SANTA CRUZ BIOTECHNOLOGY, INC.

α-Syntrophin siRNA (m): sc-43436

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. α-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 α-Syntrophin at muscle sarcolemma. β2-Syntrophin is a modular adapter. In muscle cells, β2-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 α-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 β2-Syntrophin and nNOS in pancreatic β-cells. Eur. J. Cell Biol. 79: 621-630.

CHROMOSOMAL LOCATION

Genetic locus: Snta1 (mouse) mapping to 2 H1.

PRODUCT

α-Syntrophin siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see α-Syntrophin shRNA Plasmid (m): sc-43436-SH and α-Syntrophin shRNA (m) Lentiviral Particles: sc-43436-V as alternate gene silencing products.

For independent verification of α-Syntrophin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43436A, sc-43436B and sc-43436C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

α-Syntrophin siRNA (m) is recommended for the inhibition of α-Syntrophin expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

α-Syntrophin (D-7): sc-166634 is recommended as a control antibody for monitoring of α-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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor α-Syntrophin gene expression knockdown using RT-PCR Primer: α-Syntrophin (m)-PR: sc-43436-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, M.J., et al. 2010. α-Syntrophin modulates myogenin expression in differentiating myoblasts. PLoS ONE 5: e15355.
2. Lim, J.A., et al. 2016. α-Syntrophin is involved in the survival signaling pathway in myoblasts under menadione-induced oxidative stress. Exp. Cell Res. 344: 1-10.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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