SANTA CRUZ BIOTECHNOLOGY, INC.

TDRD5 siRNA (h): sc-78974

BACKGROUND

TDRD5 (Tudor domain-containing protein 5) is a 981 amino acid cytoplasmic protein that belongs to the TDRD5 family. Existing as two alternatively spliced isoforms, TDRD5 contains three Lotus/OST-HTH domains and one Tudor domain. Essential for germline integrity, TDRD5 is involved in repressing the mobilization of transposable elements during spermiogenesis. To carry out its job in the repression of transposable elements, TDRD5 most likely acts through the piRNA metabolic process during meiosis, which forms complexes composed of piRNA and Piwi proteins and govern the methylation and subsequent repression of transposons. TDRD5 is also thought to be necessary for chromatoid body (CB) assembly, as it localizes to CB and pi-body. The gene that encodes TDRD5 consists of nearly 100,000 bases and maps to human chromosome 1q25.2.

REFERENCES

1. Smith, J.M., Bowles, J., Wilson, M., Teasdale, R.D. and Koopman, P. 2004. Expression of the tudor-related gene Tdrd5 during development of the male germline in mice. Gene Expr. Patterns 4: 701-705.
2. Surani, M.A., Durcova-Hills, G., Hajkova, P., Hayashi, K. and Tee, W.W. 2008. Germ line, stem cells, and epigenetic reprogramming. Cold Spring Harb. Symp. Quant. Biol. 73: 9-15.
3. Chen, C., Jin, J., James, D.A., Adams-Cioaba, M.A., Park, J.G., Guo, Y., Tenaglia, E., Xu, C., Gish, G., Min, J. and Pawson, T. 2009. Mouse Piwi interactome identifies binding mechanism of Tdrkh Tudor domain to arginine methylated Miwi. Proc. Natl. Acad. Sci. USA 106: 20336-20341.
4. Callebaut, I. and Mornon, J.P. 2010. LOTUS, a new domain associated with small RNA pathways in the germline. Bioinformatics 26: 1140-1144.
5. Anantharaman, V., Zhang, D. and Aravind, L. 2010. OST-HTH: a novel predicted RNA-binding domain. Biol. Direct. 5: 13.
6. Kirino, Y., Vourekas, A., Sayed, N., de Lima Alves, F., Thomson, T., Lasko, P., Rappsilber, J., Jongens, T.A. and Mourelatos, Z. 2010. Arginine methylation of Aubergine mediates Tudor binding and germ plasm localization. RNA 16: 70-78.
7. Yabuta, Y., Ohta, H., Abe, T., Kurimoto, K., Chuma, S. and Saitou, M. 2011. TDRD5 is required for retrotransposon silencing, chromatoid body assembly, and spermiogenesis in mice. J. Cell Biol. 192: 781-795.

CHROMOSOMAL LOCATION

Genetic locus: TDRD5 (human) mapping to 1q25.2.

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

TDRD5 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 TDRD5 shRNA Plasmid (h): sc-78974-SH and TDRD5 shRNA (h) Lentiviral Particles: sc-78974-V as alternate gene silencing products.

For independent verification of TDRD5 (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-78974A, sc-78974B and sc-78974C.

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

TDRD5 siRNA (h) is recommended for the inhibition of TDRD5 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 TDRD5 gene expression knockdown using RT-PCR Primer: TDRD5 (h)-PR: sc-78974-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.