SANTA CRUZ BIOTECHNOLOGY, INC.

Protamine 1 siRNA (h): sc-38203

BACKGROUND

Protamines are small, arginine-rich (basic) nuclear proteins that mediate normal sperm head condensation and DNA stabilization. Mice, humans and certain fish have two or more different protamines, whereas the sperm of bull, boar, rat, rabbit, guinea pig and ram have one form of protamine. The majority of DNA in human sperm is bound to protamines, with only a small proportion of DNA bound to histones in a way similar to active chromatin. The retention of histone association with sperm DNA with respect to protamine association to sperm DNA can change within as little as 400 bp of DNA, suggesting that there is fine control over haploid DNA organization. Protamines eventually replace histones late in the haploid phase of spermatogenesis. The human Protamine 1 gene maps to chromosome 16p13.13 and encodes a 51 amino acid protein. The human Protamine 2 gene maps to chromosome 16p13.13 and encodes a 102 amino acid protein.

REFERENCES

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4. Giorgini, F., et al. 2001. MSY2 and MSY4 bind a conserved sequence in the 3' untranslated region of Protamine 1 mRNA *in vitro* and *in vivo*. Mol. Cell. Biol. 21: 7010-7019.
5. Murase, K., et al. 2001. Protamine augments stretch induced calcium increase in vascular endothelium. Br. J. Pharmacol. 134: 1403-1410.
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7. Mengual, L., et al. 2003. Marked differences in protamine content and P1/P2 ratios in sperm cells from percoll fractions between patients and controls. J. Androl. 24: 438-447.
8. Brewer, L., et al. 2003. Dynamics of Protamine 1 binding to single DNA molecules. J. Biol. Chem. 278: 42403-42408.
9. Mylonis, I., et al. 2004. Temporal association of Protamine 1 with the inner nuclear membrane protein lamin B receptor during spermiogenesis. J. Biol. Chem. 279: 11626-11631.

CHROMOSOMAL LOCATION

Genetic locus: PRM1 (human) mapping to 16p13.13.

PROTOCOLS

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

PRODUCT

Protamine 1 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 Protamine 1 shRNA Plasmid (h): sc-38203-SH and Protamine 1 shRNA (h) Lentiviral Particles: sc-38203-V as alternate gene silencing products.

For independent verification of Protamine 1 (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-38203A, sc-38203B and sc-38203C.

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

Protamine 1 siRNA (h) is recommended for the inhibition of Protamine 1 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.

RESEARCH USE

For research use only, not for use in diagnostic procedures.