

# Nup153 siRNA (m): sc-41280

## 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 (XFYFG). 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 XFYG repeats. Nup153 is cleaved by caspases during apoptosis. Nup153 interacts with 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

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2. Bastos, R., Lin, A., Enarson, M. and Burke, B. 1996. Targeting and function in mRNA export of nuclear pore complex protein Nup153. *J. Cell Biol.* 134: 1141-1156.
3. Bodoor, K., Shaikh, S., Salina, D., Raharjo, W.H., Bastos, R., Lohka, M. and Burke, B. 1999. Sequential recruitment of NPC proteins to the nuclear periphery at the end of mitosis. *J. Cell Sci.* 112: 2253-2264.
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5. Walther, T.C., Fornerod, M., Pickersgill, H., Goldberg, M., Allen, T.D. and Mattaj, J.W. 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., Cordes, V., Biller-Ckovic, I., Mirkovic, J., Gorlich, D. and Nicotera, P. 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 (mouse) mapping to 13 A5.

## 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) for detailed protocols and support products.

## PRODUCT

Nup153 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nup153 shRNA Plasmid (m): sc-41280-SH and Nup153 shRNA (m) Lentiviral Particles: sc-41280-V as alternate gene silencing products.

For independent verification of Nup153 (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-41280A, sc-41280B and sc-41280C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Nup153 siRNA (m) is recommended for the inhibition of Nup153 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  $\mu$ M in 66  $\mu$ l. 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 (m)-PR: sc-41280-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.