SANTA CRUZ BIOTECHNOLOGY, INC.

p-IKKα/β (Ser 176): sc-21661



BACKGROUND

The transcription factor NF κ B is retained in the cytoplasm in an inactive form by the inhibitory protein I κ B. Activation of NF κ B requires that I κ B be phosphorylated on specific serine residues, which results in targeted degradation of I κ B. I κ B kinase α (IKK α) interacts with I κ B- α and specifically phosphorylates I κ B- α on the sites that trigger its degradation. Serines 32 and 36. The functional IKK complex contains three subunits, designated IKK α , IKK β and IKK γ (also designated NEMO); each appears to make essential contributions to I κ B phosphorylation. NF κ B inducing kinase (NIK) phosphorylates IKK α at Serine 176.

CHROMOSOMAL LOCATION

Genetic locus: CHUK (human) mapping to 10q24.2, IKBKB (human) mapping to 8p11.21; Chuk (mouse) mapping to 19 C3, Ikbkb (mouse) mapping to 8 A2.

SOURCE

p-IKK α/β (Ser 176) is available as either goat (sc-21661) or rabbit (sc-21661-R) polyclonal antibody raised against a short amino acid sequence containing Ser 176 phosphorylated IKK α of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-21661 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-IKK α/β (Ser 176) is recommended for detection of Ser 176 phosphorylated IKK α and Ser 177 phosphorylated IKK β 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-IKK α/β (Ser 176) is also recommended for detection of correspondingly phosphorylated on IKK α and IKK β in additional species, including canine, bovine and porcine.

Molecular Weight of p-IKK α : 85 kDa.

Molecular Weight of p-IKK β : 87 kDa.

Positive Controls: HeLa + TNF α cell lysate: sc-2228 or HeLa whole cell lysate: sc-2200.

STORAGE

Store at 4° C, **D0 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 or our catalog for detailed protocols and support products.

RESEARCH USE

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

DATA



 $\begin{array}{l} p\text{-IKK}\alpha/\beta \; (\text{Ser 176)-R: sc-21661-R. Western blot analysis of IKK}\alpha/\beta phosphorylation in untreated (A), TNF\alpha treated (B) and TNF\alpha and lambda protein phosphatase (sc-200312A) treated (C) HeLa whole cell lysates. \end{array}$

SELECT PRODUCT CITATIONS

- 1. Shambharkar, P.B., et al. 2007. Phosphorylation and ubiquitination of the $I\kappa B$ kinase complex by two distinct signaling pathways. EMBO J. 26: 1794-1805.
- Cho, H.Y., et al. 2007. Signal transduction pathways of tumor necrosis factor -mediated lung injury induced by ozone in mice. Am. J. Respir. Crit. Care Med. 175: 829-839.
- 3. Fan, S., et al. 2007. Ras effector pathways modulate scatter factor-stimulated NF- κ B signaling and protection against DNA damage. Oncogene 26: 4774-4796.
- 4. Kim, J.H., et al. 2008. The non-provitamin A carotenoid, lutein, inhibits NF κ B-dependent gene expression through redox-based regulation of the phosphatidylinositol 3-kinase/PTEN/Akt and NF κ B-inducing kinase pathways: role of H₂O₂ in NF κ B activation. Free Radic. Biol. Med. 45: 885-896.
- 5. Lee, S.J., et al. 2008. CT20126, a novel immunosuppressant, prevents collagen-induced arthritis through the down-regulation of inflammatory gene expression by inhibiting NF κ B activation. Biochem. Pharmacol. 76: 79-90.
- Ku, K.T., et al. 2008. Miyabenol A inhibits LPS-induced NO production via IKK/IkappaB inactivation in RAW 264.7 macrophages: possible involvement of the p38 and PI3K pathways. J. Agric. Food Chem. 56: 8911-8918.
- 7. Fan, S., et al. 2009. Role of Src signal transduction pathways in scatter factor-mediated cellular protection. J. Biol. Chem. 97: 7561-7577.
- Sánchez-Duffhues, G., et al. 2009. Denbinobin inhibits nuclear factor-κB and induces apoptosis via reactive oxygen species generation in human leukemic cells. Biochem. Pharmacol. 77: 1401-1409.
- Selimovic, D., et al. 2011. Apoptosis related protein-1 triggers melanoma cell death via interaction with the juxtamembrane region of p75 neurotrophin receptor. J. Cell. Mol. Med. 16: 349-361.
- Schuett, H., et al. 2012. Transsignaling of interleukin-6 crucially contributes to atherosclerosis in mice. Arterioscler. Thromb. Vasc. Biol. 32: 281-290.