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# ATDC shRNA (m) Lentiviral Particles: sc-44434-V

## 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, including 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 hPKC1-1, 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: S77-84.
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 shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see ATDC siRNA (m): sc-44434 and ATDC shRNA Plasmid (m): sc-44434-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^{\circ}$  C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^{\circ}$  C for up to one week. Avoid repeated freeze thaw cycles.

## APPLICATIONS

ATDC shRNA (m) Lentiviral Particles is recommended for the inhibition of ATDC expression in mouse cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker<sup>™</sup> compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## 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  $\mu$ l, 524 bp). Annealing temperature for the primers should be  $55-60^{\circ}$  C and the extension temperature should be  $68-72^{\circ}$  C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

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