

TTC21A siRNA (m): sc-154758

BACKGROUND

The tetratricopeptide repeat (TPR) motif is a degenerate, 34 amino acid sequence found in many proteins and acts to mediate protein-protein interactions in various pathways. At the sequence level, there can be up to 16 tandem TPR repeats, each of which has a helix-turn-helix shape that stacks on other TPR repeats to achieve ligand binding specificity. TTC21A (tetratricopeptide repeat domain 21A), also known as STI2 (stress-inducible protein 2), is a 1,320 amino acid protein that is strongly expressed in testis. Belonging to the TTC21 family, TTC21A contains 19 TPR repeats and exists as 5 alternatively spliced isoforms. TTC21A is encoded by a gene located on human chromosome 3p22.2, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

REFERENCES

1. Braga, E.A., Kashuba, V.I., Maliukova, A.V., Loginov, V.I., Senchenko, V.N., Bazov, I.V., Kiselev, L.L. and Zabarovskii, E.R. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. *Mol. Biol.* 37: 194-211.
2. Tsend-Ayush, E., Grütner, F., Yue, Y., Grossmann, B., Hänsel, U., Sudbrak, R. and Haaf, T. 2004. Plasticity of human chromosome 3 during primate evolution. *Genomics* 83: 193-202.
3. Cortajarena, A.L., Kajander, T., Pan, W., Cocco, M.J. and Regan, L. 2004. Protein design to understand peptide ligand recognition by tetratricopeptide repeat proteins. *Protein Eng. Des. Sel.* 17: 399-409.
4. Cortajarena, A.L. and Regan, L. 2006. Ligand binding by TPR domains. *Protein Sci.* 15: 1193-1198.
5. Kajander, T., Cortajarena, A.L., Mochrie, S. and Regan, L. 2007. Structure and stability of designed TPR protein superhelices: unusual crystal packing and implications for natural TPR proteins. *Acta Crystallogr. D Biol. Crystallogr.* 63: 800-811.
6. Tran, P.V., Haycraft, C.J., Besschetnova, T.Y., Turbe-Doan, A., Stottmann, R.W., Herron, B.J., Chesebro, A.L., Qiu, H., Scherz, P.J., Shah, J.V., Yoder, B.K. and Beier, D.R. 2008. THM1 negatively modulates mouse sonic hedgehog signal transduction and affects retrograde intraflagellar transport in cilia. *Nat. Genet.* 40: 403-410.
7. Davis, E.E., Zhang, Q., Liu, Q., Diplas, B.H., Davey, L.M., Hartley, J., Stoetzel, C., Szymanska, K., Ramaswami, G., Logan, C.V., Muzny, D.M., Young, A.C., Wheeler, D.A., Cruz, P., et al. 2011. TTC21B contributes both causal and modifying alleles across the ciliopathy spectrum. *Nat. Genet.* 43: 189-196.

CHROMOSOMAL LOCATION

Genetic locus: Ttc21a (mouse) mapping to 9 F4.

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

TTC21A siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TTC21A shRNA Plasmid (m): sc-154758-SH and TTC21A shRNA (m) Lentiviral Particles: sc-154758-V as alternate gene silencing products.

For independent verification of TTC21A (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-154758A, sc-154758B and sc-154758C.

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

TTC21A siRNA (m) is recommended for the inhibition of TTC21A 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 TTC21A gene expression knockdown using RT-PCR Primer: TTC21A (m)-PR: sc-154758-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.