SANTA CRUZ BIOTECHNOLOGY, INC.

CENP-N siRNA (m): sc-72861

BACKGROUND

During mitosis, the transient assembly of the kinetochore occurs on a platform known as the centromere, a specialized chromatin structure that is comprised of various centromere proteins (CENPs). There are two multi-protein centromere complexes, known as CENPA-NAC (nucleosome-associated) and CENPA-CAD (nucleosome distal), which interact with one another to facilitate both the assembly and the activity of the centromere. CENP-N (centromere protein N), also known as BM039 or CENPN, is a 339 amino acid nuclear protein that localizes exclusively in the kinetochore domain of centromeres. One of several components of the CENPA-NAC complex, CENP-N plays a crucial role in the assembly of the kinetochore and the subsequent chromosome segregation and progression through mitosis. CENP-N interprets the information encoded within CENP-A nucleosomes, therefore, CENP-N is considered a reader of the centromere-specifying epigenetic mark that is generated by incorporation of the histone H3 variant CENP-A into centromeric nucleosomes. CENP-N exists as two isoforms due to alternative splicing events.

REFERENCES

1. Van Hooser, A.A., et al. 1999. The mammalian centromere: structural domains and the attenuation of chromatin modeling. FASEB J. 13: S216-S220.
2. Smith, M.M. 2002. Centromeres and variant histones: what, where, when and why? Curr. Opin. Cell Biol. 14: 279-285.
3. Izuta, H., et al. 2006. Comprehensive analysis of the ICEN (Interphase Centromere Complex) components enriched in the CENP-A chromatin of human cells. Genes Cells 11: 673-684.
4. Okada, M., et al. 2006. The CENP-H-I complex is required for the efficient incorporation of newly synthesized CENP-A into centromeres. Nat. Cell Biol. 8: 446-457.
5. Foltz, D.R., et al. 2006. The human CENP-A centromeric nucleosome-associated complex. Nat. Cell Biol. 8: 458-469.
6. McClelland, S.E., et al. 2007. The CENP-A NAC/CAD kinetochore complex controls chromosome congression and spindle bipolarity. EMBO J. 26: 5033-5047.
7. Black, B.E., et al. 2008. The histone variant CENP-A and centromere specification. Curr. Opin. Cell Biol. 20: 91-100.
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CHROMOSOMAL LOCATION

Genetic locus: Cenpn (mouse) mapping to 8 E1.

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.

PRODUCT

CENP-N 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 CENP-N shRNA Plasmid (m): sc-72861-SH and CENP-N shRNA (m) Lentiviral Particles: sc-72861-V as alternate gene silencing products.

For independent verification of CENP-N (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-72861A, sc-72861B and sc-72861C.

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

CENP-N siRNA (m) is recommended for the inhibition of CENP-N 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 CENP-N gene expression knockdown using RT-PCR Primer: CENP-N (m)-PR: sc-72861-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.