

**Anti-I $\kappa$ B $\alpha$  (Tyr-42), Phosphospecific Antibody**  
Catalog # AN1816**Specification****Anti-I $\kappa$ B $\alpha$  (Tyr-42), Phosphospecific Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P25963</a>
Reactivity	Bovine
Host	Rabbit
Clonality	Rabbit Polyclonal
Isotype	IgG
Calculated MW	35609

**Anti-I $\kappa$ B $\alpha$  (Tyr-42), Phosphospecific Antibody - Additional Information**

Gene ID 4792

**Other Names**I $\kappa$ B, MAD3, I $\kappa$ appaB $\alpha$ , NF $\kappa$ B inhibitor I $\kappa$ B $\alpha$ **Target/Specificity**

The NF- $\kappa$ B/Rel transcription factors are present in the cytosol in an inactive state complexed with the inhibitory I $\kappa$ B proteins. Activation of I $\kappa$ B $\alpha$  occurs through both serine and tyrosine phosphorylation events. Activation through phosphorylation at Ser-32 and Ser-36 is followed by proteasome-mediated degradation, resulting in the release and nuclear translocation of active NF- $\kappa$ B. This pathway of I $\kappa$ B $\alpha$  regulation occurs in response to various NF- $\kappa$ B-activating agents, such as TNF $\alpha$ , interleukins, LPS, and irradiation. An alternative pathway for I $\kappa$ B $\alpha$  regulation occurs through tyrosine phosphorylation of Tyr-42 and Tyr-305. Tyr-42 is phosphorylated in response to oxidative stress and growth factors. This phosphorylation can lead to degradation of I $\kappa$ B $\alpha$  and NF- $\kappa$ B-activation. In contrast, Tyr-305 phosphorylation by c-Abl has been implicated in I $\kappa$ B $\alpha$  nuclear translocation and inhibition of NF- $\kappa$ B-activation. Thus, tyrosine phosphorylation of I $\kappa$ B $\alpha$  may be an important regulatory mechanism in NF- $\kappa$ B signaling.

**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**

Anti-I $\kappa$ B $\alpha$  (Tyr-42), Phosphospecific Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Shipping**

Blue Ice

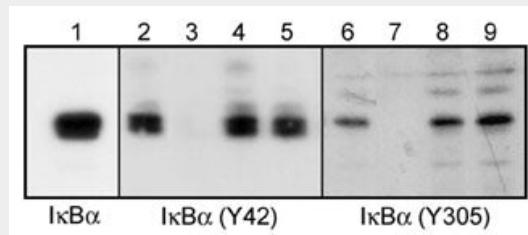
**Anti-I $\kappa$ B $\alpha$  (Tyr-42), Phosphospecific Antibody - Protocols**

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](#)

### Anti-I $\kappa$ B $\alpha$ (Tyr-42), Phosphospecific Antibody - Images



Western blot analysis of A431 cells treated with pervanadate (1 mM) for 30 min. Blots were probed with anti-I $\kappa$ B $\alpha$  (lane 1), anti-I $\kappa$ B $\alpha$  (Tyr-42) (IP1031; lanes 2-5), or anti-I $\kappa$ B $\alpha$  (Tyr-305) (IP1041; lanes 6-9). In some lanes, the antibodies were used in the absence (lane 2 & 6) or presence of I $\kappa$ B $\alpha$  (Tyr-42) (lane 3 & 8) or I $\kappa$ B $\alpha$  (Tyr-305) (lane 4 & 7) blocking peptides, or BSA conjugated to phospho-tyrosine (lane 5 & 9).

### Anti-I $\kappa$ B $\alpha$ (Tyr-42), Phosphospecific Antibody - Background

The NF- $\kappa$ B/Rel transcription factors are present in the cytosol in an inactive state complexed with the inhibitory I $\kappa$ B proteins. Activation of I $\kappa$ B $\alpha$  occurs through both serine and tyrosine phosphorylation events. Activation through phosphorylation at Ser-32 and Ser-36 is followed by proteasome-mediated degradation, resulting in the release and nuclear translocation of active NF- $\kappa$ B. This pathway of I $\kappa$ B $\alpha$  regulation occurs in response to various NF- $\kappa$ B-activating agents, such as TNF $\alpha$ , interleukins, LPS, and irradiation. An alternative pathway for I $\kappa$ B $\alpha$  regulation occurs through tyrosine phosphorylation of Tyr-42 and Tyr-305. Tyr-42 is phosphorylated in response to oxidative stress and growth factors. This phosphorylation can lead to degradation of I $\kappa$ B $\alpha$  and NF- $\kappa$ B-activation. In contrast, Tyr-305 phosphorylation by c-Abl has been implicated in I $\kappa$ B $\alpha$  nuclear translocation and inhibition of NF- $\kappa$ B-activation. Thus, tyrosine phosphorylation of I $\kappa$ B $\alpha$  may be an important regulatory mechanism in NF- $\kappa$ B signaling.