SANTA CRUZ BIOTECHNOLOGY, INC.

TIN2 siRNA (h): sc-38552

BACKGROUND

Telomeres are DNA-protein structures that protect the ends of linear chromosomes and help maintain genomic stability and cell phenotype. Mammalian telomeric proteins consist of TRF1 (telomeric repeat binding factor), TRF2, tankyrase, and TIN2, which have no recognized orthologs in the budding yeast, *Saccharomyces cerevisiae,* and RAP1, which is an ortholog to the yeast telomeric protein scRap1. Like scRap1, mammalian RAP1 regulates telomere elongation. RAP1 interacts with two proteins, Rif1 and Rif2, which contribute to telomere length homeostasis. Unlike scRap1, which binds telomeric DNA directly, RAP1 is recruited to telomeres by TRF2. The functional and structural similarities of scRap1 to mammalian RAP1 suggest that the budding yeast preserved RAP1 at telomeres, but lost the TRF component. The telomeric protein TRF1 requires TIN2 to control telomere length in human cells.

REFERENCES

1. Marcand, S., Gilson, E. and Shore, D. 1997. A protein-counting mechanism for telomere length regulation in yeast. Science 275: 986-990.
2. Wotten, D. and Shore, D. 1997. A novel Rap1p-interacting factor, Rif2p, cooperates with Rif1p to regulate telomere length in *Saccharomyces cerevisiae*. Genes Dev. 11: 748-760.
3. Kim, S.H., Kaminker, P. and Campisi, J. 1999. TIN2, a new regulator of telomere length in human cells. Nat. Genet. 23: 405-412.
4. Scherthan, H., Jerratsch, M., Li, B., Smith, S., Hulten, M., Lock, T. and de Lange, T. 2000. Mammalian meiotic telomeres: protein com-position and redistribution in relation to nuclear pores. Mol. Cell. Biol. 11: 4189-4203.
5. Li, B., Oestreich, S. and de Lange, T. 2000. Identification of human RAP1: implications for telomere evolution. Cell 101: 471-483.

CHROMOSOMAL LOCATION

Genetic locus: TINF2 (human) mapping to 14q12.

PRODUCT

TIN2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TIN2 shRNA Plasmid (h): sc-38552-SH and TIN2 shRNA (h) Lentiviral Particles: sc-38552-V as alternate gene silencing products.

For independent verification of TIN2 (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-38552A and sc-38552B.

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

TIN2 siRNA (h) is recommended for the inhibition of TIN2 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.

GENE EXPRESSION MONITORING

TIN2 (59B388): sc-52960 is recommended as a control antibody for monitoring of TIN2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TIN2 gene expression knockdown using RT-PCR Primer: TIN2 (h)-PR: sc-38552-PR (20 µl, 558 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.