



Nup43 siRNA (h): sc-95534

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). Nup43 (nucleoporin 43 kDa) is a 380 amino acid protein that contains six WD domains and exists as a component of the Nup107-160 subcomplex of the nuclear pore complex (NPC). The Nup107-160 subcomplex is required for the assembly of a functional NPC as well as for normal kinetochore microtubule attachment, mitotic progression and chromosome segregation. Members of the Nup107-160 subcomplex include Nup160, Nup133, Nup107, Nup98, Nup85, Nup37, Seh1 and SEC13.

REFERENCES

- Schlenstedt, G. 1996. Protein import into the nucleus. *FEBS Lett.* 389: 75-79.
- Hu, T., Guan, T. and Gerace, L. 1996. Molecular and functional characterization of the p62 complex, an assembly of nuclear pore complex glycoproteins. *J. Cell Biol.* 134: 589-601.
- Moroianu, J. 1997. Molecular mechanisms of nuclear protein transport. *Crit. Rev. Eukaryot. Gene Expr.* 7: 61-72.
- Bodoor, K., Shaikh, S., Enarson, P., Chowdhury, S., Salina, D., Raharjo, W.H. and Burke, B. 1999. Function and assembly of nuclear pore complex proteins. *Biochem. Cell Biol.* 77: 321-329.
- Moroianu, J. 1999. Nuclear import and export pathways. *J. Cell. Biochem.* 32-33: 76-83.
- Loiodice, I., Alves, A., Rabut, G., Van Overbeek, M., Ellenberg, J., Sibarita, J.B. and Doye, V. 2004. The entire Nup107-160 complex, including three new members, is targeted as one entity to kinetochores in mitosis. *Mol. Biol. Cell* 15: 3333-3344.
- Chakraborty, P., Wang, Y., Wei, J.H., van Deursen, J., Yu, H., Malureanu, L., Dasso, M., Forbes, D.J., Levy, D.E., Seemann, J. and Fontoura, B.M. 2008. Nucleoporin levels regulate cell cycle progression and phase-specific gene expression. *Dev. Cell* 15: 657-667.
- Platani, M., Santarella-Mellwig, R., Posch, M., Walczak, R., Swedlow, J.R. and Mattaj, J.W. 2009. The Nup107-160 nucleoporin complex promotes mitotic events via control of the localization state of the chromosome passenger complex. *Mol. Biol. Cell* 20: 5260-5275.

CHROMOSOMAL LOCATION

Genetic locus: NUP43 (human) mapping to 6q25.1.

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.

PRODUCT

Nup43 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nup43 shRNA Plasmid (h): sc-95534-SH and Nup43 shRNA (h) Lentiviral Particles: sc-95534-V as alternate gene silencing products.

For independent verification of Nup43 (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-95534A, sc-95534B and sc-95534C.

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

APPLICATIONS

Nup43 siRNA (h) is recommended for the inhibition of Nup43 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Nup43 gene expression knockdown using RT-PCR Primer: Nup43 (h)-PR: sc-95534-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.