

IKK beta (human; full length), pAb

Alternate Names: Inhibitor of nuclear factor kappa-B kinase subunit beta, I-kappa-B-kinase beta, IKK-B, IKBKB, I-kappa-B kinase 2, IKK2

Cat. No. 68-0049-100
Lot. No. 30288

Quantity: 100 µg
Storage: -20°C

FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS

CERTIFICATE OF ANALYSIS

Page 1 of 2

This antibody was developed and validated by the Medical Research Council Protein Phosphorylation and Ubiquitylation Unit (University of Dundee, Dundee, UK).

Background

Protein ubiquitylation and protein phosphorylation are the two major mechanisms that regulate the functions of proteins in eukaryotic cells. However, these different posttranslational modifications do not operate independently of one another, but are frequently interlinked to enable biological processes to be controlled in a more complex and sophisticated manner. Studying how protein phosphorylation events control the ubiquitin system and how ubiquitylation regulates protein phosphorylation has become a focal point of the study of cell regulation and human disease. IKK is a serine protein kinase and the IKK complex contains α and β subunits termed IKK α and IKK β . The catalytic activities of both IKK α and IKK β make essential contributions to I κ B phosphorylation and NF- κ B activation (Zandi *et al.*, 1997). Cloning of human IKK β was described in 1997 by a number of groups (Mercurio *et al.*, 1997; Woronicz *et al.*, 1997; Zandi *et al.*, 1997). IKK β shares 50% identity with IKK α and like it contains a kinase domain, a leucine zipper, and a helix-loop helix (Zandi *et al.*, 1997). IKK β can phosphorylate and modulate the functions of several cytosolic proteins, including β -catenin, SRC-3, FOXO3a, CYLD and DOK1 (Lee *et al.*, 2007). IKK β is phosphorylated for activation by several factors, such as pro-inflammatory cytokines and

Continued on page 2

Physical Characteristics

Quantity: 100 µg

Concentration: to be provided on shipping

Source: sheep polyclonal antibody

Immunogen: human IKK beta (residues 1-736) [6His-tagged]

Purification: affinity-purified using immobilized immunogen

Formulation: phosphate-buffered saline

Specificity: detects IKK beta at ~87 kDa

Reactivity: human

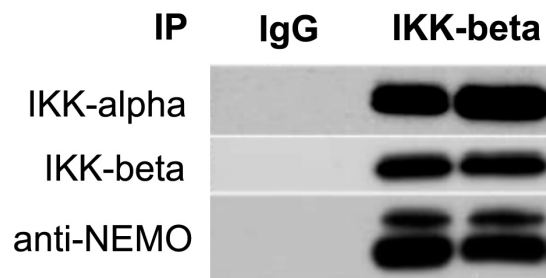
Species cross reactivity: mouse

Stability/Storage: 12 months at -20°C; aliquot as required

Research Applications and Quality Assurance

Western Immunoblotting: not tested

Immunoprecipitation: use 10 µg/mg of cell extract



Immunoprecipitation Assay:

Immunoprecipitation was performed from RAW264.7 macrophage total cell extract (1 mg) using 10 µg of anti-IKK beta antibody (Cat# 68-0049-100 or pre-immune serum (IgG)). IKK beta (as well as IKK alpha and NEMO) were subsequently detected by Western Blot using commercially available antibodies.

N.B: As IKK beta is a component of the canonical IKK complex, other components of the complex (the catalytic subunits IKK alpha and NEMO) are also immunoprecipitated with the anti-IKK beta antibody.



www.ubiquigent.com
Dundee, Scotland, UK

ORDERS / SALES SUPPORT

International: +1-617-245-0020
US Toll-Free: 1-888-4E1E2E3 (1-888-431-3233)
Email: sales.support@ubiquigent.com

UK HQ and TECHNICAL SUPPORT

International: +44 (0) 1382 381147 (9AM-5PM UTC)
US/Canada: +1-617-245-0020 (9AM-5PM UTC)
Email: tech.support@ubiquigent.com

Email services@ubiquigent.com for enquiries regarding compound profiling and/or custom assay development services.

© Ubiquigent 2014. Unless otherwise noted, Ubiquigent, Ubiquigent logo and all other trademarks are the property of Ubiquigent, Ltd.

Limited Terms of Use: For research use only. Not for use in humans or for diagnostics. Not for distribution or resale in any form, modification or derivative OR for use in providing services to a third party (e.g. screening or profiling) without the written permission of Ubiquigent, Ltd.

