SANTA CRUZ BIOTECHNOLOGY, INC.

Nup54 siRNA (h): sc-89240

BACKGROUND

The nuclear pore complex (NPC) mediates bidirectional macromolecular traffic between the nucleus and cytoplasm in eukaryotic cells and is comprised of more than 100 different subunits. Many of the subunits belong to a family called nucleoporins (Nups), which are characterized by the presence of O-linked-N-acetylglucosamine moieties and a distinctive pentapeptide repeat (XFXFG). Nup54 (nucleoporin 54 kDa) is a 507 amino acid protein that localizes to the nucleus and exists as a component of the NPC, effectively playing a role in protein trafficking across the nuclear membrane. Nup54 exists as multiple alternatively spliced isoforms and is subject to post-translational O-glycosylation. Multiple isoforms of Nup54 exist due to alternative splicing events.

REFERENCES

1. Schlenstedt, G. 1996. Protein import into the nucleus. FEBS Lett. 389: 75-79.
2. Hu, T., et al. 1996. Molecular and functional characterization of the p62 complex, an assembly of nuclear pore complex glycoproteins. J. Cell Biol. 134: 589-601.
3. Moroianu, J. 1997. Molecular mechanisms of nuclear protein transport. Crit. Rev. Eukaryot. Gene Expr. 7: 61-72.
4. Bodoor, K., et al. 1999. Function and assembly of nuclear pore complex proteins. Biochem. Cell Biol. 77: 321-329.
5. Moroianu, J. 1999. Nuclear import and export pathways. J. Cell. Biochem. 32-33: 76-83.
6. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607607. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: NUP54 (human) mapping to 4q21.1.

PRODUCT

Nup54 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 Nup54 shRNA Plasmid (h): sc-89240-SH and Nup54 shRNA (h) Lentiviral Particles: sc-89240-V as alternate gene silencing products.

For independent verification of Nup54 (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-89240A, sc-89240B and sc-89240C.

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

Nup54 siRNA (h) is recommended for the inhibition of Nup54 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

Nup54 (613J2U): sc-517605 is recommended as a control antibody for monitoring of Nup54 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 Nup54 gene expression knockdown using RT-PCR Primer: Nup54 (h)-PR: sc-89240-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hazawa, M., et al. 2018. ROCK-dependent phosphorylation of NUP62 regulates p63 nuclear transport and squamous cell carcinoma proliferation. EMBO Rep. 19: 73-88.

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.