SANTA CRUZ BIOTECHNOLOGY, INC.

NPM2 siRNA (m): sc-150052

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. NPM2 (nucleophosmin/nucleoplasmin 2) is a 214 amino acid nuclear protein implicated in sperm DNA decondensation during fertilization. A member of the nucleoplasmin family, NPM2 plays a role in nuclear and nucleolar organization and is encoded by a gene located on human chromosome 8.

REFERENCES

1. Chan, W.Y., et al. 1989. Characterization of the cDNA encoding human nucleophosmin and studies of its role in normal and abnormal growth. Biochemistry 28: 1033-1039.
2. Dingwall, C., et al. 1990. Nucleoplasmin: the archetypal molecular chaperone. Semin. Cell Biol. 1: 11-17.
3. Laskey, R.A., et al. 1993. The role of nucleoplasmin in chromatin assembly and disassembly. Philos. Trans. R. Soc. Lond., B, Biol. Sci. 339: 263-269.
4. Okuwaki, M., et al. 2001. Function of nucleophosmin/B23, a nucleolar acidic protein, as a histone chaperone. FEBS Lett. 506: 272-276.
5. Okuwaki, M., et al. 2001. Identification of nucleophosmin/B23, an acidic nucleolar protein, as a stimulatory factor for *in vitro* replication of adenovirus DNA complexed with viral basic core proteins. J. Mol. Biol. 311: 41-55.
6. Dutta, S., et al. 2001. The crystal structure of nucleoplasmin-core: implications for histone binding and nucleosome assembly. Mol. Cell 8: 841-853.

CHROMOSOMAL LOCATION

Genetic locus: Npm2 (mouse) mapping to 14 D2.

PRODUCT

NPM2 siRNA (m) is a target-specific 19-25 nt siRNA 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 NPM2 shRNA Plasmid (m): sc-150052-SH and NPM2 shRNA (m) Lentiviral Particles: sc-150052-V as alternate gene silencing products.

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.

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

NPM2 siRNA (m) is recommended for the inhibition of NPM2 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 NPM2 gene expression knockdown using RT-PCR Primer: NPM2 (m)-PR: sc-150052-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.