SANTA CRUZ BIOTECHNOLOGY, INC.

ATAD2 shRNA (m) Lentiviral Particles: sc-141315-V

BACKGROUND

ATAD2 (ATPase family, AAA domain containing 2), also known as ANCCA or L16, is a 1,390 amino acid protein that localizes to the nucleus and contains one bromo domain. One of several members of the AAA ATPase family, ATAD2 is thought to exhibit transcriptional coactivation activity towards ERα, a protein that is required to induce the expression of a variety of proteins, including cyclin D1 and c-Myc. Additionally, ATAD2 catalyzes the ATP-dependent phosphorylation of target proteins and is involved in histone hyperacetylation, as well as in estrogen-induced cell proliferation and cell cycle progression of breast cancer cells. ATAD2 is overexpressed in breast, colon, ovary, stomach and osteosarcoma tumor tissue, suggesting an important role in carcinogenesis. Multiple isoforms of ATAD2 exist due to alternative splicing events.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611941. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Petroziello, J., et al. 2004. Suppression subtractive hybridization and expression profiling identifies a unique set of genes overexpressed in non-small-cell lung cancer. Oncogene 23: 7734-7745.
3. Wang, Y., et al. 2005. Gene-expression profiles to predict distant metastasis of lymph-node-negative primary breast cancer. Lancet 365: 671-679.
4. Teschendorff, A.E., et al. 2006. A consensus prognostic gene expression classifier for ER positive breast cancer. Genome Biol. 7: R101.
5. Fellenberg, J., et al. 2007. Prognostic significance of drug-regulated genes in high-grade osteosarcoma. Mod. Pathol. 20: 1085-1094.
6. Lin, Z., et al. 2007. Novel estrogen receptor-α binding sites and estradiol target genes identified by chromatin immunoprecipitation cloning in breast cancer. Cancer Res. 67: 5017-5024.
7. Zou, J.X., et al. 2007. ANCCA, an estrogen-regulated AAA$^+$ ATPase coactivator for ERα, is required for coregulator occupancy and chromatin modification. Proc. Natl. Acad. Sci. USA 104: 18067-18072.

CHROMOSOMAL LOCATION

Genetic locus: Atad2 (mouse) mapping to 15 D1.

PRODUCT

ATAD2 shRNA (m) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 µl frozen stock containing 1.0 x 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 ATAD2 siRNA (m): sc-141315 and ATAD2 shRNA Plasmid (m): sc-141315-SH as alternate gene silencing products.

STORAGE

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

APPLICATIONS

ATAD2 shRNA (m) Lentiviral Particles is recommended for the inhibition of ATAD2 expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ATAD2 gene expression knockdown using RT-PCR Primer: ATAD2 (m)-PR: sc-141315-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° 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.

PROTOCOLS

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