SANTA CRUZ BIOTECHNOLOGY, INC.

ZAR1 siRNA (h): sc-63233

BACKGROUND

Oocytes are female gametes that are critical in postovulation events such as ovarian folliculogenesis, fertilization and embryogenesis. ZAR1 (zygote arrest 1) is an oocyte-specific maternal effect factor that is localized to the cytoplasm and is expressed in ovary and testis. Essential in the oocyte-to-embryo transition, ZAR1 is an evolutionary conserved protein that is responsible for female fertility and may play a role in transcriptional regulation. In mice, null expression of ZAR1 results in infertility, suggesting that ZAR1 plays a key role in both the initiation of embryonic development and in fertility control in mammals. ZAR1 is 424 amino acids in length and, like its mouse homolog, has an atypical PHD motif at its C-terminus.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607520. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Wu, X., et al. 2003. Zygote arrest 1 (Zar1) is a novel maternal-effect gene critical for the oocyte-to-embryo transition. Nat. Genet. 33: 187-191.
3. Wu, X., et al. 2003. Zygote arrest 1 (Zar1) is an evolutionarily conserved gene expressed in vertebrate ovaries. Biol. Reprod. 69: 861-867.
4. Pennetier, S., et al. 2004. Spatio-temporal expression of the germ cell marker genes MATER, ZAR1, GDF9, BMP15,andVASA in adult bovine tissues, oocytes, and preimplantation embryos. Biol. Reprod. 71: 1359-1366.
5. Brevini, T.A., et al. 2004. Expression pattern of the maternal factor zygote arrest 1 (Zar1) in bovine tissues, oocytes, and embryos. Mol. Reprod. Dev. 69: 375-380.
6. Uzbekova, S., et al. 2006. Zygote arrest 1 gene in pig, cattle and human: evidence of different transcript variants in male and female germ cells. Reprod. Biol. Endocrinol. 4: 12.
7. Zheng, P., et al. 2007. Oocyte-specific genes affect folliculogenesis, fertilization, and early development. Semin. Reprod. Med. 25: 243-251.

CHROMOSOMAL LOCATION

Genetic locus: ZAR1 (human) mapping to 4p11.

PRODUCT

ZAR1 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 ZAR1 shRNA Plasmid (h): sc-63233-SH and ZAR1 shRNA (h) Lentiviral Particles: sc-63233-V as alternate gene silencing products.

For independent verification of ZAR1 (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-63233A, sc-63233B and sc-63233C.

PROTOCOLS

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

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

ZAR1 siRNA (h) is recommended for the inhibition of ZAR1 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 ZAR1 gene expression knockdown using RT-PCR Primer: ZAR1 (h)-PR: sc-63233-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.