SANTA CRUZ BIOTECHNOLOGY, INC.

NOP2 siRNA (m): sc-75963

BACKGROUND

The nucleolus consists of a number of specific proteins that play a critical role in the assembly of ribosomes, as well as in the maintenance and structural integrity of the nucleolus. NOP2 (NOL1/NSUN1/Sun domain family, member 1), also known as NOL1, p120, NOP120, or Nucleolar protein 1, is an 812 amino acid nucleolar protein belonging to the methyltransferase superfamily. It is expressed in the G_1 phase of the cell cycle and peaks during the early S phase. Considered a ribosomal RNA methyltransferase, NOP2 may be involved in regulating the cell cycle and in increasing nucleolar activity that is associated with cell proliferation. NOP2 is a possible marker for proliferation in neoplastic cells and in several cancer cells. Two isoforms exist due to alternative splicing events.

REFERENCES

1. Henríquez, R., et al. 1990. Isolation and sequencing of NOP1. A yeast gene encoding a nucleolar protein homologous to a human autoimmune antigen. J. Biol. Chem. 265: 2209-2215.
2. Baens, M., et al. 1994. Assignment of the gene for the human proliferating cell nucleolar protein P120 (NOL1) to chromosome 12p13 by fluorescence *in situ* hybridization and polymerase chain reaction with somatic cell hybrids. Genomics 21: 296-297.
3. Bocker, T., et al. 1995. *In vitro* and *ex vivo* expression of nucleolar proteins B23 and p120 in benign and malignant epithelial lesions of the prostate. Mod. Pathol. 8: 226-231.
4. Uchiyama, B., et al. 1997. Expression of nucleolar protein p120 in human lung cancer: difference in histological types as a marker for proliferation. Clin. Cancer Res. 3: 1873-1877.
5. Sakita-Suto, S., et al. 2007. Aurora-B regulates RNA methyltransferase NSUN2. Mol. Biol. Cell 18: 1107-1117.
6. Mitreci , D., et al. 2008. Nucleolar protein 1 (Nol1) expression in the mouse brain. Coll. Antropol. 32: 123-126.
7. Pavlopoulou, A. and Kossida, S. 2009. Phylogenetic analysis of the eukaryotic RNA (cytosine-5)-methyltransferases. Genomics 93: 350-357.

CHROMOSOMAL LOCATION

Genetic locus: Nop2 (mouse) mapping to 6 F2.

PRODUCT

NOP2 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 NOP2 shRNA Plasmid (m): sc-75963-SH and NOP2 shRNA (m) Lentiviral Particles: sc-75963-V as alternate gene silencing products.

For independent verification of Nol1 (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-75963A, sc-75963B and sc-75963C.

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

NOP2 siRNA (m) is recommended for the inhibition of NOP2 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.

GENE EXPRESSION MONITORING

NOP2 (E-7): sc-398884 is recommended as a control antibody for monitoring of NOP2 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NOP2 gene expression knockdown using RT-PCR Primer: NOP2 (m)-PR: sc-75963-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.