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SANTA CRUZ BIOTECHNOLOGY, INC.

ATDC siRNA (m): sc-44434

BACKGROUND

Ataxia telangiectasia (AT) is an autosomal recessive human genetic disease characterized by an elevated risk of cancer, immune defects, genetic instability and an increased sensitivity to radiation. For example, 10-15% of AT patients suffer an extremely high incidence of lymphoid malignancies, incuding both T and B cell tumors, by early adulthood. Interestingly, there is a total absence of myloid tumors in these patients. Although AT homozygotes are rare, the AT gene is likely to play a role in sporadic breast cancer and other common cancers. The human AT gene has been mapped to chromosome 11q23.3. The AT group D complementing gene has been cloned. The protein, designated ATDC, has been shown to interact with the intermediate filament protein Vimentin, a substrate for the PKC family of protein kinases and with hPKCI-1, an inhibitor of the PKCs. Examination of the predicted ATDC amino acid sequence has revealed the presence of both zinc-finger and leucine-zipper motifs, suggesting that the protein may form homodimers and possibly associate with DNA.

REFERENCES

1. Kapp, L.N., et al. 1992. Cloning of a candidate gene for ataxia-telangiectasia group D. Amer. J. Hum. Gen. 51: 45-54.
2. Richard, C.W. III, et al. 1993. A radiation hybrid map of human chromosome 11q22-q23 containing the ataxia-telangiectasia disease locus. Genomics 17: 1-5.
3. Murnane, J.P., et al. 1994. Expression of the candidate A-T gene ATDC is not detectable in a human cell line with a normal response to ionizing radiation. Intl. J. Radiation Biol. 66: S77-S84.
4. Leonhardt, E.A., et al. 1994. Nucleotide sequence analysis of a candidate gene for ataxia-telangiectasia group D (ATDC). Genomics 19: 130-136.
5. Meyn, M.S. 1995. Ataxia-telangiectasia and cellular responses to DNA damage. Cancer Res. 55: 5991-6001.
6. Brzoska, P.M., et al. 1995. The product of the ataxia-telangiectasia group D complementing gene, ATDC, interacts with a protein kinase C substrate and inhibitor. Proc. Natl. Acad. Sci. USA 92: 7824-7828.

CHROMOSOMAL LOCATION

Genetic locus: Trim29 (mouse) mapping to 9 A5.1.

PRODUCT

ATDC siRNA (m) 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 ATDC shRNA Plasmid (m): sc-44434-SH and ATDC shRNA (m) Lentiviral Particles: sc-44434-V as alternate gene silencing products.

For independent verification of ATDC (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44434A, sc-44434B and sc-44434C.

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

ATDC siRNA (m) is recommended for the inhibition of ATDC 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

ATDC (C-2): sc-376125 is recommended as a control antibody for monitoring of ATDC 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 ATDC gene expression knockdown using RT-PCR Primer: ATDC (m)-PR: sc-44434-PR (20 µl, 524 bp). 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.