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# $\alpha$ -tectorin shRNA (m) Lentiviral Particles: sc-45731-V

## BACKGROUND

$\alpha$ -tectorin (also designated TECTA) is an important non-collagenous component of the tectorial membrane which is an extracellular matrix of the inner ear. The tectorial membrane covers the cochleas neuroepithelium and contacts the stereocilia bundles of specialized sensory hair cells. Sound gets transduced into electrical signals by the movement of these hair cells relative to the tectorial membrane as the stereocilia deflect and cause fluctuations in hair-cell membrane potential. The  $\alpha$ -tectorin protein can form homomeric or heteromeric filaments after self-association or association with  $\beta$ -tectorin, respectively. Mutations in the  $\alpha$ -tectorin gene can cause autosomal dominant non-syndromic sensorineural deafness. The localization of these mutations in different modules of the protein may cause different clinical features.

## REFERENCES

1. Iimura, O., et al. 1976. Studies on experimental coronary insufficiency. II. Effects of  $\beta$ -adrenergic blocking agent (propranolol) on metabolic response to adrenaline and noradrenaline in dogs with coronary constriction. *Recent Adv. Stud. Cardiac Struct. Metab.* 12: 543-547.
2. Legan, P.K., et al. 2000. A targeted deletion in  $\alpha$ -tectorin reveals that the tectorial membrane is required for the gain and timing of cochlear feedback. *Neuron*. 28: 273-285.
3. Maeda, Y., et al. 2001. Quantification of TECTA and DFNA5 expression in the developing mouse cochlea. *Neuroreport* 12: 3223-3226.
4. Iwasaki, S., et al. 2002. Association of clinical features with mutation of TECTA in a family with autosomal dominant hearing loss. *Arch. Otolaryngol. Head Neck Surg.* 128: 913-917.

## CHROMOSOMAL LOCATION

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

## PRODUCT

$\alpha$ -tectorin 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  $\alpha$ -tectorin siRNA (m): sc-45731 and  $\alpha$ -tectorin shRNA Plasmid (m): sc-45731-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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

$\alpha$ -tectorin shRNA (m) Lentiviral Particles is recommended for the inhibition of  $\alpha$ -tectorin 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

$\alpha$ -tectorin (C-20): sc-18035 is recommended as a control antibody for monitoring of  $\alpha$ -tectorin 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (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  $\alpha$ -tectorin gene expression knockdown using RT-PCR Primer:  $\alpha$ -tectorin (m)-PR: sc-45731-PR (20  $\mu$ l). 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.