SANTA CRUZ BIOTECHNOLOGY, INC.

IKKα (H-744): sc-7218

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 IκB-α and specifically phosphorylates IκB-α on the sites that trigger its degradation, Serines 32 and 36. IKKα appears to be critical for NFκB activation in response to proinflammatory cytokines. Phosphorylation of IκB by IKKα is stimulated by the NFκB inducing kinase (NIK), which itself is a central regulator for NFκB activation in response to TNF and IL-1. The functional IKK complex contains three subunits, IKKα, IKKβ and IKKγ (also designated NEMO), and each appear to make essential contributions to IκB phosphorylation.

CHROMOSOMAL LOCATION

Genetic locus: CHUK (human) mapping to 10q24.31, IKBKB (human) mapping to 8p11.21; Chuk (mouse) mapping to 19 C3, Ikbkb (mouse) mapping to 8 A2.

SOURCE

IKKα (H-744) is a rabbit polyclonal antibody raised against amino acids 1-745 representing full length IKKα of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose (sc-7218 AC) conjugate for immunoprecipitation, 500 µg/0.25 ml agarose in 1 ml; as fluorescein (sc-7218 FITC) or rhodamine (sc-7218 TRITC) conjugates for immunofluorescence, 200 µg/ml; and as Alexa Fluor® 405 (sc-7218 AF405), Alexa Fluor® 488 (sc-7218 AF488) or Alexa Fluor® 647 (sc-7218 AF647) conjugates for cytometry flow or immunofluorescence, 100 µg/2 ml.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

IKKα (H-744) is recommended for detection of IKKα and, to a lesser extent, IKKβ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

IKKα (H-744) is also recommended for detection of IKKα and, to a lesser extent, IKKβ in additional species, including canine, bovine and porcine.

Molecular Weight of IKKα: 85 kDa.

Positive Controls: BJAB Whole Cell Lysate : sc-2207,

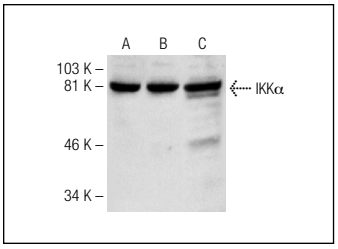
STORAGE

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

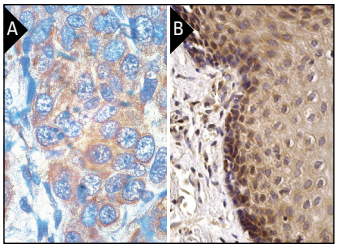
RESEARCH USE

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

DATA



IKKα (H-744): sc-7218. Western blot analysis of IKKα expression in A-673 (**A**), BJAB (**B**) and Jurkat (**C**) whole cell lysates.



IKKα (H-744): sc-7218. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic localization of IKKα (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervix tissue showing cytoplasmic staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Yin, M.J., et al. 1998. HTLV-I Tax protein binds to MEKK1 to stimulate IB kinase activity and NFκB activation. Cell 93: 875-884.
2. Fukunishi, N., et al. 2010. Induction of δNp63 by the newly identified keratinocyte-specific transforming growth factor β signaling pathway with Smad2 and IκB Kinase α in squamous cell carcinoma. Neoplasia 12: 969-979.
3. Ramakrishnan, P., et al. 2011. Sam68 is required for both NFκB activation and apoptosis signaling by the TNF receptor. Mol. Cell 43: 167-179.
4. Huang, W.C., et al. 2012. Hepatitis B virus X protein induces IKKα nuclear translocation via Akt-dependent phosphorylation to promote the motility of hepatocarcinoma cells. J. Cell. Physiol. 227: 1446-1454.
5. Lupino, E., et al. 2012. IκB kinase b is required for activation of NFκB and AP-1 in CD3/CD28-stimulated primary CD4+ T cells. J. Immunol. 188: 2545-2555.
6. Manna, S., et al. 2013. Proteasome inhibition by bortezomib increases IL-8 expression in androgen-independent prostate cancer cells: the role of IKKα. J. Immunol. 191: 2837-2846.
7. Kumar, S., et al. 2013. The anticancer potential of flavonoids isolated from the stem bark of *Erythrina suberosa* through induction of apoptosis and inhibition of STAT signaling pathway in human leukemia HL-60 cells. Chem. Biol. Interact. 205: 128-137.