SANTA CRUZ BIOTECHNOLOGY, INC.

STAC3 siRNA (h): sc-95967

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The Power to Question

BACKGROUND

The Src homology 3 (SH3) domain is a highly conserved 60 amino acid protein domain that is organized into a β-barrel fold consisting of five or six β strands arranged as two tightly packed anti-parallel β sheets. This domain is found in proteins that mediate assembly of specific protein complexes and interact with other proteins, specifically recognizing proline-rich regions. STAC3 (SH3 and cysteine rich domain 3) is a 364 amino acid protein containing one phorbol-ester/DAG-type zinc finger and two SH3 (Src homology 3) domains. Existing as two alternatively spliced isoforms, STAC3 maps to human chromosome 12q13.3. Human chromosome 12 encodes over 1,400 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p, which causes facial developmental defects and seizure disorders.

REFERENCES

1. Koch, C.A., et al. 1991. SH2 and SH3 domains: elements that control interactions of cytoplasmic signaling proteins. Science 252: 669-674.
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3. Ren, R., et al. 1993. Identification of a ten-amino acid proline-rich SH3 binding site. Science 259: 1157-1161.
4. Pandey, A., et al. 1995. Characterization of a novel Src-like adapter protein that associates with the Eck receptor tyrosine kinase. J. Biol. Chem. 270: 19201-19204.
5. Liu, S.K. and McGlade, C.J. 1998. Gads is a novel SH2 and SH3 domain-containing adaptor protein that binds to tyrosine-phosphorylated Shc. Oncogene 17: 3073-3082.
6. Zumkeller, W., et al. 2004. Genotype/phenotype analysis in a patient with pure and complete trisomy 12p. Am. J. Med. Genet. A 129A: 261-264.
7. Scherer, S.E. 2006. The finished DNA sequence of human chromosome 12. Nature 440: 346-351.
8. Ren, S., et al. 2008. The conservation pattern of short linear motifs is highly correlated with the function of interacting protein domains. BMC Genomics 9: 452.

CHROMOSOMAL LOCATION

Genetic locus: STAC3 (human) mapping to 12q13.3.

PRODUCT

STAC3 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 STAC3 shRNA Plasmid (h): sc-95967-SH and STAC3 shRNA (h) Lentiviral Particles: sc-95967-V as alternate gene silencing products.

For independent verification of STAC3 (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-95967A, sc-95967B and sc-95967C.

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

STAC3 siRNA (h) is recommended for the inhibition of STAC3 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

STAC3 (E-2): sc-514742 is recommended as a control antibody for monitoring of STAC3 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 STAC3 gene expression knockdown using RT-PCR Primer: STAC3 (h)-PR: sc-95967-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.