SANTA CRUZ BIOTECHNOLOGY, INC.

TBK1 (A-6): sc-398366

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 IkB-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. TANK binding kinase (TBK1), also designated T2K, is a novel IKK-related kinase that has been identified in murine and human tissues. TBK1 was shown to complex with TRAF2 and TANK in the NFκB activation pathway. TBK1 shares homology with IKKα and IKKβ in the amino-terminal half, which includes the kinase domain.

CHROMOSOMAL LOCATION

Genetic locus: TBK1 (human) mapping to 12q14.2; Tbk1 (mouse) mapping to 10 D2.

SOURCE

TBK1 (A-6) is a mouse monoclonal antibody raised against amino acids 355-729 mapping at the C-terminus of TBK1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TBK1 (A-6) is available conjugated to agarose (sc-398366 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398366 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398366 PE), fluorescein (sc-398366 FITC), Alexa Fluor® 488 (sc-398366 AF488), Alexa Fluor® 546 (sc-398366 AF546), Alexa Fluor® 594 (sc-398366 AF594) or Alexa Fluor® 647 (sc-398366 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398366 AF680) or Alexa Fluor® 790 (sc-398366 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TBK1 (A-6) is recommended for detection of TBK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 TBK1 siRNA (h): sc-39058, TBK1 siRNA (m): sc-39059, TBK1 shRNA Plasmid (h): sc-39058-SH, TBK1 shRNA Plasmid (m): sc-39059-SH, TBK1 shRNA (h) Lentiviral Particles: sc-39058-V and TBK1 shRNA (m) Lentiviral Particles: sc-39059-V.

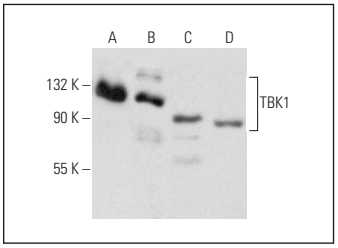
Molecular Weight of TBK1: 80 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or PC-12 cell lysate: sc-2250.

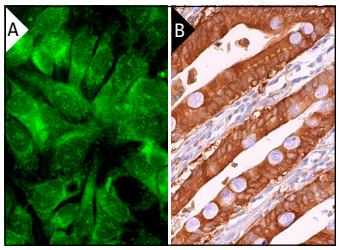
STORAGE

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

DATA



TBK1 (A-6): sc-398366. Western blot analysis of TBK1 expression in HeLa (**A**), Jurkat (**B**), PC-12 (**C**) and KNRK (**D**) whole cell lysates.



TBK1 (A-6): sc-398366. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. He, X., et al. 2017. ERRα negatively regulates type I interferon induction by inhibiting TBK1-IRF3 interaction. PLoS Pathog. 13: e1006347.
2. Bussi, C., et al. 2018. α-synuclein fibrils recruit TBK1 and OPTN to lysosomal damage sites and induce autophagy in microglial cells. J. Cell Sci. 131: jcs226241.
3. Zachari, M., et al. 2019. Selective autophagy of mitochondria on a ubiquitin-endoplasmic-reticulum platform. Dev. Cell 50: 627-643.e5.
4. Schlütermann, D., et al. 2021. FIP200 controls the TBK1 activation threshold at SQSTM1/p62-positive condensates. Sci. Rep. 11: 13863.
5. Zheng, Y., et al. 2022. *Gentiana scabra* restrains hepatic pro-inflammatory macrophages to ameliorate non-alcoholic fatty liver disease. Front. Pharmacol. 12: 816032.
6. Jiao, J., et al. 2022. Expression of STING is increased in monocyte-derived macrophages and contributes to liver inflammation in hepatic ischemia-reperfusion injury. Am. J. Pathol. 192: 1745-1762.
7. Hu, Z., et al. 2023. VANGL2 inhibits antiviral IFN-I signaling by targeting TBK1 for autophagic degradation. Sci. Adv. 9: eadg2339.
8. Li, W., et al. 2023. Tetrandrine alleviates atherosclerosis via inhibition of STING-TBK1 pathway and inflammation in macrophages. Int. Immunopharmacol. 119: 110139.
9. Li, Z., et al. 2024. Non-cytopathic bovine viral diarrhea virus (BVDV) inhibits innate immune responses via induction of mitophagy. Vet. Res. 55: 27.
10. Woo, M.S., et al. 2024. STING orchestrates the neuronal inflammatory stress response in multiple sclerosis. Cell 187: 4043-4060.e30.

RESEARCH USE

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