SANTA CRUZ BIOTECHNOLOGY, INC.

# IZUMO1 siRNA (h): sc-75351

## BACKGROUND

IZUMO1 is a 350 amino acid protein named after a Japanese shrine to marriage. IZUMO1 is sperm-specific, and can only be observed on the sperm surface after the acrosome reaction. The acrosome reaction is where the membrane surrounding the acrosome of the sperm fuses with the plasma membrane of the egg, thereby exposing surface antigens and numerous enzymes that are required to penetrate the plasma membrane and allow fertilization to occur. Lack of IZUMO1 in males, due to homozygous mutation in the gene that encodes IZUMO1, results in sterility due to an inability to penetrate the plasma membrane of the egg. IZUMO1 is expressed as three isoforms produced by alternative splicing and contains one Ig-like (immunoglobulin-like) C2-type domain.

## REFERENCES


1. Inoue, N., et al. 2005. The immunoglobulin superfamily protein Izumo is required for sperm to fuse with eggs. Nature 434: 234-238.
2. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609278. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Hayasaka, S., et al. 2007. Positive expression of the immunoglobulin superfamily protein IZUMO on human sperm of severely infertile male patients. Fertil. Steril. 88: 214-216.
4. Yamashita, M., et al. 2007. Acrosome reaction of mouse epididymal sperm on oocyte zona pellucida. J. Reprod. Dev. 53: 255-262.
5. Inoue, N., et al. 2008. Putative sperm fusion protein IZUMO and the role of N-glycosylation. Biochem. Biophys. Res. Commun. 377: 910-914.
6. Granados-Gonzalez, V., et al. 2008. Preliminary study on the role of the human IZUMO gene in oocyte-spermatozoa fusion failure. Fertil. Steril. 90: 1246-1248.


## CHROMOSOMAL LOCATION

Genetic locus: IZUMO1 (human) mapping to 19q13.33.

## PRODUCT

IZUMO1 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 IZUMO1 shRNA Plasmid (h): sc-75351-SH and IZUMO1 shRNA (h) Lentiviral Particles: sc-75351-V as alternate gene silencing products.

For independent verification of IZUMO1 (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-75351A, sc-75351B and sc-75351C.

## 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

IZUMO1 siRNA (h) is recommended for the inhibition of IZUMO1 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IZUMO1 gene expression knockdown using RT-PCR Primer: IZUMO1 (h)-PR: sc-75351-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.