SANTA CRUZ BIOTECHNOLOGY, INC.

BSPH1 siRNA (m): sc-141763

BACKGROUND

A process termed capacitation is required for sperm to become competent of fertilization. Capacitation involves a number of molecular and morphological steps, which are promoted by a family of phospholipid-binding proteins found in bovine seminal plasma (BSP), and thus, have been termed BSP proteins. BSP proteins bind the sperm membrane during ejaculation to trigger capacitation and stimulate cholesterol and phospholipid efflux from the sperm membrane. BSP homologs and are believed to be conserved in mammals, characterized by two tandemly repeated fibronectin type-II domains. BSPH1 (binder of sperm protein homolog 1), also known as bovine seminal plasma protein homolog 1, bovine seminal plasma protein-like 1 or Gm767, is a 133 amino acid protein that belongs to the seminal plasma protein family. BSPH1 is a secreted protein, located only in epididymis. The gene encoding BSPH1 maps to human chromosome 19q13.32.

REFERENCES

1. Moreau, R., Thérien, I., Lazure, C. and Manjunath, P. 1998. Type II domains of BSP-A1/-A2 proteins: binding properties, lipid efflux, and sperm capacitation potential. Biochem. Biophys. Res. Commun. 246: 148-154.
2. Manjunath, P. and Thérien, I. 2002. Role of seminal plasma phospholipid-binding proteins in sperm membrane lipid modification that occurs during capacitation. J. Reprod. Immunol. 53: 109-119.
3. Fan, J., Lefebvre, J. and Manjunath, P. 2006. Bovine seminal plasma proteins and their relatives: A new expanding superfamily in mammals. Gene 375: 63-74.
4. Ekhlasi-Hundrieser, M., Schäfer, B., Philipp, U., Kuiper, H., Leeb, T., Mehta, M., Kirchhoff, C. and Töpfer-Petersen, E. 2007. Sperm-binding fibronectin type II-module proteins are genetically linked and functionally related. Gene 392: 253-265.
5. Lefebvre, J., Fan, J., Chevalier, S., Sullivan, R., Carmona, E. and Manjunath, P. 2007. Genomic structure and tissue-specific expression of human and mouse genes encoding homologues of the major bovine seminal plasma proteins. Mol. Hum. Reprod. 13: 45-53.

CHROMOSOMAL LOCATION

Genetic locus: Bsph1 (mouse) mapping to 7 A1.

PRODUCT

BSPH1 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 BSPH1 shRNA Plasmid (m): sc-141763-SH and BSPH1 shRNA (m) Lentiviral Particles: sc-141763-V as alternate gene silencing products.

For independent verification of BSPH1 (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-141763A, sc-141763B and sc-141763C.

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

BSPH1 siRNA (m) is recommended for the inhibition of BSPH1 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 BSPH1 gene expression knockdown using RT-PCR Primer: BSPH1 (m)-PR: sc-141763-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.