SANTA CRUZ BIOTECHNOLOGY, INC.

SH3TC2 siRNA (h): sc-91621

BACKGROUND

SH3TC2 (SH3 domain and tetratricopeptide repeats 2) is a 1,288 amino acid protein that contains one SH3 domain and eight TPR repeats. The SH3TC2 gene encodes a protein expressed in Schwann cells of peripheral nerves, and localized to the plasma membrane and to the perinuclear endocytic recycling compartment, suggesting a possible function in myelination and/or in regions of axoglial interactions. The SH3TC2 protein is expressed in adult heart, testis, spinal cord, and brain as well as in fetal brain and liver. Mild mononeuropathy of the median nerve (MNMN) is caused by heterozygous mutation in the SH3TC2 gene. Also, Charcot-Marie-Tooth disease type 4C (CMT4C) is a more severe neuropathy caused by homozygous or compound heterozygous mutation in the SH3TC2 gene. Existing as four alternatively spliced isoforms and containing 18 exons, the SH3TC2 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 5q32.

REFERENCES

1. Senderek, J., et al. 2003. Mutations in a gene encoding a novel SH3/TPR domain protein cause autosomal recessive Charcot-Marie-Tooth type 4C neuropathy. Am. J. Hum. Genet. 73: 1106-1119.
2. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608206. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Azzedine, H., et al. 2006. Spine deformities in Charcot-Marie-Tooth 4C caused by SH3TC2 gene mutations. Neurology 67: 602-606.
4. Lupo, V., et al. 2009. Missense mutations in the SH3TC2 protein causing Charcot-Marie-Tooth disease type 4C affect its localization in the plasma membrane and endocytic pathway. Hum. Mol. Genet. 18: 4603-4614.
5. Houlden, H., et al. 2009. The phenotype of Charcot-Marie-Tooth disease type 4C due to SH3TC2 mutations and possible predisposition to an inflammatory neuropathy. Neuromuscul. Disord. 19: 264-269.
6. Arnaud, E., et al. 2009. SH3TC2/KIAA1985 protein is required for proper myelination and the integrity of the node of Ranvier in the peripheral nervous system. Proc. Natl. Acad. Sci. USA 106: 17528-17533.

CHROMOSOMAL LOCATION

Genetic locus: SH3TC2 (human) mapping to 5q32.

PRODUCT

SH3TC2 siRNA (h) 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 SH3TC2 shRNA Plasmid (h): sc-91621-SH and SH3TC2 shRNA (h) Lentiviral Particles: sc-91621-V as alternate gene silencing products.

For independent verification of SH3TC2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-91621A, sc-91621B and sc-91621C.

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

SH3TC2 siRNA (h) is recommended for the inhibition of SH3TC2 expression in human 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SH3TC2 gene expression knockdown using RT-PCR Primer: SH3TC2 (h)-PR: sc-91621-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.

PROTOCOLS

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