

CCDC6 siRNA (h): sc-90423

BACKGROUND

CCDC6 (coiled-coil domain containing 6), also known as H4, PTC, TPC or TST1, is a 585 amino acid cytoskeletal protein. Expressed throughout the body, CCDC6 exists in an α helical conformation and has a leucine zipper domain through which it can fuse to PDGFR- β (platelet-derived growth factor receptor β), a protein that functions as a mitogen for mesenchyme- and glia-derived cells. Additionally, CCDC6 is a fusion partner of Ret (RET receptor tyrosine kinase), a proto-oncogene that is involved in GDNF signaling. These fusion products are not present in normal cells, but are the result of a chromosomal rearrangement in the CCDC6 gene which renders the CCDC6 protein susceptible to fusion events. When CCDC6 is fused to either PDGFR- β or Ret, further chromosomal rearrangements may occur that can lead to various carcinomas including human papillary thyroid carcinoma, chronic myelomonocytic leukemia and mammary and cutaneous gland tumors.

REFERENCES

1. Grieco, M., et al. 1994. Cloning and characterization of H4 (D10S170), a gene involved in Ret rearrangements *in vivo*. *Oncogene* 9: 2531-2535.
2. Tong, Q., et al. 1995. Characterization of the promoter region and oligomerization domain of H4 (D10S170), a gene frequently rearranged with the Ret proto-oncogene. *Oncogene* 10: 1781-1787.
3. Portella, G., et al. 1996. Development of mammary and cutaneous gland tumors in transgenic mice carrying the Ret/PTC1 oncogene. *Oncogene* 13: 2021-2026.
4. Tong, Q., et al. 1997. Leucine zipper-mediated dimerization is essential for the PTC1 oncogenic activity. *J. Biol. Chem.* 272: 9043-9047.
5. Schwaller, J., et al. 2001. H4 (D10S170), a gene frequently rearranged in papillary thyroid carcinoma, is fused to the platelet-derived growth factor receptor β gene in atypical chronic myeloid leukemia with t(5;10)(q33;q22). *Blood* 97: 3910-3918.
6. Puxeddu, E., et al. 2005. Characterization of novel non-clonal intrachromosomal rearrangements between the H4 and PTEN genes (H4/PTEN) in human thyroid cell lines and papillary thyroid cancer specimens. *Mutat. Res.* 570: 17-32.

CHROMOSOMAL LOCATION

Genetic locus: CCDC6 (human) mapping to 10q21.2.

PRODUCT

CCDC6 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 CCDC6 shRNA Plasmid (h): sc-90423-SH and CCDC6 shRNA (h) Lentiviral Particles: sc-90423-V as alternate gene silencing products.

For independent verification of CCDC6 (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-90423A, sc-90423B and sc-90423C.

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

CCDC6 siRNA (h) is recommended for the inhibition of CCDC6 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.

GENE EXPRESSION MONITORING

CCDC6 (Q-23): sc-100309 is recommended as a control antibody for monitoring of CCDC6 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 CCDC6 gene expression knockdown using RT-PCR Primer: CCDC6 (h)-PR: sc-90423-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.