SANTA CRUZ BIOTECHNOLOGY, INC.

p-NDEL1 (Ser 242): sc-130207

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NUDE-like protein (NDEL1) is expressed in the testis, brain, heart, hypothalamus, liver, lung, spleen and stomach, specifically in the interphase centrosome and mitotic spindle. It positively regulates minus-end directed Dynein. Evidence suggests that NDEL1 interacts with LIS1 to sustain the function of Dynein, thereby impacting microtubule organization, nuclear translocation and neuronal positioning. NDEL1 is phosphorylated during mitosis and seems to tether Dynactin and Dynein to the mother centriole for microtubule anchoring. Loss of function of NDEL1 in the developing neocortex impairs neuronal positioning and uncouples the centrosome and nucleus. NDEL1 may also impair mitochondrial transport or function, initiating a cascade of events culminating in psychiatric illness such as lissencephaly and schizophrenia. Human NDEL1 is subject to phosphorylation at a variety of amino acid residues, including Ser 242.

REFERENCES

1. Niethammer, M., et al. 2001. NUDEL is a novel Cdk5 substrate that associates with LIS1 and cytoplasmic Dynein. Neuron 28: 697-711.
2. Yan, X., et al. 2003. Human NUDEL and NUDE as regulators of cytoplasmic Dynein in poleward protein transport along the mitotic spindle. Mol. Cell. Biol. 23: 1239-1250.
3. Shu, T., et al. 2004. NDEL1 operates in a common pathway with LIS1 and cytoplasmic Dynein to regulate cortical neuronal positioning. Neuron 44: 263-277.
4. Brandon, N.J., et al. 2005. Subcellular targeting of DISC1 is dependent on a domain independent from the NUDEL binding site. Mol. Cell. Neurosci. 28: 613-624.
5. Li, J., et al. 2005. NUDEL targets Dynein to microtubule ends through LIS1. Nat. Cell Biol. 7: 686-690.
6. Toyo-Oka, K., et al. 2005. Recruitment of Katanin p60 by phosphorylated NDEL1, an LIS1 interacting protein, is essential for mitotic cell division and neuronal migration. Hum. Mol. Genet. 14: 3113-3128.
7. Hayashi, M.A., et al. 2005. Inhibition of NUDEL (nuclear distribution element-like)-oligopeptidase activity by disrupted-in-schizophrenia 1. Proc. Natl. Acad. Sci. USA 102: 3828-3833.
8. Sasaki, S., et al. 2005. Complete loss of NDEL1 results in neuronal migration defects lethality. Mol. Cell. Biol. 25: 7812-7827.

CHROMOSOMAL LOCATION

Genetic locus: NDEL1 (human) mapping to 17p13.1.

SOURCE

p-NDEL1 (Ser 242) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 242 of NDEL1 of human origin.

STORAGE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-NDEL1 (Ser 242) is recommended for detection of Ser 242 phosphorylated NDEL1 of 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), 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 NDEL1 siRNA (h): sc-61162, NDEL1 shRNA Plasmid (h): sc-61162-SH and NDEL1 shRNA (h) Lentiviral Particles: sc-61162-V.

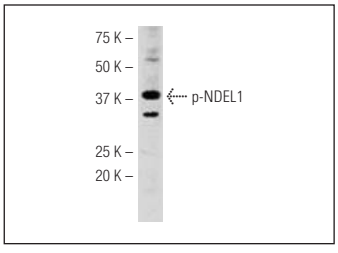
Molecular Weight of p-NDEL1: 40 kDa.

Positive Controls: Hep G2 whole cell lysate.

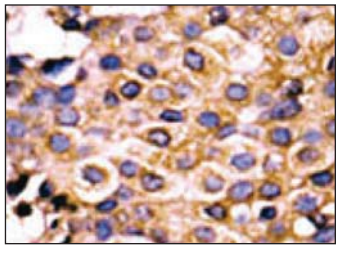
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-NDEL1 (Ser 242): sc-130207. Western blot analysis of p-NDEL1 expression in Hep G2 whole cell lysate.



p-NDEL1 (Ser 242): sc-130207. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cancer tissue showing cytoplasmic staining.

RESEARCH USE

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