SANTA CRUZ BIOTECHNOLOGY, INC.

Sacsin siRNA (m): sc-61490

BACKGROUND

The SACS gene encodes Sacsin, a protein that plays an important role in chaperone-mediated protein folding and shows predominant expression in the central nervous system. Sacsin expression is also detected in skeletal muscle and pancreas tissues. Sacsin contains seven nuclear localization signals, three coiled-coils, and two leucine zipper motifs, in addition to the DnaJ motif and the hydrophobic domain contained within Sacsin's C-terminal region. Defects in the SACS gene can cause autosomal recessive spastic ataxia of Charlevoix-Saguenay (ARSACS), an early onset neurodegenerative disease characterized by reduced motor-nerve velocity, absent sensory-nerve conduction and hypermyelination of retinal-nerve fibers. ARSACS is highly prevalent in the Charlevoix-Saguenay-Lac-Saint-Jean region of Quebec.

REFERENCES

1. Engert, J.C., et al. 2000. Autosomal recessive spastic ataxia of Charlevoix-Saguenay (ARSACS): high-resolution physical and transcript map of the candidate region in chromosome region 13q11. Genomics 62: 156-164.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604490. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Hara, K., et al. 2005. Sacsin-related autosomal recessive ataxia without prominent retinal myelinated fibers in Japan. Mov. Disord. 20: 380-382.
4. Shimazaki, H., et al. 2005. A phenotype without spasticity in Sacsin-related ataxia. Neurology 64: 2129-2131.
5. Yamamoto, Y., et al. 2005. Novel compound heterozygous mutations in Sacsin-related ataxia. J. Neurol. Sci. 239: 101-104.
6. Okawa, S., et al. 2006. A novel Sacsin mutation in a Japanese woman showing clinical uniformity of autosomal recessive spastic ataxia of Charlevoix-Saguenay. J. Neurol. Neurosurg. Psychiatr. 77: 280-282.

CHROMOSOMAL LOCATION

Genetic locus: Sacs (mouse) mapping to 14 D1.

PRODUCT

Sacsin 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 Sacsin shRNA Plasmid (m): sc-61490-SH and Sacsin shRNA (m) Lentiviral Particles: sc-61490-V as alternate gene silencing products.

For independent verification of Sacsin (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-61490A, sc-61490B and sc-61490C.

PROTOCOLS

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

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

Sacsin siRNA (m) is recommended for the inhibition of Sacsin 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

Sacsin (G-3): sc-515118 is recommended as a control antibody for monitoring of Sacsin 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 Sacsin gene expression knockdown using RT-PCR Primer: Sacsin (m)-PR: sc-61490-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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