

# NDC1 (S-14): sc-161929

## BACKGROUND

NDC1 (nucleoporin NDC1), also known as TMEM48 (transmembrane protein 48) or NET3, is a 674 amino acid multi-pass membrane protein, central core structure of the nuclear pore complex (NPC) and member of the NDC1 family that is crucial for selective nuclear protein import. Existing as four alternatively spliced isoforms which are encoded by a gene located on human chromosome 1, NDC1 interacts with Nup35 and anchors Aladin to the nuclear envelope of the NPC, a region of macromolecular transport between the nucleus and cytoplasm. In the absence of NDC1, Aladin becomes mislocalized and may lead to the development of an autosomal recessive disorder termed achalasia-addisonianism-alacrima (triple A) syndrome. Triple A syndrome is characterized by achalasia, alacrima and adrenocortico-tropin-resistant adrenal insufficiency. Robust expression in neural systems associated with cognitive, motor and sensory functions is consistent with the myriad of symptoms experienced by patients with triple A syndrome.

## REFERENCES

- Schirmer, E.C., et al. 2003. Nuclear membrane proteins with potential disease links found by subtractive proteomics. *Science* 301: 1380-1382.
- Lau, C.K., et al. 2006. Topology of yeast NDC1p: predictions for the human NDC1/NET3 homologue. *Anat. Rec. A Discov. Mol. Cell. Evol. Biol.* 288: 681-694.
- Stavru, F., et al. 2006. NDC1: a crucial membrane-integral nucleoporin of metazoan nuclear pore complexes. *J. Cell Biol.* 173: 509-519.
- Mansfeld, J., et al. 2006. The conserved transmembrane nucleoporin NDC1 is required for nuclear pore complex assembly in vertebrate cells. *Mol. Cell* 22: 93-103.
- Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610115. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: TMEM48 (human) mapping to 1p32.3; Tmem48 (mouse) mapping to 4 C7.

## SOURCE

NDC1 (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of NDC1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-161929 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

NDC1 (S-14) is recommended for detection of NDC1 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).

NDC1 (S-14) is also recommended for detection of NDC1 in additional species, including equine.

Suitable for use as control antibody for NDC1 siRNA (h): sc-78571, NDC1 siRNA (m): sc-149861, NDC1 shRNA Plasmid (h): sc-78571-SH, NDC1 shRNA Plasmid (m): sc-149861-SH, NDC1 shRNA (h) Lentiviral Particles: sc-78571-V and NDC1 shRNA (m) Lentiviral Particles: sc-149861-V.

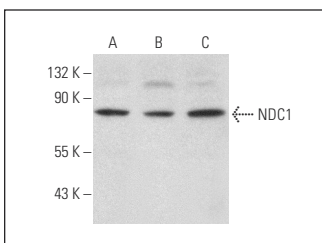
Molecular Weight of NDC1: 76 kDa.

Positive Controls: Ramos cell lysate: sc-2216, IMR-32 cell lysate: sc-2409 or IMR-32 nuclear extract: sc-2148.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



NDC1 (S-14): sc-161929. Western blot analysis of NDC1 expression in Ramos (A) and IMR-32 (B) whole cell lysates and IMR-32 nuclear extract (C).

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.