SANTA CRUZ BIOTECHNOLOGY, INC.

NupL1 siRNA (h): sc-75984

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The Power to Question

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). NupL1 (nucleoporin-like 1), also designated nucleoporin p58/p45, is a 599 amino acid protein that contains FG repeats and exists as a component of the p62 complex, which includes Nup62, Nup54, and NupL1. The p62 complex localizes near the central gated channel of the nuclear pore complex. Specifically, NupL1 interacts with SRP1-α and Importin p97 when they are together, but not with SRP1-alpha protein alone.

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. Hu, T. and Gerace, L. 1998. cDNA cloning and analysis of the expression of nucleoporin p45. Gene 221: 245-253.
5. Bodoor, K., et al. 1999. Function and assembly of nuclear pore complex proteins. Biochem. Cell Biol. 77: 321-329.
6. Moroianu, J. 1999. Nuclear import and export pathways. J. Cell. Biochem. 32-33: 76-83.
7. Schwarz-Herion, K., et al. 2007. Domain topology of the p62 complex within the 3-D architecture of the nuclear pore complex. J. Mol. Biol. 370: 796-806.
8. Melcák, I., et al. 2007. Structure of Nup58/45 suggests flexible nuclear pore diameter by intermolecular sliding. Science 315: 1729-1732.

CHROMOSOMAL LOCATION

Genetic locus: NUP58 (human) mapping to 13q12.13.

PRODUCT

NupL1 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 NupL1 shRNA Plasmid (h): sc-75984-SH and NupL1 shRNA (h) Lentiviral Particles: sc-75984-V as alternate gene silencing products.

For independent verification of NupL1 (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-75984A, sc-75984B and sc-75984C.

RESEARCH USE

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

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

NupL1 siRNA (h) is recommended for the inhibition of NupL1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NupL1 gene expression knockdown using RT-PCR Primer: NupL1 (h)-PR: sc-75984-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. Hartono, et al. 2019. Nucleoporin Nup58 localizes to centrosomes and mid-bodies during mitosis. Cell Div. 14: 7.

PROTOCOLS

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