SANTA CRUZ BIOTECHNOLOGY, INC.

SPATA16 siRNA (h): sc-77980

BACKGROUND

SPATA16 (spermatogenesis associated 16), also known as NYD-SP12, is a 569 amino acid protein that assists in the development of the sperm acrosome and is suggested to participate in spermatogenesis and sperm-egg fusion. A member of the SPATA16 family, SPATA16 localizes to Golgi apparatus and is primarily expressed in testis, with lower levels found in kidney and pancreas. SPATA16 is encoded by a gene that maps to human chromosome 3q26.31 and mouse chromosome 3 A3. Defects in the SPATA16 gene lead to the development of globozoospermia (also termed round-headed spermatozoa), a rare form of teratozoospermia that is characterized by malformation of sperm acrosome and infertility.

REFERENCES

1. Kullander, S., et al. 1975. On round-headed human spermatozoa. Int. J. Fertil. 20: 33-40.
2. Battaglia, D.E., et al. 1997. Failure of oocyte activation after intracytoplasmic sperm injection using round-headed sperm. Fertil. Steril. 68: 118-122.
3. Xu, M., et al. 2003. Identification and characterization of a novel human testis-specific Golgi protein, NYD-SP12. Mol. Hum. Reprod. 9: 9-17.
4. Machev, N., et al. 2005. Chromosome abnormalities in sperm from infertile men with normal somatic karyotypes: teratozoospermia. Cytogenet. Genome Res. 111: 352-357.
5. Lu, L., et al. 2006. Gene functional research using polyethylenimine-mediated *in vivo* gene transfection into mouse spermatogenic cells. Asian J. Androl. 8: 53-59.
6. Dam, A.H., et al. 2007. Homozygous mutation in SPATA16 is associated with male infertility in human globozoospermia. Am. J. Hum. Genet. 81: 813-820.
7. Zhang, Q., et al. 2007. Rapid evolution, genetic variations, and functional association of the human spermatogenesis-related gene NYD-SP12. J. Mol. Evol. 65: 154-161.

CHROMOSOMAL LOCATION

Genetic locus: SPATA16 (human) mapping to 3q26.31.

PRODUCT

SPATA16 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 SPATA16 shRNA Plasmid (h): sc-77980-SH and SPATA16 shRNA (h) Lentiviral Particles: sc-77980-V as alternate gene silencing products.

For independent verification of SPATA16 (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-77980A, sc-77980B and sc-77980C.

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

SPATA16 siRNA (h) is recommended for the inhibition of SPATA16 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

SPATA16 (G-2): sc-374112 is recommended as a control antibody for monitoring of SPATA16 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 SPATA16 gene expression knockdown using RT-PCR Primer: SPATA16 (h)-PR: sc-77980-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.