SANTA CRUZ BIOTECHNOLOGY, INC.

shootin1 siRNA (h): sc-90680

BACKGROUND

Shootin1, also known as KIAA1598, is a 631 amino acid protein that belongs to the shootin family. The shootin1 protein contains three coiled-coil domains, a proline-rich region and interacts with RUFY3. Shootin1 is involved in the generation of internal asymmetric signals required for neuronal polarization. The shootin1 protein acts upstream of PI3K (phosphoinositide 3-kinase), by being required for spatially localized PI3K activity. By accumulating asymmetrically in a single neurite before polarization, shootin1 leads to axon induction for polarization, additionally the absence of shootin1 from the nascent axon's siblings by competition prevents the formation of surplus axons. Existing as seven alternatively spliced isoforms, the shootin1 gene is conserved in chimpanzee, canine, mouse, rat, chicken and zebrafish, and maps to human chromosome 10q25.3.

REFERENCES

1. Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 7: 273-281.
2. Deloukas, P., et al. 2004. The DNA sequence and comparative analysis of human chromosome 10. Nature 429: 375-381.
3. Grupe, A., et al. 2006. A scan of chromosome 10 identifies a novel locus showing strong association with late-onset Alzheimer disease. Am. J. Hum. Genet. 78: 78-88.
4. Toriyama, M., et al. 2006. Shootin1: A protein involved in the organization of an asymmetric signal for neuronal polarization. J. Cell Biol. 175: 147-157.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611171. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Shimada, T., et al. 2008. Shootin1 interacts with actin retrograde flow and L1-CAM to promote axon outgrowth. J. Cell Biol. 181: 817-829.
7. Dephoure, N., et al. 2008. A quantitative atlas of mitotic phosphorylation. Proc. Natl. Acad. Sci. USA 105: 10762-10767.

CHROMOSOMAL LOCATION

Genetic locus: KIAA1598 (human) mapping to 10q25.3.

PRODUCT

shootin1 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 shootin1 shRNA Plasmid (h): sc-90680-SH and shootin1 shRNA (h) Lentiviral Particles: sc-90680-V as alternate gene silencing products.

For independent verification of shootin1 (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-90680A, sc-90680B and sc-90680C.

RESEARCH USE

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

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

shootin1 siRNA (h) is recommended for the inhibition of shootin1 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 shootin1 gene expression knockdown using RT-PCR Primer: shootin1 (h)-PR: sc-90680-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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