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DRP2 shRNA (m) Lentiviral Particles: sc-43493-V

BACKGROUND

Dystrophin, utrophin and dystrophin-related protein 2 (DRP2) are actin-binding proteins that are involved in anchoring the cytoskeleton to the plasma membrane. Dystrophin is the protein product of the Duchenne/Becker muscular dystrophy gene. Dystrophin is expressed in muscle brain tissues, where it is localized to the inner surface of the plasma membrane. Evidence suggests that the upregulation of utrophin (also known as DRP1) can reduce the dystrophic pathology. DRP2 is principally expressed in the brain and spinal cord. Analysis of DRP2 expression in rat brain on SDS-PAGE reveals a characteristic quartet of bands. DRP2 exhibits a punctate staining pattern of rat neuronal dendrites and in neuropil. DRP2 forms a complex with dystroglycan at the surface of myelin-forming Schwann cells and may play a role in the terminal stages of myelination in the peripheral nervous system. The gene encoding human DRP2 maps to chromosome Xq22.

REFERENCES

1. Voit, T., et al. 1991. Dystrophin as a diagnostic marker in Duchenne and Becker muscular dystrophy. Correlation of immuno-fluorescence and western blot. *Neuropediatrics* 22: 152-162.
2. Winder, S.J., et al. 1995. Utrophin actin binding domain: analysis of actin binding and cellular targeting. *J. Cell Sci.* 108: 63-71.
3. Roberts, R.G., et al. 1996. Characterization of DRP2, a novel human dystrophin homologue. *Nat. Genet.* 13: 223-226.
4. Rybakova, I.N., et al. 1996. A new model for the interaction of dystrophin with F-actin. *J. Cell Biol.* 135: 661-672.
5. Tinsley, J.M., et al. 1996. Amelioration of the dystrophic phenotype of mdx mice using a truncated utrophin transgene. *Nature* 384: 349-353.

CHROMOSOMAL LOCATION

Genetic locus: Drp2 (mouse) mapping to X E3.

PRODUCT

DRP2 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 μ l frozen stock containing 1.0×10^6 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 DRP2 siRNA (m): sc-43493 and DRP2 shRNA Plasmid (m): sc-43493-SH as alternate gene silencing products.

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.

APPLICATIONS

DRP2 shRNA (m) Lentiviral Particles is recommended for the inhibition of DRP2 expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 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

DRP2 (S-20): sc-20317 is recommended as a control antibody for monitoring of DRP2 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 DRP2 gene expression knockdown using RT-PCR Primer: DRP2 (m)-PR: sc-43493-PR (20 μ l). 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.

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.

PROTOCOLS

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