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# Tns shRNA (h) Lentiviral Particles: sc-44159-V

## BACKGROUND

Tensin (Tns) is an Actin filament capping protein localized to various types of adherens junctions in muscle and non-muscle cells. Tensin is involved in the maintenance of cellular structure by anchoring Actin filaments at the focal adhesion via F-Actin binding and capping activities. However, tensin also contains a Src homology 2 (SH2) domain and has the ability to be phosphorylated. Tensin is phosphorylated on tyrosine, serine and threonine residues, suggesting that it might participate in signal transduction cascades. These diverse characteristics in a single molecule indicate that tensin may be an important link between the cytoskeleton and signal transduction pathways.

## REFERENCES

1. Bockholt, S.M., et al. 1993. Cell spreading on extracellular matrix proteins induces tyrosine phosphorylation of tensin. *J. Biol. Chem.* 268: 14565-14567.
2. Lo, S.H., et al. 1994. Interactions of tensin with Actin and identification of its three distinct Actin-binding domains. *J. Cell Biol.* 125: 1067-1075.
3. Lo, S.H., et al. 1994. Tensin: a potential link between the cytoskeleton and signal transduction. *Bioessays* 16: 817-823.
4. Chuang, J.Z., et al. 1995. Molecular cloning, expression and mapping of the high affinity Actin-capping domain of chicken cardiac tensin. *J. Cell Biol.* 128: 1095-1109.
5. Haynie, D.T., et al. 1996. The N-terminal domains of tensin and auxilin are phosphatase homologues. *Protein Sci.* 5: 2643-2646.
6. Chen, H., et al. 2000. Molecular characterization of human tensin. *Biochem. J.* 351: 403-411.
7. Katz, B.Z., et al., 2000. Tensin can induce JNK and p38 activation. *Biochem. Biophys. Res. Commun.* 272: 717-720.
8. Yamashita, M., et al. 2004. Tensin is potentially involved in extracellular matrix production in mesangial cells. *Histochem. Cell Biol.* 121: 245-254.

## CHROMOSOMAL LOCATION

Genetic locus: TNS (human) mapping to 2q35.

## PRODUCT

Tns shRNA (h) 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 Tns siRNA (h): sc-44159 and Tns shRNA Plasmid (h): sc-44159-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

Tns shRNA (h) Lentiviral Particles is recommended for the inhibition of Tns expression in human 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

Tns (H-300): sc-28542 is recommended as a control antibody for monitoring of Tns 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-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Tns gene expression knockdown using RT-PCR Primer: Tns (h)-PR: sc-44159-PR (20  $\mu$ l, 488 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.

## PROTOCOLS

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