Lot-specific COA version tracker: v1.0.0



IKK beta (human; full length), pAb

Alternate Names: Inhibitor of nuclear factor kappa-B kinase subunit beta, I-kappa-B-kinase beta, IKK-B, IKBKB, I-kappa-B kinase 2, IKK2

Cat. No. 68-0049-100
Lot. No. 30288

Quantity: 100 µg
Storage: -20°C

FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS

CERTIFICATE OF ANALYSIS

Page 2 of 2

Background

Continued from page 1

the Tax oncoprotein of HTLV-1. In cells infected by HTLV-1, IKK β is persistently phosphorylated and conjugated with monoubiquitin due to Tax expression. Although this Tax-induced monoubiquitylation appears to be an important regulation system for IKK β , how the monoubiquitylation occurs is unknown and its role in NF- κ B signalling is still unclear (Wada *et al.*, 2009). TNF α mediates tumour angiogenesis through dysregulated mTOR signalling caused by suppression of TSC1 by IKK β , revealing a novel mechanism of inflammation-mediated tumour angiogenesis. Further investigations of the IKK β /TSC1/mTOR signalling pathway may identify new molecules involved in regulating TNF α -induced pathological disorders. Preventing the phosphorylation of TSC1 may have important clinical implications for the treatment or prevention of cancer (Lee *et al.*, 2007).

Antibody Production:

Anti-IKK beta (human) polyclonal antibody was raised in sheep against IKK beta (residues 1-736 of human IKK beta). The antibodies were purified by the Medical Research Council Protein Phosphorylation and Ubiquitylation Unit (MRC-PPU, University of Dundee, Dundee, U.K.) by affinity purification of the anti-IKK beta pAbs from the sheep serum using a 6His-tagged antigen-agarose column. Anti-IKK beta (human) pAb was sourced by Ubiquigent directly from the MRC-PPU.

General References:

Lee DF, Kuo HP, Chen CT, Hsu JM, Chou CK, Wei Y, *et al.* (2007)

IKK beta suppression of TSC1 links inflammation and tumor angiogenesis via the mTOR pathway. *Cell* **130**, 440-455.

Mercurio F, Zhu H, Murray BW, Shevchenko A, Bennett BL, Li J, *et al.* (1997) IKK-1 and IKK-2: cytokine-activated I κ B kinases essential for NF- κ B activation. *Science* **278**, 860-866.

Wada K, Niida M, Tanaka M and Kamitani T (2009) Ro52-mediated monoubiquitination of IKK β down-regulates NF- κ B signalling. *J Biochem* **146**, 821-832.

Woronicz JD, Gao X, Cao Z, Rothe M and Goeddel DV (1997) I κ B kinase-beta: NF- κ B activation and complex formation with I κ B kinase-alpha and NIK. *Science* **278**, 866-869.

Zandi E, Rothwarf DM, Delhase M, Hayakawa M and Karin M (1997) The I κ B kinase complex (IKK) contains two kinase subunits, IKKalpha and IKKbeta, necessary for I κ B phosphorylation and NF- κ B activation. *Cell* **91**, 243-252.

Application Reference:

Zhang J, Clark K, Lawrence T, Peggie MW and Cohen P (2014) An unexpected twist to the activation of IKKbeta: TAK1 primes IKKbeta for activation by autophosphorylation. *Biochem J* **461**, 531-537.



www.ubiquigent.com
Dundee, Scotland, UK

ORDERS / SALES SUPPORT

International: +1-617-245-0020
US Toll-Free: 1-888-4E1E2E3 (1-888-431-3233)
Email: sales.support@ubiquigent.com

UK HQ and TECHNICAL SUPPORT

International: +44 (0) 1382 381147 (9AM-5PM UTC)
US/Canada: +1-617-245-0020 (9AM-5PM UTC)
Email: tech.support@ubiquigent.com

Email services@ubiquigent.com for enquiries regarding compound profiling and/or custom assay development services.

© Ubiquigent 2014. Unless otherwise noted, Ubiquigent, Ubiquigent logo and all other trademarks are the property of Ubiquigent, Ltd.

Limited Terms of Use: For research use only. Not for use in humans or for diagnostics. Not for distribution or resale in any form, modification or derivative OR for use in providing services to a third party (e.g. screening or profiling) without the written permission of Ubiquigent, Ltd.

Lot-specific COA version tracker: v1.0.0