

# Semenogelin-1 siRNA (h): sc-44416

## BACKGROUND

Semenogelin, secreted high molecular weight seminal vesicle (HMV-SC) proteins, are the predominant protein found in semen. Semenogelin-1 and Semenogelin-2 are digested by PSA (prostate-specific antigen) in semen which leads to liquefaction and release of motile spermatozoa. Semenogelin-1 is a natural substrate of PSA. The Semenogelin precursor is processed to produce  $\alpha$ -inhibin 31 and  $\alpha$ -inhibin 92 active peptides. Semenogelin is involved in the formation of the gel matrix that encases ejaculated spermatozoa. Fragments of semenogelin and/or fragments of the related proteins contribute to sperm movement activation. Semenogelin can form a complex with Eppin, an epididymal protease inhibitor. This complex of Eppin and Semenogelin can provide antimicrobial activity for spermatozoa. It can also provide for the preparation and survival of spermatozoa for fertility in the female reproductive tract. The genes encoding the two Semenogelin proteins are found in a cluster on chromosome 20.

## REFERENCES

1. Dorus, S., et al. 2004. Rate of molecular evolution of the seminal protein gene SEMG2 correlates with levels of female promiscuity. *Nat. Genet.* 36: 1326-1329.
2. Furutani, Y., et al. 2004. Androgen-dependent expression, gene structure, and molecular evolution of Guinea pig caltrin II, a WAP-motif protein. *Biol. Reprod.* 71: 1583-1590.
3. Lwaleed, B.A., et al. 2005. Quantitation of seminal factor IX and factor IXa in fertile, nonfertile, and vasectomy subjects: a step closer toward identifying a functional clotting system in human semen. *J. Androl.* 26: 146-152.
4. Volkel, T., et al. 2005. Engineering of human coagulation factor x variants activated by prostate-specific antigen. *Mol. Biotechnol.* 29: 19-30.
5. Wang, Z., et al. 2005. Association of eppin with semenogelin on human spermatozoa. *Biol. Reprod.* 72: 1064-1070.
6. Jonsson, M., et al. 2005. Semenogelins I and II bind zinc and regulate the activity of prostate-specific antigen. *Biochem. J.* 387: 447-453.

## CHROMOSOMAL LOCATION

Genetic locus: SEMG1 (human) mapping to 20q13.12.

## PRODUCT

Semenogelin-1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Semenogelin-1 shRNA Plasmid (h): sc-44416-SH and Semenogelin-1 shRNA (h) Lentiviral Particles: sc-44416-V as alternate gene silencing products.

For independent verification of Semenogelin-1 (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-44416A, sc-44416B and sc-44416C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Semenogelin-1 siRNA (h) is recommended for the inhibition of Semenogelin-1 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  $\mu$ M in 66  $\mu$ l. 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

Semenogelin-1 (G-1): sc-365939 is recommended as a control antibody for monitoring of Semenogelin-1 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Semenogelin-1 gene expression knockdown using RT-PCR Primer: Semenogelin-1 (h)-PR: sc-44416-PR (20  $\mu$ l). 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.