SANTA CRUZ BIOTECHNOLOGY, INC.

DAZ4 siRNA (h): sc-106904

BACKGROUND

Spermatogenesis is the process by which male spermatogonia develop into mature spermatozoa. DAZ (deleted in azoospermia) are RNA-binding proteins that play an essential role in spermatogenesis. DAZ proteins influence the first stages of spermatogenesis and the maintenance of germ cell populations. DAZ proteins (DAZ1, DAZ2, DAZ3, DAZ4 and DAZ5) are encoded by separate genes on chromosome Y, each of which contain an AZFc domain in their coding region. DAZ proteins localize to the nucleus of spermatogonia, but relocate to the cytoplasm during meiosis. DAZ proteins contain an RRM (RNA recognition motif) domain that may regulate mRNA translation by binding to the 3'UTR. Deletions in the genes encoding DAZ proteins may cause azoospermia or oligospermia which can lead to male infertility. DAZ4 (deleted in azoospermia 4), also known as pDP1680 or pDP1681, is a 579 amino acid testis specific protein that contains nine DAZ-like domains and two RNA recognition motifs (RRM). DAZ4 exists as two alternatively spliced isoforms.

REFERENCES

1. Reijo, R., et al. 1995. Diverse spermatogenic defects in humans caused by Y chromosome deletions encompassing a novel RNA-binding protein gene. Nature Genet. 10: 383-393.
2. Saxena, R., et al. 2000. Four DAZ genes in two clusters found in the AZFc region of the human Y chromosome. Genomics 67: 256-267.
3. Ruggiu, M. and Cooke, H.J. 2000. *In vivo* and *in vitro* analysis of homodimerisation activity of the mouse Dazl1 protein. Gene 252: 119-126.
4. Tsui, S., et al. 2000. Identification of two novel proteins that interact with germ-cell-specific RNA-binding proteins DAZ and DAZL1. Genomics 65: 266-273.
5. Moro, E., et al. 2000. Male infertility caused by a *de novo* partial deletion of the DAZ cluster on the Y chromosome. J. Clin. Endocrinol. Metab. 85: 4069-4073.
6. Foresta, C., et al. 2002. Inhibin B plasma concentrations in infertile patients with DAZ gene deletions treated with FSH. Eur. J. Endocrinol. 6: 801-806.
7. Skaletsky, H., et al. 2003. The male-specific region of the human Y chromosome is a mosaic of discrete sequence classes. Nature 423: 825-837.

CHROMOSOMAL LOCATION

Genetic locus: DAZ4 (human) mapping to Yq11.223.

PRODUCT

DAZ4 siRNA (h) is a target-specific 19-25 nt siRNA 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 DAZ4 shRNA Plasmid (h): sc-106904-SH and DAZ4 shRNA (h) Lentiviral Particles: sc-106904-V as alternate gene silencing products.

PROTOCOLS

See our web site at www.scbt.com or our catalog 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

DAZ4 siRNA (h) is recommended for the inhibition of DAZ4 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 60 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

DAZ4 (J-23): sc-133498 is recommended as a control antibody for monitoring of DAZ4 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DAZ4 gene expression knockdown using RT-PCR Primer: DAZ4 (h)-PR: sc-106904-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.