SANTA CRUZ BIOTECHNOLOGY, INC.

Nup153 siRNA (h): sc-41279

BACKGROUND

Nuclear pore complexes (NPCs) are the channels for the bi-directional movement of macromolecules between the nucleus and cytoplasm, and contain more than 100 different subunits. Many of them belong to a family called nucleoporins, which are characterized by the presence of O-linked N-acetylglucosamine moieties and a distinctive pentapeptide repeat (XFXFG). Nup153 is a peripheral NPC component that is implicated in protein and RNP transport and in the interaction of NPCs with the nuclear lamina. Nup153 contains a unique N-terminal region, a central domain consisting of four to five zinc fingers and a C-terminal region containing about 30 irregularly spaced FXFG repeats. Nup153 is cleaved by caspases during apoptosis. Nup153 interacts wtih TAP, which is essential for mRNA export, and associates with chromatin towards the end of anaphase, in parallel with the inner nuclear membrane protein LAP2. Nup153 is involved in NPC assembly, in anchoring NPCs within the nuclear envelope and in mediating specific nuclear import events.

REFERENCES

1. McMorrow, I., et al. 1994. Sequence analysis of cDNA encoding a human nuclear pore complex protein, hNup152. Biochim. Biophys. Acta 1217: 219-223.
2. Bastos, R., et al. 1996. Targeting and function in mRNA export of nuclear pore complex protein Nup153. J. Cell Biol. 134: 1141-1156.
3. Bodoor, K., et al. 1999. Sequential recruitment of NPC proteins to the nuclear periphery at the end of mitosis. J. Cell Sci. 112: 2253-2264.
4. Tan, W., et alK. 2000. The mRNA export in *Caenorhabditis elegans* is mediated by CeNXF-1, an ortholog of human TAP/NXF and *Saccharomyces cerevisiae* Mex67p. RNA 6: 1762-1772.
5. Walther, T.C., et al. 2001. The nucleoporin Nup153 is required for nuclear pore basket formation, nuclear pore complex anchoring and import of a subset of nuclear proteins. EMBO J. 20: 5703-5714.
6. Ferrando-May, E., et al. 2001. Caspases mediate nucleo-protein cleavage, but not early redistribution of nuclear transport factors and modulation of nuclear permeability in apoptosis. Cell Death Differ. 8: 495-505.

CHROMOSOMAL LOCATION

Genetic locus: NUP153 (human) mapping to 6p22.3.

PRODUCT

Nup153 siRNA (h) is a target-specific 19-25 nt siRNA 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 Nup153 shRNA Plasmid (h): sc-41279-SH and Nup153 shRNA (h) Lentiviral Particles: sc-41279-V as alternate gene silencing products.

PROTOCOLS

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

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

Nup153 siRNA (h) is recommended for the inhibition of Nup153 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

Nup153 (R3G1): sc-101544 is recommended as a control antibody for monitoring of Nup153 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Nup153 gene expression knockdown using RT-PCR Primer: Nup153 (h)-PR: sc-41279-PR (20 µl, 593 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Smith, E.R., et al. 2010. Nuclear entry of activated MAPK is restricted in primary ovarian and mammary epithelial cells. PLoS ONE 5: e9295.
2. Petsalaki, E. and Zachos, G. 2016. Clks 1, 2 and 4 prevent chromatin breakage by regulating the Aurora B-dependent abscission checkpoint. Nat. Commun. 7: 11451.

RESEARCH USE

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