SANTA CRUZ BIOTECHNOLOGY, INC.

H1T2 siRNA (h): sc-95952

BACKGROUND

H1T2, also known as H1FNT (H1 histone family, member N, testis-specific) or haploid germ cell-specific nuclear protein 1, is a 255 amino acid nuclear protein belonging to the histone H1/H5 family. Essential for normal spermatogenesis and male fertility, H1T2 is required for proper cell restructuring and DNA condensation during the elongation phase of spermiogenesis. H1T2 is specifically involved in the replacement of histones with protamines during spermiogenesis and binds both double-stranded and single-stranded DNA, ATP and protamine-1. The gene encoding H1T2 maps to human chromosome 12, which encodes over 1,400 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p, which causes facial developmental defects and seizure disorders.

REFERENCES

1. Zumkeller, W., et al. 2004. Genotype/phenotype analysis in a patient with pure and complete trisomy 12p. Am. J. Med. Genet. A 129A: 261-264.
2. Tanaka, H., et al. 2005. HANP1/H1T2, a novel histone H1-like protein involved in nuclear formation and sperm fertility. Mol. Cell. Biol. 25: 7107-7119.
3. Martianov, I., et al. 2005. Polar nuclear localization of H1T2, a histone H1 variant, required for spermatid elongation and DNA condensation during spermiogenesis. Proc. Natl. Acad. Sci. USA 102: 2808-2813.
4. Catena, R., et al. 2006. Changes in intranuclear chromatin architecture induce bipolar nuclear localization of histone variant H1T2 in male haploid spermatids. Dev. Biol. 296: 231-238.
5. Tanaka, H., et al. 2006. Expression profiles and single-nucleotide polymorphism analysis of human HANP1/H1T2 encoding a histone H1-like protein. Int. J. Androl. 29: 353-359.
6. Scherer, S.E. 2006. The finished DNA sequence of human chromosome 12. Nature 440: 346-351.
7. Catena, R., et al 2009. HMGB4, a novel member of the HMGB family, is preferentially expressed in the mouse testis and localizes to the basal pole of elongating spermatids. Biol. Reprod. 80: 358-366.

CHROMOSOMAL LOCATION

Genetic locus: H1FNT (human) mapping to 12q13.11.

PRODUCT

H1T2 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 H1T2 shRNA Plasmid (h): sc-95952-SH and H1T2 shRNA (h) Lentiviral Particles: sc-95952-V as alternate gene silencing products.

For independent verification of H1T2 (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-95952A, sc-95952B and sc-95952C.

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

H1T2 siRNA (h) is recommended for the inhibition of H1T2 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 H1T2 gene expression knockdown using RT-PCR Primer: H1T2 (h)-PR: sc-95952-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.