SANTA CRUZ BIOTECHNOLOGY, INC.

Nanos1 siRNA (h): sc-75864

BACKGROUND

Nanos1, also known as NOS1, is a 292 amino acid protein that localizes to the perinuclear region of the cytoplasm and contains one nanos-type zinc finger. Expressed at high levels in spermatogonia and present at lower levels in fetal ovaries, Nanos1 forms a complex with Pumilio 2 and functions to regulate the translation of select mRNAs, specifically via association with the 3'-UTR of its mRNA targets. Additionally, Nanos1 is required for the establishment and maintenance of germline stem cells, as it prevents their premature entry into oogenesis. The gene encoding Nanos1 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie-Tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromatic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

REFERENCES

1. Husi, H., et al. 2000. Proteomic analysis of NMDA receptor-adhesion protein signaling complexes. Nat. Neurosci. 3: 661-669.
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3. Wang, Z., et al. 2004. Nanos maintains germline stem cell self-renewal by preventing differentiation. Science 303: 2016-2019.
4. Strumane, K., et al. 2006. E-cadherin regulates human Nanos1, which interacts with p120ctn and induces tumor cell migration and invasion. Cancer Res. 66: 10007-10015.
5. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 608226. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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7. Ginter-Matuszewska, B., et al. 2009. The SNARE-associated component SNAPIN binds PUMILIO2 and NANOS1 proteins in human male germ cells. Mol. Hum. Reprod. 15: 173-179.

CHROMOSOMAL LOCATION

Genetic locus: NANOS1 (human) mapping to 10q26.11.

PRODUCT

Nanos1 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 Nanos1 shRNA Plasmid (h): sc-75864-SH and Nanos1 shRNA (h) Lentiviral Particles: sc-75864-V as alternate gene silencing products.

For independent verification of Nanos1 (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-75864A, sc-75864B and sc-75864C.

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

Nanos1 siRNA (h) is recommended for the inhibition of Nanos1 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

Nanos1 (5F12): sc-293352 is recommended as a control antibody for monitoring of Nanos1 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 Nanos1 gene expression knockdown using RT-PCR Primer: Nanos1 (h)-PR: sc-75864-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.