SANTA CRUZ BIOTECHNOLOGY, INC.

SP17 siRNA (m): sc-63053

BACKGROUND

SP17 (sperm protein 17), also known as SPA17 (sperm autoantigenic protein 17), SP17-1 or CT22 (cancer/testis antigen 22), is a sperm surface peripheral membrane protein. It is predominantly expressed in testis and contains two heparan binding motifs and a C-terminal calmodulin (CaM)-binding domain. SP17 exists as a homodimer and localizes to the head and tail of spermatozoa. Residing in the fibrous sheath of the tail, SP17 interacts, via its N-terminus, with AKAP 3 and may play an important signaling role in this PKA-independent AKAP complex. Localizing to the cytoplasm of the head of spermatozoa, SP17 can bind to the zona pellucida of the oocyte with high affinity, suggesting a role in fertilization. In addition, SP17 has been identified as a cancer/ testis antigen and is expressed in ovarian cancer and multiple myeloma. This suggests that SP17 could be suitable as a target in tumor immunotherapy.

REFERENCES

1. Frayne, J., et al. 2002. A re-evaluation of sperm protein (Sp17) indicates a regulatory role in an A-kinase anchoring protein complex, rather than a unique role in sperm-zona pellucida binding. Reproduction 124: 767-774.
2. Takeoka, Y., et al. 2002. Developmental considerations of sperm protein 17 gene expression in rheumatoid arthritis synoviocytes. Dev. Immunol. 9: 97-102.
3. Grizzi, F., et al. 2003. Immunolocalization of sperm protein 17 in human testis and ejaculated spermatozoa. J. Histochem. Cytochem. 51: 1245-1248.
4. Wang, Z., et al. 2004. Sp17 gene expression in myeloma cells is regulated by promoter methylation. Br. J. Cancer 91: 1597-1603.
5. Lea, I.A., et al. 2004. Association of sperm protein 17 with A-kinase anchoring protein 3 in flagella. Reprod. Biol. Endocrinol. 2: 57.
6. Grizzi, F., et al. 2004. Sperm protein 17 is expressed in human somatic ciliated epithelia. J. Histochem. Cytochem. 52: 549-554.
7. Bumm, K., et al. 2005. Sperm protein 17 expression defines 2 subsets of primary esthesioneuroblastoma. Hum. Pathol. 36: 1289-1293.

CHROMOSOMAL LOCATION

Genetic locus: Spa17 (mouse) mapping to 9 A4.

PRODUCT

SP17 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 SP17 shRNA Plasmid (m): sc-63053-SH and SP17 shRNA (m) Lentiviral Particles: sc-63053-V as alternate gene silencing products.

For independent verification of SP17 (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-63053A, sc-63053B and sc-63053C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

SP17 siRNA (m) is recommended for the inhibition of SP17 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.

GENE EXPRESSION MONITORING

SP17 (A-12): sc-365325 is recommended as a control antibody for monitoring of SP17 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 SP17 gene expression knockdown using RT-PCR Primer: SP17 (m)-PR: sc-63053-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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