SANTA CRUZ BIOTECHNOLOGY, INC.

ARHGEF10 siRNA (h): sc-77826

BACKGROUND

ARHGEF10 (Rho guanine nucleotide exchange factor 10), also known as GEF10 or KIAA0294, is a 1,369 amino acid protein that contains one DBL-homology domain and is thought to play a role in myelination of peripheral nerves, specifically during development. ARHGEF10 is expressed as four alternatively spliced isoforms that are present at low levels in ovary, lung, testis and kidney, with considerably higher expression in the central and peripheral nervous systems. Defects in the gene encoding ARHGEF10 are the cause of slowed nerve conduction velocity (SNCV), an autosomal dominant disorders that is characterized by a reduction in nerve velocities resulting from lack of proper myelination.

REFERENCES

1. Nagase, T., et al. 1997. Prediction of the coding sequences of unidentified human genes. VII. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 4: 141-150.
2. Nelis, E., et al. 1998. Mutation analysis of the nerve specific promoter of the peripheral myelin protein 22 gene in CMT1 disease and HNPP. J. Med. Genet. 35: 590-593.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608136. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Verhoeven, K., et al. 2003. Slowed conduction and thin myelination of peripheral nerves associated with mutant Rho Guanine-nucleotide exchange factor 10. Am. J. Hum. Genet. 73: 926-932.
5. Mohl, M., et al. 2006. Gef10—the third member of a Rho-specific guanine nucleotide exchange factor subfamily with unusual protein architecture. Naunyn Schmiedebergs Arch. Pharmacol. 373: 333-341.
6. Jungerius, B.J., et al. 2008. An association screen of myelin-related genes implicates the chromosome 22q11 PIK4CA gene in schizophrenia. Mol. Psychiatry. 13: 1060-1068.

CHROMOSOMAL LOCATION

Genetic locus: ARHGEF10 (human) mapping to 8p23.3.

PRODUCT

ARHGEF10 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 ARHGEF10 shRNA Plasmid (h): sc-77826-SH and ARHGEF10 shRNA (h) Lentiviral Particles: sc-77826-V as alternate gene silencing products.

For independent verification of ARHGEF10 (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-77826A, sc-77826B and sc-77826C.

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

ARHGEF10 siRNA (h) is recommended for the inhibition of ARHGEF10 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 ARHGEF10 gene expression knockdown using RT-PCR Primer: ARHGEF10 (h)-PR: sc-77826-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.