SANTA CRUZ BIOTECHNOLOGY, INC.

Nup214 siRNA (m): sc-150122

BACKGROUND

The nuclear pore complex (NPC) mediates bidirectional macromolecular traffic between the nucleus and cytoplasm in eukaryotic cells and comprises 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). The short filaments extending from the cytoplasmic face of nuclear pore complexes contain docking sites for nuclear import substrates. One component of these filaments, the large O-linked glycoprotein CAN/Nup214, participates in myeloid leukemia in humans. The oncogenic nucleoporin CAN/Nup214 is critical to cell cycle progression and required for both nuclear protein import and mRNA export. The depletion of CAN/Nup214 results in defective nuclear protein import, inhibition of messenger RNA export, and cell cycle arrest. CAN/Nup214 localizes to the cytoplasmic face of the NPC.

REFERENCES

1. McMorrow, I., et al. 1994. Sequence analysis of a cDNA encoding a human nuclear pore complex protein, hnup153. Biochim. Biophys. Acta 1217: 219-223.
2. van Deursen, J., et al. 1996. G_2 arrest and impaired nucleocytoplasmic transport in mouse embryos lacking the proto-oncogene CAN/Nup214. EMBO J. 15: 5574-5583.
3. Fornerod, M., et al. 1997. The human homologue of yeast CRM1 is in a dynamic subcomplex with CAN/Nup214 and a novel nuclear pore component Nup88. EMBO J. 16: 807-816.
4. Boer, J.M., et al. 1997. The nucleoporin CAN/Nup214 binds to both the cytoplasmic and the nucleoplasmic sides of the nuclear pore complex in overexpressing cells. Exp. Cell Res. 232: 182-185.
5. Bastos, R., et al. 1997. Nup84, a novel nucleoporin that is associated with CAN/Nup214 on the cytoplasmic face of the nuclear pore complex. J. Cell Biol. 137: 989-1000.
6. Gould, V.E., et al. 2002. Nup88 (karyoporin) in human malignant neoplasms and dysplasias: correlations of immunostaining of tissue sections, cytologic smears, and immunoblot analysis. Hum. Pathol. 33: 536-544.

CHROMOSOMAL LOCATION

Genetic locus: Nup214 (mouse) mapping to 2 B.

PRODUCT

Nup214 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nup214 shRNA Plasmid (m): sc-150122-SH and Nup214 shRNA (m) Lentiviral Particles: sc-150122-V as alternate gene silencing products.

For independent verification of Nup214 (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-150122A, sc-150122B and sc-150122C.

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

Nup214 siRNA (m) is recommended for the inhibition of Nup214 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 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 Nup214 gene expression knockdown using RT-PCR Primer: Nup214 (m)-PR: sc-150122-PR (20 µl). 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.

PROTOCOLS

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