SANTA CRUZ BIOTECHNOLOGY, INC.

CapZ-α3 siRNA (h): sc-95744

BACKGROUND

The F-Actin family of capping proteins includes CapZ-α1, CapZ-α2, CapZ-α3 and CapZ-β3, all of which function in a calcium-dependent manner and bind to the fast growing barbed end of Actin filaments, thereby blocking protein exchange at these ends. CapZ-α3 (capping protein (actin filament) muscle Z-line, α 3), also known as Gsg3 or CAPPA3, is a 299 amino acid member of the F-Actin capping protein family. Expressed primarily in sperm and testis and localizing specifically to the neck region of ejaculated sperm, CapZ-α3 is thought to play an important role in male fertility, specifically influencing sperm architecture and spermatid morphogenesis. CapZ-α3 may exist as a heterodimer of α and β subunits and shares 91% sequence similarity with its mouse counterpart, suggesting a conserved role between species.

REFERENCES

1. Tanaka, H., et al. 1994. Isolation and characterization of cDNA clones specifically expressed in testicular germ cells. FEBS Lett. 355: 4-10.
2. Hurst, S., et al. 1998. Expression of a testis-specific putative actin-capping protein associated with the developing acrosome during rat spermiogenesis. Mol. Reprod. Dev. 49: 81-91.
3. Yoshimura, Y., et al. 1999. Genomic analysis of male germ cell-specific actin capping protein α. Gene 237: 193-199.
4. Miyagawa, Y., et al. 2002. Molecular cloning and characterization of the human orthologue of male germ cell-specific actin capping protein α3 (cpα3). Mol. Hum. Reprod. 8: 531-539.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608722. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. L'Hôte, D., et al. 2007. Centimorgan-range one-step mapping of fertility traits using interspecific recombinant congenic mice. Genetics 176: 1907-1921.

CHROMOSOMAL LOCATION

Genetic locus: CAPZA3 (human) mapping to 12p12.3.

PRODUCT

CapZ-α3 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 CapZ-α3 shRNA Plasmid (h): sc-95744-SH and CapZ-α3 shRNA (h) Lentiviral Particles: sc-95744-V as alternate gene silencing products.

For independent verification of CapZ-α3 (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-95744A, sc-95744B and sc-95744C.

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

CapZ-α3 siRNA (h) is recommended for the inhibition of CapZ-α3 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

CapZ-α3 (MB120): sc-130480 is recommended as a control antibody for monitoring of CapZ-α3 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 CapZ-α3 gene expression knockdown using RT-PCR Primer: CapZ-α3 (h)-PR: sc-95744-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.