

**IKK $\beta$  Antibody**  
**Purified Mouse Monoclonal Antibody (Mab)**  
**Catalog # AP52719****Specification**

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**IKK $\beta$  Antibody - Product Information**

Application	<b>WB</b>
Primary Accession	<a href="#">O14920</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>IgG1</b>
Calculated MW	<b>87 KDa</b>

**IKK $\beta$  Antibody - Additional Information****Gene ID** 3551**Other Names**

I kappa B kinase 2; I kappa B kinase beta; I-kappa-B kinase 2; I-kappa-B-kinase beta; IKBKB; IKK 2; IKK B; IKK beta; IKK-B; IKK-beta; IKK2; IKKB; IKKB\_HUMAN; IMD15; Inhibitor of kappa light chain gene enhancer in B cells; Inhibitor of kappa light polypeptide gene enhancer in B cells; Inhibitor of kappa light polypeptide gene enhancer in B cells kinase beta; Inhibitor of kappa light polypeptide gene enhancer in B cells, kinase beta; Inhibitor of nuclear factor kappa B kinase beta subunit; Inhibitor of nuclear factor kappa B kinase subunit beta; Inhibitor of nuclear factor kappa-B kinase subunit beta; MGC131801; NFKB1KB; Nuclear factor NF kappa B inhibitor kinase beta; Nuclear factor NF-kappa-B inhibitor kinase beta; Nuclear factor of kappa light chain gene enhancer in B cells inhibitor.

**Dilution**

WB~~1:500

**Format**

Purified mouse monoclonal antibody in PBS(pH 7.4) containing with 0.09% (W/V) sodium azide and 50% glycerol.

**Storage**

Store at -20 °C. Stable for 12 months from date of receipt

**IKK $\beta$  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: <a href="http://www.uniprot.org/citations/20434986" target="\_blank">20434986</a>, PubMed: <a href="http://www.uniprot.org/citations/20797629" target="\_blank">20797629</a>, PubMed: <a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>, PubMed: <a href="http://www.uniprot.org/citations/30337470" target="\_blank">30337470</a>, PubMed: <a href="http://www.uniprot.org/citations/9346484" target="\_blank">9346484</a>). Acts as a part of the canonical IKK complex in the conventional pathway of NF-kappa-B activation (PubMed: <a href="http://www.uniprot.org/citations/9346484" target="\_blank">9346484</a>). Phosphorylates inhibitors of NF-kappa-B on 2 critical serine residues (PubMed: <a href="http://www.uniprot.org/citations/20434986" target="\_blank">20434986</a>, PubMed: <a href="http://www.uniprot.org/citations/20797629" target="\_blank">20797629</a>, PubMed: <a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>, PubMed: <a href="http://www.uniprot.org/citations/9346484" target="\_blank">9346484</a>). These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome (PubMed: <a href="http://www.uniprot.org/citations/20434986" target="\_blank">20434986</a>, PubMed: <a href="http://www.uniprot.org/citations/20797629" target="\_blank">20797629</a>, PubMed: <a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>, PubMed: <a href="http://www.uniprot.org/citations/9346484" target="\_blank">9346484</a>). 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: <a href="http://www.uniprot.org/citations/20434986" target="\_blank">20434986</a>, PubMed: <a href="http://www.uniprot.org/citations/20797629" target="\_blank">20797629</a>, PubMed: <a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>, PubMed: <a href="http://www.uniprot.org/citations/9346484" target="\_blank">9346484</a>). 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: <a href="http://www.uniprot.org/citations/11297557" target="\_blank">11297557</a>, PubMed: <a href="http://www.uniprot.org/citations/14673179" target="\_blank">14673179</a>, PubMed: <a href="http://www.uniprot.org/citations/20410276" target="\_blank">20410276</a>, PubMed: <a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>). IKK-related kinase phosphorylations may prevent the overproduction of inflammatory mediators since they exert a negative regulation on canonical IKKs (PubMed: <a href="http://www.uniprot.org/citations/11297557" target="\_blank">11297557</a>, PubMed: <a href="http://www.uniprot.org/citations/20410276" target="\_blank">20410276</a>, PubMed: <a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>). Phosphorylates FOXO3, mediating the TNF-dependent inactivation of this pro-apoptotic transcription factor (PubMed: <a href="http://www.uniprot.org/citations/15084260" target="\_blank">15084260</a>). Also phosphorylates other substrates including NAA10, NCOA3, BCL10 and IRS1 (PubMed: <a href="http://www.uniprot.org/citations/17213322" target="\_blank">17213322</a>, PubMed: <a href="http://www.uniprot.org/citations/19716809" target="\_blank">19716809</a>). 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: <a href="http://www.uniprot.org/citations/25326418" target="\_blank">25326418</a>). 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: <a href="http://www.uniprot.org/citations/38621137" target="\_blank">38621137</a>). 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: <a href="http://www.uniprot.org/citations/32209697" target="\_blank">32209697</a>). It also promotes binding of STAT1 to the IL12B promoter and activation of IL12B transcription (PubMed: <a href="http://www.uniprot.org/citations/32209697" target="\_blank">32209697</a>).

### Cellular Location

Cytoplasm. Nucleus. Membrane raft. Note=Colocalized with DPP4 in membrane rafts.

### Tissue Location

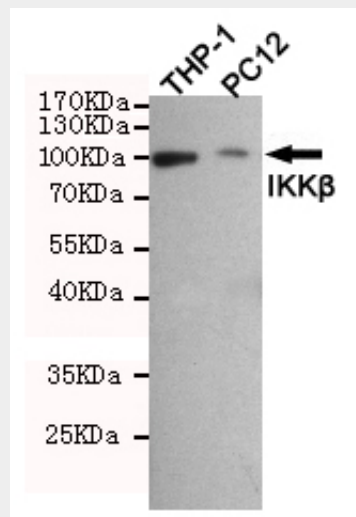
Highly expressed in heart, placenta, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, testis and peripheral blood

### IKK $\beta$ 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](#)

### IKK $\beta$ Antibody - Images



Western blot detection of IKK $\beta$  in THP-1 and PC12 cell lysates using IKK $\beta$  mouse mAb (1:500 diluted). Predicted band size: 87KDa. Observed band size: 87KDa.

### IKK $\beta$ Antibody - Background

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. Acts as part of the canonical IKK complex in the conventional pathway of NF- $\kappa$ B activation and phosphorylates inhibitors of NF- $\kappa$ B on 2 critical serine residues. These modifications allow polyubiquitination of the inhibitors and subsequent degradation by the proteasome. 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. In addition to the NF- $\kappa$ B inhibitors, phosphorylates several other components of the signaling pathway including NEMO/I $\kappa$ BKG, NF- $\kappa$ B subunits RELA and NF $\kappa$ B1, as well as IKK-related kinases TBK1 and IKK $\epsilon$ . IKK-related kinase phosphorylations may prevent the overproduction of inflammatory mediators since they exert a negative regulation on canonical IKKs. Also phosphorylates other substrates including NCOA3, BCL10 and IRS1. Within the nucleus, acts as an adapter protein for NF $\kappa$ BIA degradation in UV-induced NF- $\kappa$ B activation.

**IKK $\beta$  Antibody - References**

- Mercurio F.,et al.Science 278:860-866(1997).  
Woronicz J.D.,et al.Science 278:866-869(1997).  
Hu M.C.-T.,et al.Gene 222:31-40(1998).  
Shindo M.,et al.Cytogenet. Cell Genet. 82:32-33(1998).  
Ota T.,et al.Nat. Genet. 36:40-45(2004).