.uniprot.org/citations/21138416)). Phosphorylates FOXO3, mediating the TNF-dependent inactivation of this pro-apoptotic transcription factor (PubMed: [15084260](http://www.uniprot.org/citations/15084260)). Also phosphorylates other substrates including NAA10, NCOA3, BCL10 and IRS1 (PubMed: [17213322](http://www.uniprot.org/citations/17213322)), PubMed: [19716809](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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

IKBKB 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](#)

IKBKB Antibody - Images

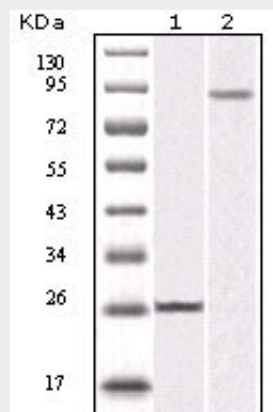


Figure 1: Western blot analysis using IKBKB mouse mAb against truncated IKBKB recombinant protein (1) and K562 cell lysate (2).

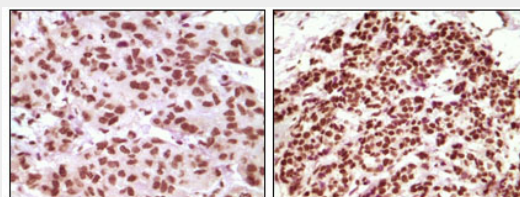


Figure 2: Immunohistochemical analysis of paraffin-embedded human infiltrating ductal carcinoma tissue(left) and simple carcinoma of breast cancer tissue(right), showing nuclear localization using PR mouse mAb with DAB staining.

IKBKB Antibody - References

1. Azoitei N,et al. Biochemistry. 2005.14;44(23): 8326-36.
2. Kumar KA,et al. Neurosci Lett. 2003.10;340(2): 139-42.
3. Peet GW,et al. J Biol Chem. 1999 Nov 12;274(46): 32655-61.