SANTA CRUZ BIOTECHNOLOGY, INC.

ACD siRNA (m): sc-140802

BACKGROUND

ACD (adrenocortical dysplasia homolog), also known as PIP1, PTOP, TPP1 or TINT1 is a 544 amino acid human homolog of the mouse Acd protein and is one of six components in the telosome/shelterin complex; a complex involved in shaping and guarding telomeres. ACD is essential for the proper assembly and stabilization of the telomere-associated complex and is able to interact directly with POT1 (protection of telomeres 1) and TRF1 (telomeric repeat binding factor 1), two additional members of the multi-protein complex. Localized to the nucleus, ACD helps to control telomere length and elongation by mediating telomerase activity and telomerase access to DNA. Through its ability to control and maintain telomere growth, ACD is thought to be involved in organogenesis. Two isoforms of ACD are expressed due to alternative splicing events.

REFERENCES

1. Ye, J.Z., et al. 2004. POT1-interacting protein PIP1: a telomere length regulator that recruits POT1 to the TIN2/TRF1 complex. Genes Dev. 18: 1649-1654.
2. Liu, D., et al. 2004. PTOP interacts with POT1 and regulates its localization to telomeres. Nat. Cell Biol. 6: 673-680.
3. de Lange, T. 2005. Shelterin: the protein complex that shapes and safeguards human telomeres. Genes Dev. 19: 2100-2110.
4. O'Connor, M.S., et al. 2006. A critical role for TPP1 and TIN2 interaction in high-order telomeric complex assembly. Proc. Natl. Acad. Sci. USA 103: 11874-11879.
5. Hockemeyer, D., et al. 2007. Telomere protection by mammalian POT1 requires interaction with TPP1. Nat. Struct. Mol. Biol. 14: 754-761.
6. Cristofari, G., et al. 2007. Telomerase unplugged. ACS Chem. Biol. 2: 155-158.
7. Wang, F., et al. 2007. The POT1-TPP1 telomere complex is a telomerase processivity factor. Nature 445: 506-510.

CHROMOSOMAL LOCATION

Genetic locus: Acd (mouse) mapping to 8 D3.

PRODUCT

ACD siRNA (m) is a target-specific 19-25 nt siRNA 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 ACD shRNA Plasmid (m): sc-140802-SH and ACD shRNA (m) Lentiviral Particles: sc-140802-V as alternate gene silencing products.

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

ACD siRNA (m) is recommended for the inhibition of ACD 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.

GENE EXPRESSION MONITORING

ACD (A-8): sc-377318 is recommended as a control antibody for monitoring of ACD 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 ACD gene expression knockdown using RT-PCR Primer: ACD (m)-PR: sc-140802-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.