SANTA CRUZ BIOTECHNOLOGY, INC.

Nanos2 siRNA (m): sc-75867

BACKGROUND

Nanos2, also known as NOS2, is a 138 amino acid protein that contains one nanos-type zinc finger. The nanos-type zinc finger is comprised of two C2HC motifs, each of which are capable of binding one molecule of zinc and each of which work in tandem to play essential roles in translational regulation events. Expressed specifically in male germ cells, Nanos2 is essential for spermatogonia formation and is required to support the self-renewal, proliferation and overall development of proximal germ cells. Additionally, Nanos2 is thought to regulate the translation of target mRNAs, possibly by associating with the 3'-UTR of select transcripts. The gene encoding human Nanos2 maps to chromosome 19q13.32, which is the genetic home for a number of immunoglobulin superfamily members, including the killer cell and leukocyte Ig-like receptors, a number of ICAMs, the CEACAM and PSG family and Fc receptors (FcRs).

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608228. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Jaruzelska, J., et al. 2003. Conservation of a Pumilio-Nanos complex from *Drosophila* germ plasm to human germ cells. Dev. Genes Evol. 213: 120-126.
3. Tsuda, M., et al. 2003. Conserved role of nanos proteins in germ cell development. Science 301: 1239-1241.
4. D'Agostino, I., et al. 2006. Translational repression restricts expression of the *C. elegans* Nanos homolog NOS-2 to the embryonic germline. Dev. Biol. 292: 244-252.
5. Tsuda, M., et al. 2006. Implication of Nanos2-3'UTR in the expression and function of Nanos2. Mech. Dev. 123: 440-449.
6. Suzuki, A., et al. 2007. Functional redundancy among Nanos proteins and a distinct role of Nanos2 during male germ cell development. Development 134: 77-83.
7. Saga, Y. 2008. Sexual development of mouse germ cells: Nanos2 promotes the male germ cell fate by suppressing the female pathway. Dev. Growth Differ. 50: S141-S147.

CHROMOSOMAL LOCATION

Genetic locus: Nanos2 (mouse) mapping to 7 A3.

PRODUCT

Nanos2 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 Nanos2 shRNA Plasmid (m): sc-75867-SH and Nanos2 shRNA (m) Lentiviral Particles: sc-75867-V as alternate gene silencing products.

For independent verification of Nanos2 (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-75867A, sc-75867B and sc-75867C.

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

Nanos2 siRNA (m) is recommended for the inhibition of Nanos2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Nanos2 gene expression knockdown using RT-PCR Primer: Nanos2 (m)-PR: sc-75867-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.