

NupL2 siRNA (h): sc-89655

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). NupL2 (Nucleoporin-like protein 2) is a 423 amino acid protein required for the export of mRNAs containing poly(A) tails from the nucleus into the cytoplasm. NupL2 contains FG repeats that may form an affinity gradient, guiding the transport proteins unidirectionally with their cargo through the NPC, and serve as interaction sites for karyopherins. Ubiquitously expressed, NupL2 also interacts with TAP, a nuclear export protein, Rev and Vpr, HIV-1 virus proteins, and forms a heterotrimer with Nup155 and Gle1 *in vitro*. Three isoforms exist due to alternative splicing events.

REFERENCES

- Schlenstedt, G. 1996. Protein import into the nucleus. FEBS Lett. 389: 75-79.
- 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.
- Strahm, Y., Fahnenkrog, B., Zenklusen, D., Rychner, E., Kantor, J., Rosbach, M. and Stutz, F. 1999. The RNA export factor Gle1p is located on the cytoplasmic fibrils of the NPC and physically interacts with the FG-nucleoporin Rip1p, the DEAD-box protein Rat8p/Dbp5p and a new protein Ymr 255p. EMBO J. 18: 5761-5777.
- Katahira, J., Strässer, K., Podtelejnikov, A., Mann, M., Jung, J.U. and Hurt, E. 1999. The Mex67p-mediated nuclear mRNA export pathway is conserved from yeast to human. EMBO J. 18: 2593-2609.
- Farjot, G., Sergeant, A. and Mikaelian, I. 1999. A new nucleoporin-like protein interacts with both HIV-1 Rev nuclear export signal and CRM-1. J. Biol. Chem. 274: 17309-17317.
- Moroianu, J. 1999. Nuclear import and export pathways. J. Cell. Biochem. 32-33: 76-83.
- Le Rouzic, E., Mousnier, A., Rustum, C., Stutz, F., Hallberg, E., Dargemont, C. and Benichou, S. 2002. Docking of HIV-1 Vpr to the nuclear envelope is mediated by the interaction with the nucleoporin hCG1. J. Biol. Chem. 277: 45091-45098.
- Kendirgi, F., Rexer, D.J., Alcázar-Román, A.R., Onishko, H.M. and Wente, S.R. 2005. Interaction between the shuttling mRNA export factor Gle1 and the nucleoporin hCG1: a conserved mechanism in the export of HSP 70 mRNA. Mol. Biol. Cell 16: 4304-4315.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: NUPL2 (human) mapping to 7p15.3.

PRODUCT

NupL2 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 NupL2 shRNA Plasmid (h): sc-89655-SH and NupL2 shRNA (h) Lentiviral Particles: sc-89655-V as alternate gene silencing products.

For independent verification of NupL2 (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-89655A, sc-89655B and sc-89655C.

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

NupL2 siRNA (h) is recommended for the inhibition of NupL2 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 NupL2 gene expression knockdown using RT-PCR Primer: NupL2 (h)-PR: sc-89655-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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