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CapZ- α 3 siRNA (m): sc-142008

BACKGROUND

The F-Actin family of capping proteins includes CapZ- α 1, CapZ- α 2, CapZ- α 3 and CapZ- β 3, 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- α 3 (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- α 3 is thought to play an important role in male fertility, specifically influencing sperm architecture and spermatid morphogenesis. CapZ- α 3 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 α 3 (cp α 3). *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'Hote, 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 (mouse) mapping to 6 G2.

PRODUCT

CapZ- α 3 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CapZ- α 3 shRNA Plasmid (m): sc-142008-SH and CapZ- α 3 shRNA (m) Lentiviral Particles: sc-142008-V as alternate gene silencing products.

For independent verification of CapZ- α 3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-142008A, sc-142008B and sc-142008C.

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

APPLICATIONS

CapZ- α 3 siRNA (m) is recommended for the inhibition of CapZ- α 3 expression in mouse 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 μ M in 66 μ 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

CapZ- α 3 (MB120): sc-130480 is recommended as a control antibody for monitoring of CapZ- α 3 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 κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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- α 3 gene expression knockdown using RT-PCR Primer: CapZ- α 3 (m)-PR: sc-142008-PR (20 μ 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.