

## IKK $\alpha$ (E-20): sc-7120

### BACKGROUND

The transcription factor NF $\kappa$ B is retained in the cytoplasm in an inactive form by the inhibitory protein I $\kappa$ B. Activation of NF $\kappa$ B requires that I $\kappa$ B be phosphorylated on specific serine residues, which results in targeted degradation of I $\kappa$ B. I $\kappa$ B kinase  $\alpha$  (IKK $\alpha$ ), previously designated CHUK, interacts with I $\kappa$ B- $\alpha$  and specifically phosphorylates I $\kappa$ B- $\alpha$  on Serines 32 and 36, the sites that trigger its degradation. IKK $\alpha$  appears to be critical for NF $\kappa$ B activation in response to proinflammatory cytokines. Phosphorylation of I $\kappa$ B by IKK $\alpha$  is stimulated by the NF $\kappa$ B inducing kinase (NIK), which itself is a central regulator for NF $\kappa$ B activation in response to TNF and IL-1. The functional IKK complex contains three subunits, IKK $\alpha$ , IKK $\beta$  and IKK $\gamma$  (also designated NEMO), and each appear to make essential contributions to I $\kappa$ B phosphorylation.

### REFERENCES

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- Thanos, D., et al. 1995. NF $\kappa$ B: a lesson in family values. *Cell* 80: 529-532.
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- DiDonato, J.A., et al. 1997. A cytokine-responsive I $\kappa$ B kinase that activates the transcription factor NF $\kappa$ B. *Nature* 388: 548-554.
- Régnier, C.H., et al. 1997. Identification and characterization of an I $\kappa$ B kinase. *Cell* 90: 373-383.
- Song, H.Y., et al. 1997. Tumor necrosis factor (TNF)-mediated kinase cascades: bifurcation of nuclear factor- $\kappa$ B and c-Jun N-terminal kinase (JNK/SAPK) pathways at TNF receptor-associated factor 2. *Proc. Natl. Acad. Sci. USA* 94: 9792-9296.
- Zandi, E., et al. 1997. The I $\kappa$ B kinase complex (IKK) contains two kinase subunits, IKK $\alpha$  and IKK $\beta$ , necessary for I $\kappa$ B phosphorylation and NF $\kappa$ B activation. *Cell* 91: 243-252.

### CHROMOSOMAL LOCATION

Genetic locus: CHUK (human) mapping to 10q24.31; Chuk (mouse) mapping to 19 C3.

### SOURCE

IKK $\alpha$  (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping to the C-terminus of IKK $\alpha$  of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7120 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

IKK $\alpha$  (E-20) is recommended for detection of IKK $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

IKK $\alpha$  (E-20) is also recommended for detection of IKK $\alpha$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for IKK $\alpha$  siRNA (h): sc-29365, IKK $\alpha$  siRNA (m): sc-29366, IKK $\alpha$  shRNA Plasmid (h): sc-29365-SH, IKK $\alpha$  shRNA Plasmid (m): sc-29366-SH, IKK $\alpha$  shRNA (h) Lentiviral Particles: sc-29365-V and IKK $\alpha$  shRNA (m) Lentiviral Particles: sc-29366-V.

Molecular Weight of IKK $\alpha$ : 85 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or A-673 cell lysate: sc-2414.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

- Romashkova, J.A., et al. 1999. NF $\kappa$ B is a target of AKT in anti-apoptotic PDGF signalling. *Nature* 401: 86-90.
- Gonzalez-Polo, R.A., et al. 2003. Vitamin E blocks early events induced by 1-methyl-4-phenylpyridinium (MPP<sup>+</sup>) in cerebellar granule cells. *J. Neurochem.* 84: 305-315.
- Rashmi, R., et al. 2005. Human colon cancer cells lacking Bax resist curcumin-induced apoptosis and Bax requirement is dispensable with ectopic expression of Smac or downregulation of Bcl-x<sub>L</sub>. *Carcinogenesis* 26: 713-723.
- Kabir, S.M., et al. 2009. Desensitization of  $\beta$ -adrenergic receptors in lung injury induced by 2-chloroethyl ethyl sulfide, a mustard analog. *J. Biochem. Mol. Toxicol.* 23: 59-70.

### STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.