

# CENP-T siRNA (h): sc-93326

## 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-T (centromere protein T), also known as ICEN22 (interphase centromere complex protein 22), is a 561 amino acid protein that exists as a component of the CENPA-NAC complex. Localizing to kinetochore domains of centromeres, CENP-T exists as three alternatively spliced isoforms and undergoes phosphorylation following DNA damage, most likely by Atm or ATR.

## REFERENCES

1. Izuta, H., Ikeno, M., Suzuki, N., Tomonaga, T., Nozaki, N., Obuse, C., Kisu, Y., Goshima, N., Nomura, F., Nomura, N. and Yoda, K. 2006. Comprehensive analysis of the ICEN (Interphase Centromere Complex) components enriched in the CENP-A chromatin of human cells. *Genes Cells* 11: 673-684.
2. Foltz, D.R., Jansen, L.E., Black, B.E., Bailey, A.O., Yates, J.R. and Cleveland, D.W. 2006. The human CENP-A centromeric nucleosome-associated complex. *Nat. Cell Biol.* 8: 458-469.
3. Nousiainen, M., Sillje, H.H., Sauer, G., Nigg, E.A. and Körner, R. 2006. Phosphoproteome analysis of the human mitotic spindle. *Proc. Natl. Acad. Sci. USA* 103: 5391-5396.
4. Matsuo, S., Ballif, B.A., Smogorzewska, A., McDonald, E.R., Hurov, K.E., Luo, J., Bakalarski, C.E., Zhao, Z., Solimini, N., Lerenthal, Y., Shiloh, Y., Gygi, S.P. and Elledge, S.J. 2007. Atm and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. *Science* 316: 1160-1166.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611510. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Hori, T., Amano, M., Suzuki, A., Backer, C.B., Welburn, J.P., Dong, Y., McEwen, B.F., Shang, W.H., Suzuki, E., Okawa, K., Cheeseman, I.M. and Fukagawa, T. 2008. CCAN makes multiple contacts with centromeric DNA to provide distinct pathways to the outer kinetochore. *Cell* 135: 1039-1052.

## CHROMOSOMAL LOCATION

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

## PRODUCT

CENP-T siRNA (h) is a pool of 2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CENP-T shRNA Plasmid (h): sc-93326-SH and CENP-T shRNA (h) Lentiviral Particles: sc-93326-V as alternate gene silencing products.

For independent verification of CENP-T (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-93326A and sc-93326B.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

CENP-T siRNA (h) is recommended for the inhibition of CENP-T 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  $\mu$ M in 66  $\mu$ l. 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-T gene expression knockdown using RT-PCR Primer: CENP-T (h)-PR: sc-93326-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Wang, Y., Li, J., Dong, F., Yue, W., Ouyang, Y.C., Wang, Z.B., Hou, Y., Schatten, H. and Sun, Q.Y. 2020. CENP-T regulates both the G<sub>2</sub>/M transition and anaphase entry by acting through CDH1 in meiotic oocytes. *J. Cell Sci.* 133: jcs238105.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## ROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.