SANTA CRUZ BIOTECHNOLOGY, INC.

NUDE1 siRNA (h): sc-106779

BACKGROUND

NUDE1 (Nuclear Distribution Protein nudE homolog 1) is a 346 amino acid cytoplasmic protein belonging to the nudE protein family (whose members include NUDE1 and NDEL1). Phosphorylated during mitosis, NUDE1 is essential for the formation and function of the mitotic spindle in M phase and functions to regulate the Dynein-mediated transport of kinetochore proteins, as well as centrosome duplication during interphase. NUDE1 is thought to interact with NDEL1, LIS1 and Dynein IC1/2, cytosolic in a signaling pathway that regulates the formation of neurons and is fundamental to the development of the cerebral cortex. Mutations in the NUDE1 gene result in a reduced cerebral cortex size caused by defects in mitotic progression and chromosomal localization of cortical progenitors. NUDE1 is expressed as two isoforms produced by alternative splicing of the primary gene transcript.

REFERENCES

1. Kitagawa, M., et al. 2000. Direct association of LIS1, the lissencephaly gene product, with a mammalian homologue of a fungal nuclear distribution protein, rNUDE. FEBS Lett. 479: 57-62.
2. Feng, Y., et al. 2000. LIS1 regulates CNS lamination by interacting with mNudE, a central component of the centrosome. Neuron 28: 665-679.
3. Meyer, G., et al. 2002. Selective expression of doublecortin and LIS1 in developing human cortex suggests unique modes of neuronal movement. Cereb. Cortex. 12: 1225-1236.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609449. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. 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.
6. Feng, Y. and Walsh, C.A. 2004. Mitotic spindle regulation by Nde1 controls cerebral cortical size. Neuron 44: 279-293.
7. 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.

CHROMOSOMAL LOCATION

Genetic locus: NDE1 (human) mapping to 16p13.11.

PRODUCT

NUDE1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NUDE1 shRNA Plasmid (h): sc-106779-SH and NUDE1 shRNA (h) Lentiviral Particles: sc-106779-V as alternate gene silencing products.

For independent verification of NUDE1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106779A, sc-106779B and sc-106779C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NUDE1 siRNA (h) is recommended for the inhibition of NUDE1 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

NUDE1 (36-T): sc-100328 is recommended as a control antibody for monitoring of NUDE1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NUDE1 gene expression knockdown using RT-PCR Primer: NUDE1 (h)-PR: sc-106779-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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