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# $\alpha$ -Syntrophin shRNA (h) Lentiviral Particles: sc-43435-V

## BACKGROUND

The syntrophins are PDZ-domain-containing proteins that facilitate the recruitment of signaling proteins such as NOS1 to the dystrophin-associated protein complex. The syntrophin family are structurally related proteins that contain multiple protein interaction motifs. Syntrophins associate directly with dystrophin, the product of the duchenne muscular dystrophy locus, and its homologs.  $\alpha$ -Syntrophin has an important role in synapse formation and in the organization of utrophin, acetylcholine receptor and acetylcholinesterase at the neuromuscular synapse. Specifically, NOS1 binds to  $\alpha$ -Syntrophin at muscle sarcolemma.  $\beta$ 2-Syntrophin is a modular adapter. In muscle cells,  $\beta$ 2-Syntrophin interacts with members of the dystrophin family, which includes utrophin.

## REFERENCES

1. Newey, S.E., et al. 2000. Alternative splicing of dystrobrevin regulates the stoichiometry of syntrophin binding to the dystrophin protein complex. *Curr. Biol.* 10: 1295-1298.
2. Abdelmoity, A., et al. 2000. Neuronal nitric oxide synthase localizes through multiple structural motifs to the sarcolemma in mouse myotubes. *FEBS Lett.* 482: 65-70.
3. Adams, M.E., et al. 2000. Absence of  $\alpha$ -syntrophin leads to structurally aberrant neuromuscular synapses deficient in utrophin. *J. Cell Biol.* 150: 1385-1398.
4. Ort, T., et al. 2000. The receptor tyrosine phosphatase-like protein ICA512 binds the PDZ domains of  $\beta$ 2-syntrophin and nNOS in pancreatic  $\beta$ -cells. *Eur. J. Cell Biol.* 79: 621-630.
5. Rocco, P., et al. 2000. Brazilian family with pure autosomal dominant spastic paraplegia maps to 8q: analysis of muscle  $\beta$ 1-Syntrophin. *Am. J. Med. Genet.* 92: 122-127.

## CHROMOSOMAL LOCATION

Genetic locus: SNTA1 (human) mapping to 20q11.21.

## PRODUCT

$\alpha$ -Syntrophin 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  $\alpha$ -Syntrophin siRNA (h): sc-43435 and  $\alpha$ -Syntrophin shRNA Plasmid (h): sc-43435-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ\text{C}$ . Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ\text{C}$  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

$\alpha$ -Syntrophin shRNA (h) Lentiviral Particles is recommended for the inhibition of  $\alpha$ -Syntrophin 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

$\alpha$ -Syntrophin (D-7): sc-166634 is recommended as a control antibody for monitoring of  $\alpha$ -Syntrophin 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  $\alpha$ -Syntrophin gene expression knockdown using RT-PCR Primer:  $\alpha$ -Syntrophin (h)-PR: sc-43435-PR (20  $\mu$ l). Annealing temperature for the primers should be  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## 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.