SANTA CRUZ BIOTECHNOLOGY, INC.

NCK1/2 (G-12): sc-166425

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The Power to Question

BACKGROUND

The NCK family of SH2/SH3 adaptor proteins consists of two members, NCK1 (NCKα) and NCK2 (NCKβ), which couple tyrosine kinase signaling, including the EGF and PDGF receptor-pathways, to downstream signaling proteins. Specifically, overexpression of NCK1 in NIH/3T3 cells decreases DNA synthesis stimulated by EGF. Furthermore, the SH2 domain of NCK2 inhibits EGF- and PDGF-induced DNA synthesis. The SH3 domain of NCK binds a proline-rich domain on PAK, a known actin cytoskeleton regulator. The NCK protein thus mediates the interaction between PAK and RAC. The NCK2 protein binds human PDGFR-β (Tyr-1009); overexpression of NCK2 inhibits PDGF-induced membrane ruffling and lamellipod formation. Various growth factor receptors, cell surface antigens and adhesion molecules phosphorylate mammalian NCK1 and NCK2. The human NCK1 and NCK2 genes map to chromosomes 3q22.3 and 2q12.2, respectively.

REFERENCES

1. Park, D. and Rhee, S.G. 1992. Phosphorylation of NCK in response to a variety of receptors, phorbol myristate acetate, and cyclic AMP. Mol. Cell. Biol. 12: 5816-5823.
2. Huebner, K., et al. 1994. Chromosome locations of genes encoding human signal transduction adapter proteins, Nck (NCK), Shc (SHC1), and Grb2 (GRB2). Genomics 22: 281-287.
3. Chen, M., et al. 1998. Identification of NCK family genes, chromosomal localization, expression, and signaling specificity. J. Biol. Chem. 273: 25171-25178.
4. Chen, M., et al. 2000. NCKβ adapter regulates actin polymerization in NIH 3T3 fibroblasts in response to platelet-derived growth factor bb. Mol. Cell. Biol. 20: 7867-7880.
5. Buday, L., et al. 2002. The NCK family of adapter proteins: regulators of actin cytoskeleton. Cell. Signal. 14: 723-731.
6. Kiosses, W.B., et al. 2002. A dominant-negative p65 PAK peptide inhibits angiogenesis. Circ. Res. 90: 697-702.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604930. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: NCK1 (human) mapping to 3q22.3, NCK2 (human) mapping to 2q12.2; Nck1 (mouse) mapping to 9 E3.3, Nck2 (mouse) mapping to 1 B.

SOURCE

NCK1/2 (G-12) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of NCK1 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

NCK1/2 (G-12) is recommended for detection of NCK1 and NCK2 isoform B 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NCK1/2 siRNA (h): sc-43959, NCK1/2 shRNA Plasmid (h): sc-43959-SH and NCK1/2 shRNA (h) Lentiviral Particles: sc-43959-V.

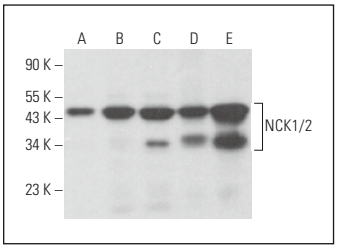
Molecular Weight of NCK1/2: 47 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, 3T3-L1 cell lysate: sc-2243 or H4 cell lysate: sc-2408.

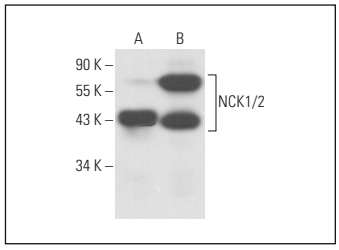
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NCK1/2 (G-12): sc-166425. Western blot analysis of NCK1/2 expression in 3T3-L1 (**A**), NIH/3T3 (**B**), RAW 264.7 (**C**), C6 (**D**) and PC-12 (**E**) whole cell lysates.



NCK1/2 (G-12): sc-166425. Western blot analysis of NCK1/2 expression in H4 (**A**) and HeLa (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Suvanto, M., et al. 2015. Podocyte proteins in congenital and minimal change nephrotic syndrome. Clin. Exp. Nephrol. 19: 481-488.

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.