SANTA CRUZ BIOTECHNOLOGY, INC.

IKK-ε (A-11): sc-376114

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. 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-ε, also designated IKK-i or IKBKE, is a serine/threonine kinase that shares homology with IKKα and IKKβ. IKK-ε is primarily expressed in immune cells and is induced by lipopolysaccharide and by proinflammatory cytokines including TNFα, IL-1 and IL-6. Overexpression of IKK-ε has been shown to result in phosphorylation of IκBα on Ser 32 and Ser 36, and in NFκB activation, suggesting that IKK-ε may act as an IκB kinase in the immune system.

REFERENCE

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.

CHROMOSOMAL LOCATION

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

SOURCE

IKK-ε (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-24 at the N-terminus of IKK-ε of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IKK-ε (A-11) is available conjugated to agarose (sc-376114 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376114 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376114 PE), fluorescein (sc-376114 FITC), Alexa Fluor® 488 (sc-376114 AF488), Alexa Fluor® 546 (sc-376114 AF546), Alexa Fluor® 594 (sc-376114 AF594) or Alexa Fluor® 647 (sc-376114 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376114 AF680) or Alexa Fluor® 790 (sc-376114 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376114 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

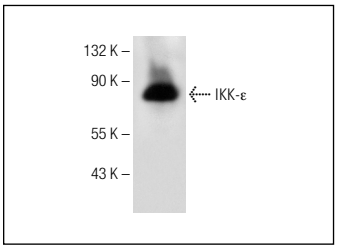
IKK-ε (A-11) is recommended for detection of IKK-ε of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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).

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

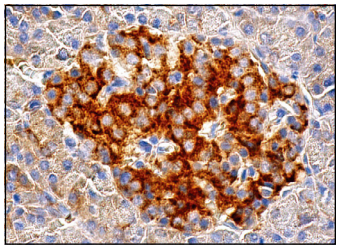
Molecular Weight of IKK-ε: 80 kDa.

Positive Controls: RAW 309 Cr.1 + LPS cell lysate: sc-24770, RAW 309 Cr.1 cell lysate: sc-3814 or Jurkat whole cell lysate: sc-2204.

DATA



IKK-ε (A-11): sc-376114. Western blot analysis of IKK-ε expression in LPS treated RAW 309 Cr.1 whole cell lysate.



IKK-ε (A-11): sc-376114. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans.

SELECT PRODUCT CITATIONS

1. 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.
2. Liu, X., et al. 2020. Identification of natural molecular determinants of ross river virus type I interferon modulation. J. Virol. 94: e01788-19.
3. Farini, A., et al. 2021. Defective dystrophic thymus determines degenerative changes in skeletal muscle. Nat. Commun. 12: 2099.
4. Chen, C.M., et al. 2022. *Sigesbeckia orientalis* extract ameliorates the experimental diabetic nephropathy by downregulating the inflammatory and oxidative stress signaling pathways. Evid. Based Complement. Alternat. Med. 2022: 3323745.
5. Uchida, T., et al. 2023. Promotion of knee cartilage degradation by IκB kinase ε in the pathogenesis of osteoarthritis in human and murine models. Arthritis Rheumatol. 75: 937-949.

RESEARCH USE

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