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IKK beta Antibody

Catalog # ASC10062

Product Information

Application	WB, IF, ICC, E
Primary Accession	O14920
Other Accession	O14920, 14285497
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	86564
Conjugate	Unconjugated
Application Notes	IKK beta antibody can be used for detection of IKK beta by Western blot at 0.5 g/mL. A 87 kDa band should be detected. Antibody can also be used for immunocytochemistry starting at 10 g/mL. For immunofluorescence start at 10 g/mL.

Additional Information

Gene ID	3551
Other Names	IKK beta Antibody: IKK2, IKKB, IMD15, NFKBIKB, IKK-beta, Inhibitor of nuclear factor kappa-B kinase subunit beta, I-kappa-B kinase 2, I-kappa-B-kinase beta, inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
Target/Specificity	IKBKB; This polyclonal antibody has no cross response to IKKa or IKKy.
Reconstitution & Storage	IKK beta antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	IKK beta Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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, 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

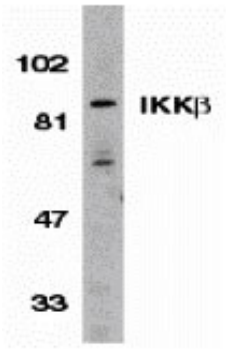
IKK beta Antibody: Nuclear factor kappa B (NF-κB) is a ubiquitous transcription factor and an essential mediator of gene expression during activation of immune and inflammatory responses. NF-κB mediates the expression of a great variety of genes in response to extracellular stimuli including IL-1, TNFα, and bacteria product LPS. NF-κB is associated with IκB proteins in the cell cytoplasm, which inhibit NF-κB activity. The long-sought IκB kinase (IKK), which phosphorylates IκB, and mediates IκB degradation and NF-κB activation, was recently identified by several laboratories. IKK is a serine protein kinase, and the IKK complex contains alpha and beta subunits (IKKα and IKKβ). IKKα and IKKβ interact with each other and both are essential for NF-κB activation. IKKβ phosphorylates both IκB-alpha and IκB-beta. IKKβ is expressed in variety of human tissues.

References

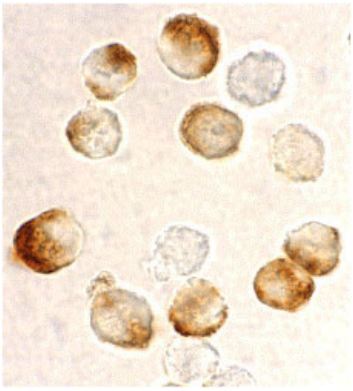
DiDonato JA, Hayakawa M, Rothwarf DM, Zandi E, Karin M. A cytokine-responsive IκB kinase that activates the transcription factor NF-κB. Nature 1997;388:548-54
Regnier CH, Song HY, Gao X, Goeddel DV, Cao Z, Rothe M. Identification and characterization of an IκB kinase. Cell 1997;90:373-83
Zandi E, Rothwarf DM, Delhase M, Hayakawa M, Karin M. The IκB kinase complex (IKK) contains two kinase

subunits, IKKα and IKKα, necessary for IκB phosphorylation and NF-κB activation. Cell 1997;91:243-52
Woronicz JD, Gao X, Cao Z, Rothe M, Goeddel DY. IκB kinase-β: NF-κB activation and complex formation with IκB kinase-α and NIK. Science 1997;278:866-9

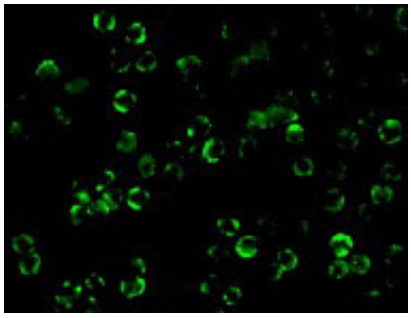
Images



Western blot analysis of IKK beta in Jurkat whole cell lysate with IKK beta antibody (C3) at 1:500 dilution.



Immunocytochemistry staining of HeLa cells using IKK beta antibody at 10 µg/mL.



Immunofluorescence of IKK beta in Hela cells with IKK beta antibody at 10 µg/mL.

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