SANTA CRUZ BIOTECHNOLOGY, INC.

UTP14C siRNA (h): sc-76880

BACKGROUND

UTP14C (UTP14, U3 small nucleolar ribonucleoprotein), also known as UTP14B, is a 766 amino acid protein that localizes to the nucleolus and belongs to the UTP14 family. Expressed in testicular tissue, UTP14C functions as an essential component of spermatogenesis and is specifically required for ribosome biogenesis and protein synthesis during male meiosis. UTP14A, a related protein, may also be required for ribosome biogenesis, but not necessarily in a male-specific manner. The gene encoding UTP14C maps to human chromosome 13, which houses over 400 genes, such as BRCA2 and RB1, and comprises nearly 4% of the human genome. As with most chromosomes, polysomy of part or all of chromosome 13 is deleterious to development and decreases the odds of survival. Trisomy 13, also known as Patau syndrome, is deadly and the few who survive past one year suffer from permanent neurologic defects, difficulty eating and vulnerability to serious respiratory infections.

REFERENCES

1. Bradley, J., Baltus, A., Skaletsky, H., Royce-Tolland, M., Dewar, K. and Page, D.C. 2004. An X-to-autosome retrogene is required for spermatogenesis in mice. Nat. Genet. 36: 872-876.
2. Rohozinski, J. and Bishop, C.E. 2004. The mouse juvenile spermatogonial depletion (jsd) phenotype is due to a mutation in the X-derived retrogene, mUtp14b. Proc. Natl. Acad. Sci. USA 101: 11695-11700.
3. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608969. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Rohozinski, J., Lamb, D.J. and Bishop, C.E. 2006. UTP14c is a recently acquired retrogene associated with spermatogenesis and fertility in man. Biol. Reprod. 74: 644-651.
5. Shetty, G., Weng, C.C., Porter, K.L., Zhang, Z., Pakarinen, P., Kumar, T.R. and Meistrich, M.L. 2006. Spermatogonial differentiation in juvenile spermatogonial depletion (jsd) mice with androgen receptor or follicle-stimulating hormone mutations. Endocrinology 147: 3563-3570.

CHROMOSOMAL LOCATION

Genetic locus: UTP14C (human) mapping to 13q14.3.

PRODUCT

UTP14C 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 UTP14C shRNA Plasmid (h): sc-76880-SH and UTP14C shRNA (h) Lentiviral Particles: sc-76880-V as alternate gene silencing products.

For independent verification of UTP14C (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-76880A, sc-76880B and sc-76880C.

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

UTP14C siRNA (h) is recommended for the inhibition of UTP14C 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

UTP14C (H-1): sc-365603 is recommended as a control antibody for monitoring of UTP14C 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 UTP14C gene expression knockdown using RT-PCR Primer: UTP14C (h)-PR: sc-76880-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.