

# IKK $\gamma$ (M-18): sc-8256

## 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 the sites that trigger its degradation, Serines 32 and 36. 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

- Verma, I.M., et al. 1995. Rel/NF $\kappa$ B/I $\kappa$ B family: intimate tales of association and dissociation. *Genes Dev.* 9: 2723-2735.
- Thanos, D. and Maniatis, T. 1995. NF $\kappa$ B: a lesson in family values. *Cell* 80: 529-532.

## CHROMOSOMAL LOCATION

Genetic locus: IKBKG (human) mapping to Xq28, OPTN (human) mapping to 10p13; Ikbkg (mouse) mapping to X A7.3, Optn (mouse) mapping to 2 A1.

## SOURCE

IKK $\gamma$  (M-18) is available as either goat (sc-8256) or rabbit (sc-8256-R) affinity purified antibody polyclonal raised against a peptide mapping at the C-terminus of IKK $\gamma$  of mouse 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-8256 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

IKK $\gamma$  (M-18) is recommended for detection of IKK $\gamma$  and, to a lesser extent, Optineurin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 $\gamma$  (M-18) is also recommended for detection of IKK $\gamma$  and, to a lesser extent, Optineurin in additional species, including equine, canine, bovine and porcine.

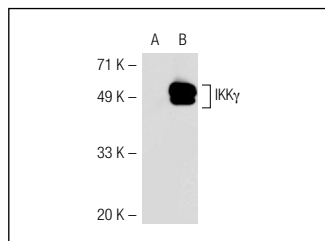
Molecular Weight of IKK $\gamma$ : 48 kDa.

Positive Controls: IKK $\gamma$  (h): 293T Lysate: sc-116282, U-937 cell lysate: sc-2239 or K-562 whole cell lysate: sc-2203.

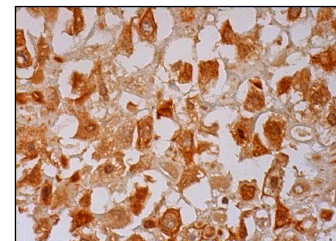
## STORAGE

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

## DATA



IKK $\gamma$  (M-18)-R: sc-8256-R. Western blot analysis of IKK $\gamma$  expression in non-transfected: sc-117752 (A) and human IKK $\gamma$  transfected: sc-116282 (B) 293T whole cell lysates.



IKK $\gamma$  (M-18)-R: sc-8256-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of decidual cells.

## SELECT PRODUCT CITATIONS

- Huang, T.T., et al. 2003. Sequential modification of nemo/IKK $\gamma$  by SUMO-1 and ubiquitin mediates NF $\kappa$ B activation by genotoxic stress. *Cell* 115: 565-576.
- Sanchez, J.F., et al. 2003. Glycogen synthase kinase 3 $\beta$ -mediated apoptosis of primary cortical astrocytes involves inhibition of nuclear factor  $\kappa$ B signaling. *Mol. Cell. Biol.* 23: 4649-4662.
- Bustamante, J., et al. 2007. A novel X-linked recessive form of Mendelian susceptibility to mycobacterial disease. *J. Med. Genet.* 44: e65.
- Jain, P., et al. 2007. Identification of human T cell leukemia virus type 1 tax amino acid signals and cellular factors involved in secretion of the viral oncoprotein. *J. Biol. Chem.* 282: 34581-34593.
- Solt, L.A., et al. 2009. NEMO-binding domains of both IKK $\alpha$  and IKK $\beta$  regulate I $\kappa$ B kinase complex assembly and classical NF $\kappa$ B activation. *J. Biol. Chem.* 284: 27596-27608.
- Petersen, S.L., et al. 2010. Overcoming cancer cell resistance to Smac mimetic induced apoptosis by modulating cIAP-2 expression. *Proc. Natl. Acad. Sci. USA* 107: 11936-11941.
- Gagliardo, R., et al. 2011. I $\kappa$ B kinase-driven nuclear factor- $\kappa$ B activation in patients with asthma and chronic obstructive pulmonary disease. *J. Allergy Clin. Immunol.* 128: 635.e1-645.e2.

## RESEARCH USE

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



Try **IKK $\gamma$  (F-10): sc-166398** or **IKK $\gamma$  (B-3): sc-8032**, our highly recommended monoclonal alternatives to IKK $\gamma$  (M-18). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **IKK $\gamma$  (F-10): sc-166398**.