CCDC6 (E-16): sc-103422



The Power to Question

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., Cerrato, A., Santoro, M., Fusco, A., Melillo, R.M. and Vecchio, G. 1994. Cloning and characterization of H4 (D10S170), a gene involved in Ret rearrangements *in vivo*. Oncogene 9: 2531-2535.
- 2. Tong, Q., Li, Y., Smanik, P.A., Fithian, L.J., Xing, S., Mazzaferri, E.L. and Jhiang, S.M. 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.
- Portella, G., Salvatore, D., Botti, G., Cerrato, A., Zhang, L., Mineo, A., Chiappetta, G., Santelli, G., Pozzi, L., Vecchio, G., Fusco, A. and Santoro, M. 1996. Development of mammary and cutaneous gland tumors in transgenic mice carrying the Ret/PTC1 oncogene. Oncogene 13: 2021-2026.
- Tong, Q., Xing, S. and Jhiang, S.M. 1997. Leucine zipper-mediated dimerization is essential for the PTC1 oncogenic activity. J. Biol. Chem. 272: 9043-9047.
- Schwaller, J., Anastasiadou, E., Cain, D., Kutok, J., Wojiski, S., Williams, I.R., LaStarza, R., Crescenzi, B., Sternberg, D.W., Andreasson, P., Schiavo, R., Siena, S., Mecucci, C. and Gilliland, D.G. 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.
- Puxeddu, E., Zhao, G., Stringer, J.R., Medvedovic, M., Moretti, S. and Fagin, J.A. 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.
- Merolla, F., Pentimalli, F., Pacelli, R., Vecchio, G., Fusco, A., Grieco, M. and Celetti, A. 2007. Involvement of H4(D10S170) protein in ATM-dependent response to DNA damage. Oncogene 26: 6167-6175.
- Drechsler, M., Hildebrandt, B., Kündgen, A., Germing, U. and Royer-Pokora, B. 2007. Fusion of H4/D10S170 to PDGFRβ in a patient with chronic myelomonocytic leukemia and long-term responsiveness to imatinib. Ann. Hematol. 86: 353-354.

CHROMOSOMAL LOCATION

Genetic locus: CCDC6 (human) mapping to 10q21.2; Ccdc6 (mouse) mapping to 10 B5.3.

SOURCE

CCDC6 (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CCDC6 of human origin.

PRODUCT

Each vial contains 200 μg IgG in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103422 P, ($100 \mu \text{g}$ peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CCDC6 (E-16) is recommended for detection of CCDC6 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CCDC6 siRNA (h): sc-90423, CCDC6 siRNA (m): sc-142125, CCDC6 shRNA Plasmid (h): sc-90423-SH, CCDC6 shRNA Plasmid (m): sc-142125-SH, CCDC6 shRNA (h) Lentiviral Particles: sc-90423-V, and CCDC6 shRNA (m) Lentiviral Particles: sc-142125-V.

Molecular Weight of CCDC6: 66 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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