SANTA CRUZ BIOTECHNOLOGY, INC.

NOB1P siRNA (h): sc-93114

BACKGROUND

NOB1P, also known as ART-4 and Phosphorylation regulatory protein HP-10, is a 412 amino acid nuclear protein that is involved in proteosome biogenesis and is required for the final step in 18S rRNA maturation. NOB1P contains a PIN domain, which functions as a nuclease in nonsense-mediated mRNA decay and is required for pre-rRNA cleavage. NOB1P interacts with Rent2, which is involved in nonsense-mediated decay of mRNAs containing premature stop codons. Expressed in placenta, spleen, endothelial cells, liver and lung, NOB1P is essential for the synthesis of 40S ribosome subunits. Supression of the gene encoding NOB1P inhibits the processing of the 20S pre-rRNA to the mature 18S rRNA, therefore leading to accumulation of high levels of 20S pre-rRNA with degradation intermediates.

REFERENCES

1. Daniele, A., et al. 1991. Cloning and expression of a new human polypeptide which regulates protein phosphorylation in *Escherichia coli.* Mol. Cell. Biochem. 107: 87-94.
2. Tone, Y., et al. 2000. Nob1p, a new essential protein, associates with the 26S proteasome of growing saccharomyces cerevisiae cells. Gene 243: 37-45.
3. Tone, Y. and Toh-E, A. 2002. Nob1p is required for biogenesis of the 26S proteasome and degraded upon its maturation in *Saccharomyces cerevisiae.* Genes Dev. 16: 3142-3157.
4. Schäfer, T., et al. 2003. The path from nucleolar 90S to cytoplasmic 40S pre-ribosomes. EMBO J. 22: 1370-1380.
5. Fatica, A., et al. 2003. Nob1p is required for cleavage of the 3' end of 18S rRNA. Mol. Cell. Biol. 23: 1798-1807.
6. Lehner, B. and Sanderson, C.M. 2004. A protein interaction framework for human mRNA degradation. Genome Res. 14: 1315-1323.
7. Fatica, A., et al. 2004. PIN domain of Nob1p is required for D-site cleavage in 20S pre-rRNA. RNA 10: 1698-1701.
8. Zhang, Y., et al. 2005. Cloning, expression and characterization of the human NOB1 gene. Mol. Biol. Rep. 32: 185-189.

CHROMOSOMAL LOCATION

Genetic locus: NOB1 (human) mapping to 16q22.1.

PRODUCT

NOB1P 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 NOB1P shRNA Plasmid (h): sc-93114-SH and NOB1P shRNA (h) Lentiviral Particles: sc-93114-V as alternate gene silencing products.

For independent verification of NOB1P (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-93114A, sc-93114B and sc-93114C.

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

NOB1P siRNA (h) is recommended for the inhibition of NOB1P 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 NOB1P gene expression knockdown using RT-PCR Primer: NOB1P (h)-PR: sc-93114-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.