SANTA CRUZ BIOTECHNOLOGY, INC.

NPM3 siRNA (m): sc-37727

BACKGROUND

Nucleoplasmin (NP) and nucleophosmin (also called B23) are nuclear chaperones that mediate the assembly of ribosomes. Their activities are mediated through the binding of basic proteins via their acidic domains. Nucleophosmin is more abundant in tumor cells than in normal resting cells. Specifically, stimulation of the growth of normal cells is accompanied by an increase in nucleophosmin protein level. The structure of the N-terminal domain of nucleoplasmin (NP-core) is an eight-stranded β barrel that fits within a stable pentamer. Both NP and NP-core are competent to assemble large complexes that contain the four core histones. Nucleoplasmin 3 (NPM3) shares many physical characteristics with the nucleo-phosmin/nucleoplasmin family, including an acidic domain, multiple potential phosphorylation sites and a putative nuclear localization signal. NPM3 protein is an abundant and widely expressed protein with primarily nuclear localization. The NPM3 gene maps to human chromosome 10q24.32.

REFERENCES

1. Chan, W.Y., et al. 1989. Characterization of the cDNA encoding human nuclophos-min and studies of its role in normal and abnormal growth. Biochemistry 28: 1033-1039.
2. MacArthur, C.A. and Shackleford, G.M. 1997. NPM3: a novel, widely expressed gene encoding a protein related to the molecular chaperones nucleoplasmin and nucleophosmin. Genomics 42: 137-140.
3. Shackleford, G.M., et al. 2001. Cloning, expression and nuclear localization of human NPM3, a member of the nucleophosmin/nucleoplasmin family of nuclear chaperones. BMC Genomics 2: 8.
4. Okuwaki, M., et al. 2001. Function of nucleophosmin/B23, a nucleolar acidic protein, as a histone chaperone. FEBS Lett. 506: 272-276.
5. Dutta, S., et al. 2001. The crystal structure of nucleoplasmin-core: implications for histone binding and nucleosome assembly. Mol. Cell 8: 8418-8453.

CHROMOSOMAL LOCATION

Genetic locus: Npm3 (mouse) mapping to 19 C3.

PRODUCT

NPM3 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 NPM3 shRNA Plasmid (m): sc-37727-SH and NPM3 shRNA (m) Lentiviral Particles: sc-37727-V as alternate gene silencing products.

For independent verification of NPM3 (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-37727A, sc-37727B and sc-37727C.

PROTOCOLS

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

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

NPM3 siRNA (m) is recommended for the inhibition of NPM3 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 NPM3 gene expression knockdown using RT-PCR Primer: NPM3 (m)-PR: sc-37727-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.