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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Acrosin siRNA (h): sc-45604

## BACKGROUND

Acrosin, a member of the peptidase S1 family, is a major protease present in the acrosome of mature mammalian spermatozoa. Acrosin is a typical serine proteinase with trypsin-like cleavage specificity. The zymogen form, Proacrosin, is the precursor of Acrosin synthesized only in the postmeiotic stages of spermatogenesis. The active enzyme functions in the lysis of the zona pellucida, allowing the penetration of sperm through the innermost glycoprotein layers of the ovum.

## REFERENCES

1. Peknicova, J., et al. 1990. Monoclonal antibodies against boar acrosomal antigens labelling undamaged acrosomes of spermatozoa in immunofluorescence test. *Andrologia* 22: 427-435.
2. Moos, J., et al. 1993. Protein-protein interactions controlling Acrosin release and solubilization during the boar sperm acrosome reaction. *Biol. Reprod.* 49: 408-415.
3. Wang, H., et al. 2004. Novel role for a sterol response element binding protein in directing spermatogenic cell-specific gene expression. *Mol. Cell. Biol.* 24:10681-10688.
4. Peknicova, J., et al. 2001. Monoclonal antibodies to intra-acrosomal proteins inhibit gamete binding *in vitro*. *Theriogenology* 56: 211-23.
5. Chaudhury, K., et al. 2004. Studies on the membrane integrity of human sperm treated with a new injectable male contraceptive. *Hum. Reprod.* 19: 1826-1830.
6. Pyoung, I. and Yi, L.S. 2004. Molecular characterization of the 32 kDa boar sperm protease. *Mol. Reprod. Dev.* 68: 354-258.
7. Zalata, A.A., et al. 2004. Relationship between Acrosin activity of human spermatozoa and oxidative stress. *Asian J. Androl.* 6: 313-318.
8. Langlois, M.R., et al. 2005. Discrepancy between sperm Acrosin activity and sperm morphology: significance for fertilization *in vitro*. *Clin. Chim. Acta* 351: 121-129.
9. Chaudhury, K., et al. 2005. Acrosin activity as a potential marker for sperm membrane characteristics in unexplained male infertility. *Fertil. Steril.* 83: 104-109.

## CHROMOSOMAL LOCATION

Genetic locus: ACR (human) mapping to 22q13.33.

## PRODUCT

Acrosin 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 Acrosin shRNA Plasmid (h): sc-45604-SH and Acrosin shRNA (h) Lentiviral Particles: sc-45604-V as alternate gene silencing products.

For independent verification of Acrosin (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-45604A, sc-45604B and sc-45604C.

## 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

Acrosin siRNA (h) is recommended for the inhibition of Acrosin 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Acrosin gene expression knockdown using RT-PCR Primer: Acrosin (h)-PR: sc-45604-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.