SANTA CRUZ BIOTECHNOLOGY, INC.

SCG10 siRNA (h): sc-40782

BACKGROUND

SCG10, also designated stathmin-like 2 (STMN2), is a neuronal growth-associated protein (nGAP) that belongs to the stathmin family. Stathmin family phosphoproteins are involved in regulation of microtubule dynamics and signal transduction. SCG10, which is membrane- associated and neuron-specific, may participate in neuronal differentiation and may modulate membrane interaction with the cytoskeleton during neurite outgrowth. The SCG10 protein binds to and inhibits the assembly of microtubules, and can also induce microtubule disassembly. The assembly and disassembly of microtubules is necessary for cell division, intracellular transport and cell movements, as well as neurite elongation, outgrowth and branching in the developing nervous system.

REFERENCES

1. Stein, R., et al. 1990. The NGF-inducible SCG10 mRNA encodes a novel membrane-bound protein present in growth cones and abundant in developing neurons. Neuron 1: 463-476.
2. Wuenschell, C.W., et al. 1990. Analysis of SCG10 gene expression in transgenic mice reveals that neural specificity is achieved through selective derepression. Neuron 4: 595-602.
3. Riederer, B.M., et al. 1997. Regulation of microtubule dynamics by the neuronal growth-associated protein SCG10. Proc. Natl. Acad. Sci. USA 94: 741-745.
4. Maekawa, S., et al. 2001. Localization of neuronal growth-associated, microtubule-destabilizin SCG10 in brain-derived raft membrane microdomains. J. Biochem. 129: 691-697.
5. Charbaut, E., et al. 2001. Stathmin family proteins display specific molecular and tubulin binding properties. J. Biol. Chem. 276: 16146-16154.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600621. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: STMN2 (human) mapping to 8q21.13.

PRODUCT

SCG10 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 SCG10 shRNA Plasmid (h): sc-40782-SH and SCG10 shRNA (h) Lentiviral Particles: sc-40782-V as alternate gene silencing products.

For independent verification of SCG10 (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-40782A, sc-40782B and sc-40782C.

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

SCG10 siRNA (h) is recommended for the inhibition of SCG10 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.

GENE EXPRESSION MONITORING

SCG10 (2-RE19): sc-135620 is recommended as a control antibody for monitoring of SCG10 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 SCG10 gene expression knockdown using RT-PCR Primer: SCG10 (h)-PR: sc-40782-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.