SANTA CRUZ BIOTECHNOLOGY, INC.

PINX1 siRNA (h): sc-62814

BACKGROUND

PINX1 (PIN2/TRF1-interacting protein X1), also known as LPTL or LPTS (liver-related putative tumor suppressor), is a ubiquitously expressed protein that localizes to nucleoli and telomere speckles. PINX1 contains one G-patch domain and one telomeric inhibiting domain (TID) at its C-terminus. PINX1 interacts with the telomere protein TRF1 and the telomerase reverse transcriptase TERT. The TID domain of PINX1 specifically interacts with TERT and functions to inhibit its activity, thus participating in the regulation of telomerase activity. Overexpression of PINX1 leads to shortened telomeres, further supporting an inhibitory role of PINX1 on telomerase activity. The depletion of PINX1 significantly increases telomerase activity and may lead to tumorigenicity of cancer cells. This suggests that PINX1 acts as a tumor suppressor and can inhibit cell proliferation. In addition, PINX1 is involved in nucleolar RNA maturation.

REFERENCES

1. Zhou, X.Z., et al. 2001. The PIN2/TRF1-interacting protein PINX1 is a potent telomerase inhibitor. Cell 107: 347-359.
2. Guglielmi, B., et al. 2002. The yeast homolog of human PINX1 is involved in rRNA and small nucleolar RNA maturation, not in telomere elongation inhibition. J. Biol. Chem. 277: 35712-35719.
3. Banik, S.S., et al. 2004. Characterization of interactions between PINX1 and human telomerase subunits hTERT and hTR. J. Biol. Chem. 279: 51745-51748.
4. Hawkins, G.A., et al. 2004. Mutational analysis of PINX1 in hereditary prostate cancer. Prostate 60: 298-302.
5. Akiyama, Y., et al. 2004. Human PINX1, a potent telomerase inhibitor, is not involved in human gastrointestinal tract carcinoma. Oncol. Rep. 11: 871-874.
6. Kondo, T., et al. 2005. Loss of heterozygosity and histone hypoacetylation of the PINX1 gene are associated with reduced expression in gastric carcinoma. Oncogene 24: 157-164.

CHROMOSOMAL LOCATION

Genetic locus: PINX1 (human) mapping to 8p23.1.

PRODUCT

PINX1 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 PINX1 shRNA Plasmid (h): sc-62814-SH and PINX1 shRNA (h) Lentiviral Particles: sc-62814-V as alternate gene silencing products.

For independent verification of PINX1 (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-62814A, sc-62814B and sc-62814C.

RESEARCH USE

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

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

PINX1 siRNA (h) is recommended for the inhibition of PINX1 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

PINX1 (D-3): sc-374113 is recommended as a control antibody for monitoring of PINX1 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PINX1 gene expression knockdown using RT-PCR Primer: PINX1 (h)-PR: sc-62814-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.