SANTA CRUZ BIOTECHNOLOGY, INC.

IKK-i (72B587): sc-52931

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The transcription factor NFκB is retained in the cytoplasm in an inactive form by the inhibitory protein IκB. Activation of NFκB requires that IκB be phosphorylated on specific serine residues, which results in targeted degradation of IκB. IκB kinase α (IKKα), previously designated CHUK, interacts with IκBα and specifically phosphorylates IκBα on Serine 32 and 36, the sites that trigger its degradation. The functional IKK complex contains three subunits, IKKα, IKKβ and IKKγ (also designated NEMO), and each appear to make essential contributions to IκB phosphorylation. IKK-i is a serine/threonine kinase that shares homology with IKKα and IKKβ. IKK-i is primarily expressed in immune cells and is induced by lipopolysaccharide and by proinflammatory cytokines including TNFα, IL-1 and IL-6. IKK-i is also expressed in a number of cancer cells. It phosphorylates inhibitors of NFκB, leading to the dissociation of the inhibitor/NFκB complex and, eventually, the degradation of the inhibitor. Overexpression of IKK-i has been shown to result in phosphorylation of IkBα on Ser 32 and Ser 36, and in NFκB activation, suggesting that IKK-i may act as an IκB kinase in the immune system.

REFERENCES

1. Verma, I.M., et al. 1995. Rel/NFκB/IκB family: intimate tales of association and dissociation. Genes Dev. 9: 2723-2735.
2. Thanos, D. and Maniatis, T. 1995. NFκB: a lesson in family values. Cell 80: 529-532.
3. Conelly, M.A. and Marcu, K.B.1995. CHUK, a new member of the helix-loop-helix and leucine zipper families of interacting proteins, contains a serine-threonine kinase catalytic domain. Cell. Mol. Biol. Res. 41: 537-549.
4. Malinin, N.L., et al. 1997. MAP3K-related kinase involved in NFκB induction by TNF, CD95 and IL-1. Nature 385: 540-544.
5. DiDonato, J.A., et al. 1997. A cytokine-responsive IκB kinase that activates the transcription factor NFκB. Nature 388: 548-554.
6. Regnier, C.H., et al. 1997. Identification and characterization of an IκB kinase. Cell 90: 373-383.
7. Song, H.Y., et al. 1997. Tumor necrosis factor (TNF)-mediated kinase cascades: bifurcation of NFκB and c-Jun N-terminal kinase (JNK/SAPK) pathways at TNF receptor-associated factor 2. Proc. Natl. Acad. Sci. USA 94: 9792-9296.
8. Zandi, E., et al. 1997. The IκB kinase complex (IKK) contains two kinase subunits, IKKα and IKKβ, necessary for IκB phosphorylation and NFκB activation. Cell 91: 243-252.
9. Yamaoka, S., et al. 1998. Complementation cloning of NEMO, a component of the IκB kinase complex essential for NFκB activation. Cell 93: 1231-1240.

CHROMOSOMAL LOCATION

Genetic locus: IKBKE (human) mapping to 1q32.1; Ikbke (mouse) mapping to 1 E4.

RESEARCH USE

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

SOURCE

IKK-i (72B587) is a mouse monoclonal antibody raised against a IKK-i synthetic peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

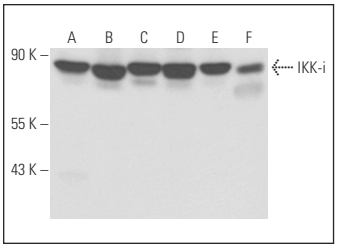
IKK-i (72B587) is recommended for detection of IKK-i of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for IKK-i siRNA (h): sc-39056, IKK-i siRNA (m): sc-39057, IKK-i shRNA Plasmid (h): sc-39056-SH, IKK-i shRNA Plasmid (m): sc-39057-SH, IKK-i shRNA (h) Lentiviral Particles: sc-39056-V and IKK-i shRNA (m) Lentiviral Particles: sc-39057-V.

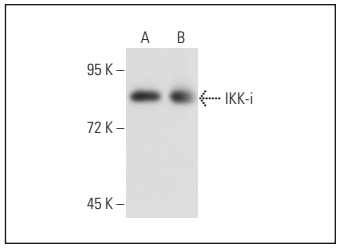
Molecular Weight of IKK-i: 80 kDa.

Positive Controls: IKK-i (m): 293T Lysate: sc-121028, RAW 309 Cr.1 cell lysate: sc-3814 or Daudi cell lysate: sc-2415.

DATA



IKK-i (72B587): sc-52931. Western blot analysis of IKK-i expression in Jurkat (**A**), RAW 309 Cr.1 (**B**), MCF7 (**C**), Daudi (**D**) and HeLa (**E**) whole cell lysates and mouse liver tissue extract (**F**).



IKK-i (72B587): sc-52931. Western blot analysis of IKK-i expression in non-transfected: sc-117752 (**A**) and mouse IKK-i transfected: sc-121028 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Orlova, Z., et al. 2019. IKKε regulates the breast cancer stem cell phenotype. Biochim. Biophys. Acta Mol. Cell Res. 1866: 598-611.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.