SANTA CRUZ BIOTECHNOLOGY, INC.

gametogenetin siRNA (h): sc-97797

BACKGROUND

Gametogenetin, also known as GGN, is a 652 amino acid protein that is primarily expressed in testis and ovary. Interacting with POG (proliferation of germ cells), GGNBP1 and LCRG1, gametogenetin is likely involved in spermatogenesis. Gametogenetin exists as three alternatively spliced isoforms commonly known as gametogenetin protein 1 (GGN1), gametogenetin protein 2 (GGN2) and gametogenetin protein 3 (GGN3), which localize to nuclear membrane, cytoplasm and nucleus/nucleoli, respectively. GGN1 contains two transmembrane domains in its N-terminal half and 2 C-terminal arginine- and lysine-rich nucleolar targeting sequences. GGN1 and GGN3 are likely linked to germ cell development and both GGN1 and GGN2 may be involved in cell trafficking.

REFERENCES

1. Lu, B. and Bishop, C.E. 2003. Mouse GGN1 and GGN3, two germ cell-specific proteins from the single gene Ggn, interact with mouse POG and play a role in spermatogenesis. J. Biol. Chem. 278: 16289-16296.
2. Zhang, J., Wang, Y., Zhou, Y., Cao, Z., Huang, P. and Lu, B. 2005. Yeast two-hybrid screens imply that GGNBP1, GGNBP2 and OAZ3 are potential interaction partners of testicular germ cell-specific protein GGN1. FEBS Lett. 579: 559-566.
3. Zhou, Y., Zhao, Q., Bishop, C.E., Huang, P. and Lu, B. 2005. Identification and characterization of a novel testicular germ cell-specific gene GGNBP1. Mol. Reprod. Dev. 70: 301-307.
4. Zhao, Q., Zhou, Y., Cao, Z., Zhu, H., Huang, P. and Lu, B. 2005. Germ-cell specific protein gametogenetin protein 2 (GGN2), expression in the testis, and association with intracellular membrane. Mol. Reprod. Dev. 72: 31-39.
5. Jamsai, D., Bianco, D.M., Smith, S.J., Merriner, D.J., Ly-Huynh, J.D., Herlihy, A., Niranjan, B., Gibbs, G.M. and O'Bryan, M.K. 2008. Characterization of gametogenetin 1 (GGN1) and its potential role in male fertility through the interaction with the ion channel regulator, cysteine-rich secretory protein 2 (CRISP2) in the sperm tail. Reproduction 135: 751-759.
6. Jamsai, D., Sarraj, M.A., Merriner, D.J., Drummond, A.E., Jones, K.T., McLachlan, R.I. and O'Bryan, M.K. 2010. GGN1 in the testis and ovary and its variance within the Australian fertile and infertile male population. Int. J. Androl. 34: 624-632.

CHROMOSOMAL LOCATION

Genetic locus: GGN (human) mapping to 19q13.2.

PRODUCT

gametogenetin siRNA (h) is a target-specific 19-25 nt siRNA 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 gametogenetin shRNA Plasmid (h): sc-97797-SH and gametogenetin shRNA (h) Lentiviral Particles: sc-97797-V as alternate gene silencing products.

RESEARCH USE

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

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

gametogenetin siRNA (h) is recommended for the inhibition of gametogenetin 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 gametogenetin gene expression knockdown using RT-PCR Primer: gametogenetin (h)-PR: sc-97797-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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