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SANTA CRUZ BIOTECHNOLOGY, INC.

SSH3 siRNA (m): sc-153844

BACKGROUND

SSH3 (slingshot homolog 3), also known as SSH3L, is a 659 amino acid protein that localizes to both the nucleus and cytoplasm and is a human homolog of the *Drosophila* slingshot (ssh) protein. Functioning as a protein phosphatase, SSH3 is thought to regulate actin filament dynamics through its control of proteins such as ADF (actin-depolymerizing factor) and Cofilin. The ADF/Cofilin family consists of stimulus-responsive mediators that rapidly depolymerize and disassemble F-actin in a stoichiometric manner and can be deactivated by a variety of kinases. SSH3 acts to catalytically dephosphorylate the ADF/Cofilin proteins, thereby reactivating them and allowing them to resume their control over actin dynamics. SSH3 contains one tyrosine-protein phosphatase domain and is expressed as five isoforms due to alternative splicing events.

REFERENCES

1. Bamburg, J.R. 1999. Proteins of the ADF/cofilin family: essential regulators of actin dynamics. Annu. Rev. Cell Dev. Biol. 15: 185-230.
2. Gsponer, J. and Caflisch, A. 2001. Role of native topology investigated by multiple unfolding simulations of four SH3 domains. J. Mol. Biol. 309: 285-298.
3. Niwa, R., et al. 2002. Control of actin reorganization by slingshot, a family of phosphatases that dephosphorylate ADF/cofilin. Cell 108: 233-246.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606780. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ohta, Y., et al. 2003. Differential activities, subcellular distribution and tissue expression patterns of three members of slingshot family phosphatases that dephosphorylate cofilin. Genes Cells 8: 811-824.
6. Gungabissoon, R.A. and Bamburg, J.R. 2003. Regulation of growth cone actin dynamics by ADF/cofilin. J. Histochem. Cytochem. 51: 411-420.
7. Soosairajah, J., et al. 2005. Interplay between components of a novel LIM kinase-slingshot phosphatase complex regulates cofilin. EMBO J. 24: 473-486.

CHROMOSOMAL LOCATION

Genetic locus: Ssh3 (mouse) mapping to 19 A.

PRODUCT

SSH3 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 SSH3 shRNA Plasmid (m): sc-153844-SH and SSH3 shRNA (m) Lentiviral Particles: sc-153844-V as alternate gene silencing products.

For independent verification of SSH3 (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-153844A, sc-153844B and sc-153844C.

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

SSH3 siRNA (m) is recommended for the inhibition of SSH3 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

SSH3 (B-7): sc-390058 is recommended as a control antibody for monitoring of SSH3 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 SSH3 gene expression knockdown using RT-PCR Primer: SSH3 (m)-PR: sc-153844-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.