SANTA CRUZ BIOTECHNOLOGY, INC.

TNIK (53): sc-136103

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. TNIK (TRAF2 and NCK-interacting protein kinase) is a 1,360 amino acid protein that contains one protein kinase domain and belongs to a subfamily of Ser/Thr protein kinases. Expressed ubiquitously with highest expression in brain, heart and skeletal muscle, TNIK functions as a stress-activated Ser/Thr kinase that catalyzes the ATP-dependent phosphorylation of target proteins and is thought to play a role in the response to environmental stress. Additionally, via its catalytic activity, TNIK may participate in cytoskeletal regulation events throughout the cell. TNIK exists as eight isoforms that are produced by alternative splicing events.

REFERENCES

1. Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. Science 241: 42-52.
2. Hunter, T. 1991. Protein kinase classification. Meth. Enzymol. 200: 3-37.
3. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. IX. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 5: 31-39.
4. Fu, C.A., et al. 1999. TNIK, a novel member of the germinal center kinase family that activates the c-Jun N-terminal kinase pathway and regulates the cytoskeleton. J. Biol. Chem. 274: 30729-30737.

CHROMOSOMAL LOCATION

Genetic locus: TNIK (human) mapping to 3q26.2; Tnik (mouse) mapping to 3 A3.

SOURCE

TNIK (53) is a mouse monoclonal antibody raised against amino acids 522-644 of TNIK of human 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.

APPLICATIONS

TNIK (53) is recommended for detection of TNIK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for TNIK siRNA (h): sc-78453, TNIK siRNA (m): sc-154540, TNIK shRNA Plasmid (h): sc-78453-SH, TNIK shRNA Plasmid (m): sc-154540-SH, TNIK shRNA (h) Lentiviral Particles: sc-78453-V and TNIK shRNA (m) Lentiviral Particles: sc-154540-V.

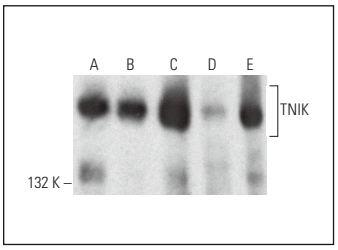
Molecular Weight of TNIK: 150 kDa.

Positive Controls: SK-MEL-28 cell lysate: sc-2236, Caki-1 cell lysate: sc-2224 or HEK293 whole cell lysate: sc-45136.

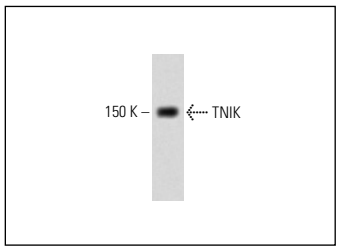
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



TNIK (53): sc-136103. Western blot analysis of TNIK expression in HEK293 (**A**), Caki-1 (**B**) and SK-MEL-28 (**C**) whole cell lysates and mouse spleen (**D**) and mouse brain (**E**) tissue extracts.



TNIK (53): sc-136103. Western blot analysis of TNIK expression in HEK293 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Gui, J., et al. 2011. Enormous influence of TNIK knockdown on intracellular signals and cell survival. Hum. Cell 24: 121-126.
2. Schürch, C., et al. 2012. CD27 signaling on chronic myelogenous leukemia stem cells activates Wnt target genes and promotes disease progression. J. Clin. Invest. 122: 624-638.
3. Gui, J., et al. 2013. Dynamic change of TNIK in response to tumor necrosis factor a in a TRAF2-dependent manner. Hum. Cell 26: 67-72.
4. Zieger, H.L., et al. 2020. Disease-associated synaptic scaffold protein CNK2 modulates PSD size and influences localisation of the regulatory kinase TNIK. Sci. Rep. 10: 5709.
5. Sato, K., et al. 2021. Simultaneous CK2/TNIK/DYRK1 inhibition by 108600 suppresses triple negative breast cancer stem cells and chemotherapy-resistant disease. Nat. Commun. 12: 4671.

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. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.