



ADAT3 shRNA (h) Lentiviral Particles: sc-97606-V

BACKGROUND

Editing of RNA alters the nucleotide sequence of a transcript to produce codon changes, which can result in alternative translation patterns from a single pre-mRNA. One type of RNA editing involves tRNA-specific adenosine deaminase, ADAT1, which is responsible for the first step in the processing of eukaryotic tRNA^{Ala} transcripts that undergo specific adenosine to inosine modifications. ADAT2 (tRNA-specific adenosine deaminase 2), also known as deaminase domain-containing protein 1, and ADAT3 (tRNA-specific adenosine deaminase-like protein 3) are also thought to participate in the deamination of adenosine-34 to inosine in many tRNAs. Belonging to the cytidine and deoxycytidylate deaminase protein family, ADAT2 and ADAT3 both employ Zinc as a cofactor. ADAT2 is a 191 amino acid protein that exists as two isoforms produced by alternative splicing events. ADAT3 is a 351 amino acid protein that is phosphorylated upon DNA damage, possibly by Atm or ATR.

REFERENCES

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4. Maas, S., et al. 1999. Identification and characterization of a human tRNA-specific adenosine deaminase related to the ADAR family of pre-mRNA editing enzymes. *Proc. Natl. Acad. Sci. USA* 96: 8895-8900.
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8. Matsuoka, S., et al. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. *Science* 316: 1160-1166.

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.

CHROMOSOMAL LOCATION

Genetic locus: ADAT3 (human) mapping to 19p13.3.

PRODUCT

ADAT3 shRNA (h) 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 μ l frozen stock containing 1.0×10^6 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 ADAT3 siRNA (h): sc-97606 and ADAT3 shRNA Plasmid (h): sc-97606-SH as alternate gene silencing products.

APPLICATIONS

ADAT3 shRNA (h) Lentiviral Particles is recommended for the inhibition of ADAT3 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 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 ADAT3 gene expression knockdown using RT-PCR Primer: ADAT3 (h)-PR: sc-97606-PR (20 μ l). 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.

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.