**BACKGROUND**

Mutations in the ALS2 gene result in a number of juvenile recessive motor neuron diseases (MNDs), including juvenile primary lateral sclerosis (JPLS), a recessive form of amyotrophic lateral sclerosis (ALS2), infantile onset ascending hereditary spastic paraplegia (IASHP) and a form of complicated hereditary spastic paraplegia (CHSP). The ALS2 gene encodes the Alsin protein. Alsin acts as a guanine nucleotide exchange factor for Rab5, a modulator of the endocytic pathway. Alsin is a cytosolic protein, which is associated with small, punctate membrane structures. Therefore Alsin may mediate membrane transport events, potentially linking endocytic processes and actin cytoskeleton remodeling. The ALS2 C-terminal like protein (ALS2CL) also modulates Rab5 activity.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: ALS2CL (human) mapping to 3p21.31.

**PRODUCT**

ALS2CL 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 ALS2CL siRNA (h): sc-60156 and ALS2CL shRNA Plasmid (h): sc-60156-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**

ALS2CL shRNA (h) Lentiviral Particles is recommended for the inhibition of ALS2CL 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**

ALS2CL (E-8): sc-377278 is recommended as a control antibody for monitoring of ALS2CL gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:1000-1:10000) 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-IgG® HRP: sc-516102 or m-IgG®-κκ (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-IgG® Biotin: sc-516140 or m-IgG® Biotin: 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 ALS2CL gene expression knockdown using RT-PCR Primer: ALS2CL (h)-PR: sc-60156-PR (20 µl). 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 use this product or its components or materials made using this product or its components for Commercial Purposes.

**PROTOCOLS**

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