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SANTA CRUZ BIOTECHNOLOGY, INC.

γ2-Syntrophin shRNA (h) Lentiviral Particles: sc-43443-V

BACKGROUND

The syntrophins are structurally related PDZ-domain-containing proteins that facilitate the recruitment of signaling proteins, such as NOS1, to the cell membrane. Syntrophins associate directly with dystrophin, a scaffold protein that is part of a complex which is disrupted in muscular dystrophy, and with dystrophin-related proteins. γ2-Syntrophin, also known as SYN5 or G2SYN, is a 539 amino acid member of the syntrophin family that functions as an adaptor protein to link and organize various proteins, such as dystrophin, within the cell. Localized to the sarcolemma cell membrane, γ2-Syntrophin is widely expressed and contains one PH domain and one PDZ domain. γ2-Syntrophin is able to recruit proteins to the membrane through its PDZ domain, which is unavailable when the protein is bound to a substrate. As a result of its interaction with various proteins, γ2-Syntrophin is implicated in inherited muscular dystrophy and in the development of autism.

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.
5. Rocco, P., et al. 2000. Brazilian family with pure autosomal dominant spastic paraplegia maps to 8q: analysis of muscle β1-Syntrophin. Am. J. Med. Genet. 92: 122-127.

CHROMOSOMAL LOCATION

Genetic locus: SNTG2 (human) mapping to 2p25.3.

PRODUCT

γ2-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 µl frozen stock containing 1.0 x 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 γ2-Syntrophin siRNA (h): sc-43443 and γ2-Syntrophin shRNA Plasmid (h): sc-43443-SH as alternate gene silencing products.

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.

APPLICATIONS

γ2-Syntrophin shRNA (h) Lentiviral Particles is recommended for the inhibition of γ2-Syntrophin expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 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

γ2-Syntrophin (L-15): sc-13772 is recommended as a control antibody for monitoring of γ2-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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 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™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor γ2-Syntrophin gene expression knockdown using RT-PCR Primer: γ2-Syntrophin (h)-PR: sc-43443-PR (20 µl, 484 bp). 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.

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.

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