SANTA CRUZ BIOTECHNOLOGY, INC.

CatSperδ siRNA (h): sc-97656

BACKGROUND

CatSpers (cation channel, sperm associated proteins) are ion transport proteins located on the surface of sperm cells in the principal piece of the sperm tail. Vital to sperm motility, fertilization and cAMP-mediated calcium influx in sperm, CatSpers contain a single, six-transmembrane-spanning segment and exhibit the voltage-dependent Ca^{2+} channel four-repeat structure. CatSper proteins are believed to assemble into a heterotetrameric complex, forming an alkalinization-activated Ca^{2+}-selective channel. Mutations in any of the genes encoding CatSper family proteins can result in male infertility. CatSperδ (cation channel sperm-associated protein subunit δ) is a 798 amino acid single-pass type I membrane protein that is located in the principal piece of the sperm tail. CatSperδ exists as two alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 19.

REFERENCES

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3. Li, H.G., Ding, X.F., Liao, A.H., Kong, X.B. and Xiong, C.L. 2007. Expression of CatSper family transcripts in the mouse testis during post-natal development and human ejaculated spermatozoa: relationship to sperm motility. Mol. Hum. Reprod. 13: 299-306.
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5. Suarez, S.S., Marquez, B., Harris, T.P. and Schimenti, J.C. 2007. Different regulatory systems operate in the midpiece and principal piece of the mammalian sperm flagellum. Soc. Reprod. Fertil. Suppl. 65: 331-334.
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CHROMOSOMAL LOCATION

Genetic locus: CATSPERD (human) mapping to 19p13.3.

PRODUCT

CatSperδ 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 CatSperδ shRNA Plasmid (h): sc-97656-SH and CatSperδ shRNA (h) Lentiviral Particles: sc-97656-V as alternate gene silencing products.

For independent verification of CatSperδ (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-97656A, sc-97656B and sc-97656C.

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

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

GENE EXPRESSION MONITORING

CatSperδ (A-7): sc-393749 is recommended as a control antibody for monitoring of CatSperδ 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 CatSperδ gene expression knockdown using RT-PCR Primer: CatSperδ (h)-PR: sc-97656-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.

PROTOCOLS

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