SANTA CRUZ BIOTECHNOLOGY, INC.

NUDC siRNA (m): sc-150096

BACKGROUND

NUDC (nuclear distribution gene C homolog, A. nidulans), also known as HNUDC, MNUDC or NPD011, is a ubiquitously expressed protein that is conserved from fungus to human. Highly expressed in proliferating cells, NUDC localizes to the cytoplasm and nucleus, contains a CS domain and participates in neurogenesis, mitosis, nuclear migration and cytokinesis. At the onset of mitosis, NUDC is phosphorylated by Plk. This modification of NUDC is required for proper mitotic spindle formation, chromosome separation during mitosis, cytokinesis and cell proliferation. In neurons and fibroblasts, NUDC forms a complex with LIS1 that localizes to the microtubule network and microtubule-organizing center and facilitates nuclear movement and transport in migrating neurons. In addition, the NUDC/LIS1 complex can associate with the minus-end directed Dynein/Dynactin motor complex and, together, these complexes cooperate in the regulation of cytokinesis.

REFERENCES

1. Matsumoto, N., et al. 1999. Molecular cloning and characterization of the human NUDC gene. Hum. Genet. 104: 498-504.
2. Miller, B.A., et al. 1999. A homolog of the fungal nuclear migration gene nudC is involved in normal and malignant human hematopoiesis. Exp. Hematol. 27: 742-750.
3. Zhang, M.Y., et al. 2002. Involvement of the fungal nuclear migration gene nudC human homolog in cell proliferation and mitotic spindle formation. Exp. Cell Res. 273: 73-84.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610325. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Aumais, J.P., et al. 2003. Role for NudC, a dynein-associated nuclear movement protein, in mitosis and cytokinesis. J. Cell Sci. 116: 1991-2003.
6. Pan, R.M., et al. 2005. A microtubule associated protein (hNUDC) binds to the extracellular domain of thrombopoietin receptor (Mpl). J. Cell. Biochem. 96: 741-750.
7. Nishino, M., et al. 2006. NudC is required for Plk1 targeting to the kinetochore and chromosome congression. Curr. Biol. 16: 1414-1421.

CHROMOSOMAL LOCATION

Genetic locus: Nudc (mouse) mapping to 4 D2.3.

PRODUCT

NUDC siRNA (m) is a pool of 2 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 NUDC shRNA Plasmid (m): sc-150096-SH and NUDC shRNA (m) Lentiviral Particles: sc-150096-V as alternate gene silencing products.

For independent verification of NUDC (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-150096A and sc-150096B.

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

NUDC siRNA (m) is recommended for the inhibition of NUDC expression in mouse 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

NUDC (C-3): sc-365782 is recommended as a control antibody for monitoring of NUDC 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 NUDC gene expression knockdown using RT-PCR Primer: NUDC (m)-PR: sc-150096-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.