

THEG siRNA (m): sc-154252

BACKGROUND

THEG (testicular haploid expressed gene protein), also known as CT56 (cancer/testis antigen 56), is a 379 amino acid nuclear protein that contains six THEG repeats. THEG exists as two alternatively spliced isoforms and interacts with TCP-1 ϵ . Localizing to testis, THEG may be involved, but not essential, in spermatogenesis. The gene that encodes THEG contains just over 14,000 bases and maps to human chromosome 19p13.3. Consisting of around 63 million bases with more than 1,400 genes, chromosome 19 makes up over 2% of the human genome. Chromosome 19 includes a diversity of interesting genes and is recognized for having the greatest gene density of the human chromosomes. It is the genetic home for a number of immunoglobulin superfamily members including the killer cell and leukocyte Ig-like receptors, a number of ICAMs, the CEACAM and PSG family, and Fc α receptors. Key genes for eye color and hair color also map to chromosome 19. Peutz-Jeghers syndrome, spinocerebellar ataxia type 6, the stroke disorder CADASIL, hypercholesterolemia and Insulin-dependent diabetes have been linked to chromosome 19.

REFERENCES

1. Wang, L., Lin, S.H., Wu, W.G., Kemp, B.L., Walsh, G.L., Hong, W.K. and Mao, L. 2000. C-CAM1, a candidate tumor suppressor gene, is abnormally expressed in primary lung cancers. *Clin. Cancer Res.* 6: 2988-2993.
2. Mannan, A., Lücke, K., Dixkens, C., Neesen, J., Kämper, M., Engel, W. and Burfeind, P. 2000. Alternative splicing, chromosome assignment and sub-cellular localization of the testicular haploid expressed gene (THEG). *Cytogenet. Cell Genet.* 91: 171-179.
3. Yanaka, N., Kobayashi, K., Wakimoto, K., Yamada, E., Imahie, H., Imai, Y. and Mori, C. 2000. Insertional mutation of the murine kisimo locus caused a defect in spermatogenesis. *J. Biol. Chem.* 275: 14791-14794.
4. Trowsdale, J., Barten, R., Haude, A., Stewart, C.A., Beck, S. and Wilson, M.J. 2001. The genomic context of natural killer receptor extended gene families. *Immunol. Rev.* 181: 20-38.
5. Mannan, A.U., Nayernia, K., Mueller, C., Burfeind, P., Adham, I.M. and Engel, W. 2003. Male mice lacking the Theg (testicular haploid expressed gene) protein undergo normal spermatogenesis and are fertile. *Biol. Reprod.* 69: 788-796.
6. Le Meur, N., Martin, C., Saugier-Verber, P., Joly, G., Lemoine, F., Moirrot, H., Rossi, A., Bachy, B., Cabot, A., Joly, P. and Frébourg, T. 2004. Complete germline deletion of the STK11 gene in a family with Peutz-Jeghers syndrome. *Eur. J. Hum. Genet.* 12: 415-418.
7. Leeb, T. and Müller, M. 2004. Comparative human-mouse-rat sequence analysis of the ICAM gene cluster on HSA 19p13.2 and a 185-kb porcine region from SSC 2q. *Gene* 343: 239-244.
8. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609503. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
9. Barrow, A.D. and Trowsdale, J. 2008. The extended human leukocyte receptor complex: diverse ways of modulating immune responses. *Immunol. Rev.* 224: 98-123.

CHROMOSOMAL LOCATION

Genetic locus: Theg (mouse) mapping to 10 C1.

PRODUCT

THEG siRNA (m) is a pool of 2 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 THEG shRNA Plasmid (m): sc-154252-SH and THEG shRNA (m) Lentiviral Particles: sc-154252-V as alternate gene silencing products.

For independent verification of THEG (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-154252A and sc-154252B.

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

THEG siRNA (m) is recommended for the inhibition of THEG 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor THEG gene expression knockdown using RT-PCR Primer: THEG (m)-PR: sc-154252-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.

PROTOCOLS

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