SANTA CRUZ BIOTECHNOLOGY, INC.

UTP14A siRNA (h): sc-106686

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

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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/
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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.
6. Zhao, M., Rohozinski, J., Sharma, M., Ju, J., Braun, R.E., Bishop, C.E. and Meistrich, M.L. 2007. UTP14B: a unique retrogene within a gene that has acquired multiple promoters and a specific function in spermatogenesis. Dev. Biol. 304: 848-859.
7. Rohozinski, J., Anderson, M.L., Broaddus, R.E., Edwards, C.L. and Bishop, C.E. 2009. Spermatogenesis associated retrogenes are expressed in the human ovary and ovarian cancers. PLoS ONE 4: e5064.

CHROMOSOMAL LOCATION

Genetic locus: UTP14A (human) mapping to Xq26.1.

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.

PRODUCT

UTP14A 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 UTP14A shRNA Plasmid (h): sc-106686-SH and UTP14A shRNA (h) Lentiviral Particles: sc-106686-V as alternate gene silencing products.

For independent verification of UTP14A (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-106686A, sc-106686B and sc-106686C.

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

UTP14A siRNA (h) is recommended for the inhibition of UTP14A 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 UTP14A gene expression knockdown using RT-PCR Primer: UTP14A (h)-PR: sc-106686-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.