

TTC18 siRNA (h): sc-90610

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. TTC18 (tetratricopeptide repeat protein 18) is a 1121 amino acid protein containing eight TPR repeats. Existing as three possible alternatively spliced isoforms, TTC18 is encoded by a gene located on human chromosome 10. Spanning nearly 135 million base pairs, chromosome 10 makes up approximately 4.5% of total DNA in cells and encodes nearly 1,200 genes. Several protein-coding genes, including those that encode for chemokines, cadherins, excision repair proteins, early growth response factors (Egrs) and fibroblast growth receptors (FGFRs), are located on chromosome 10.

REFERENCES

1. Young, J.C., Obermann, W.M. and Hartl, F.U. 1998. Specific binding of tetratricopeptide repeat proteins to the C-terminal 12-kDa domain of Hsp90. *J. Biol. Chem.* 273: 18007-18010.
2. Marty, C., Browning, D.D. and Ye, R.D. 2003. Identification of tetratricopeptide repeat 1 as an adaptor protein that interacts with heterotrimeric G proteins and the small GTPase Ras. *Mol. Cell. Biol.* 23: 3847-3858.
3. Oh, W.K. and Song, J. 2003. Cooperative interaction of Hsp40 and TPR1 with Hsp70 reverses Hsp70-HspBp1 complex formation. *Mol. Cells* 16: 84-91.
4. 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.
5. Kaneko, A., Umeyama, T., Utena-Abe, Y., Yamagoe, S., Niimi, M. and Uehara, Y. 2006. Tcc1p, a novel protein containing the tetratricopeptide repeat motif, interacts with Tup1p to regulate morphological transition and virulence in *Candida albicans*. *Eukaryotic Cell* 5: 1894-1905.
6. Morohashi, H., Maculins, T. and Labib, K. 2009. The amino-terminal TPR domain of Dia2 tethers SCF(Dia2) to the replisome progression complex. *Curr. Biol.* 19: 1943-1949.
7. Suizu, F., Hiramaki, Y., Okumura, F., Matsuda, M., Okumura, A.J., Hirata, N., Narita, M., Kohno, T., Yokota, J., Bohgaki, M., Obuse, C., Hatakeyama, S., Obata, T. and Noguchi, M. 2009. The E3 ligase TTC3 facilitates ubiquitination and degradation of phosphorylated Akt. *Dev. Cell* 17: 800-810.
8. Lin, Z., Ho, C.W. and Grierson, D. 2009. AtTRP1 encodes a novel TPR protein that interacts with the ethylene receptor ERS1 and modulates development in *Arabidopsis*. *J. Exp. Bot.* 60: 3697-3714.
9. Zhang, Z., Roe, S.M., Diogon, M., Kong, E., El Alaoui, H. and Barford, D. 2010. Molecular structure of the N-terminal domain of the APC/C subunit Cdc27 reveals a homo-dimeric tetratricopeptide repeat architecture. *J. Mol. Biol.* 397: 1316-1328.

CHROMOSOMAL LOCATION

Genetic locus: TTC18 (human) mapping to 10q22.2.

PRODUCT

TTC18 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TTC18 shRNA Plasmid (h): sc-90610-SH and TTC18 shRNA (h) Lentiviral Particles: sc-90610-V as alternate gene silencing products.

For independent verification of TTC18 (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-90610A, sc-90610B and sc-90610C.

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

TTC18 siRNA (h) is recommended for the inhibition of TTC18 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 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 TTC18 gene expression knockdown using RT-PCR Primer: TTC18 (h)-PR: sc-90610-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.