SANTA CRUZ BIOTECHNOLOGY, INC.

TC1 siRNA (h): sc-77472

BACKGROUND

TC1 (thyroid cancer protein 1), whose alternative names include C8orf4 or MGC22806, is a natively disordered and novel tumorigenic protein consisting of 106 amino acids that is known to associate with thyroid, gastric, and breast cancers. TC1 is ubiquitously expressed and may enhance the aggressive behavior of cancers by acting as an upstream regulator involved in positive regulation of the Wnt/β-catenin signaling pathway. Upregulation of TC1 by mitogens and the ERK1/2 signaling pathway promotes the G_1- to S-phase transition of the cell cycle. TC1 also plays a role as a novel heat shock response regulator that is upregulated by cellular stresses and heat shock. The gene encoding TC1 maps to human chromosome 8, which consists of nearly 146 million base pairs, encodes over 800 genes and is associated with a variety of diseases and malignancies including Schizophrenia, bipolar disorder, Trisomy 8, Pfeiffer syndrome and congenital hypothyroidism.

REFERENCES

1. Sunde, M., et al. 2004. TC-1 is a novel tumorigenic and natively disordered protein associated with thyroid cancer. Cancer Res. 64: 2766-2773.
2. Friedman, J.B., et al. 2004. C8orf4 is a transforming growth factor B induced transcript downregulated in metastatic colon cancer. Int. J. Cancer 111: 72-75.
3. Jung, Y., et al. 2006. TC1 (C8orf4) enhances the Wnt/β-catenin pathway by relieving antagonistic activity of Chibby. Cancer Res. 66: 723-728.
4. Kim, B., et al. 2006. TC1(C8orf4) correlates with Wnt/β-catenin target genes and aggressive biological behavior in gastric cancer. Clin. Cancer Res. 12: 3541-3548.
5. Agrelo, R., et al. 2006. Epigenetic inactivation of the premature aging Werner syndrome gene in human cancer. Proc. Natl. Acad. Sci. USA 103: 8822-8827.
6. Park, J., et al. 2007. TC1 (C8orf4) is upregulated by cellular stress and mediates heat shock response. Biochem. Biophys. Res. Commun. 360: 447-452.
7. Yang, Z.Q., et al. 2007. Transforming properties of TC-1 in human breast cancer: interaction with FGFR2 and β-catenin signaling pathways. Int. J. Cancer 121: 1265-1273.

CHROMOSOMAL LOCATION

Genetic locus: C8orf4 (human) mapping to 8p11.21.

PRODUCT

TC1 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 TC1 shRNA Plasmid (h): sc-77472-SH and TC1 shRNA (h) Lentiviral Particles: sc-77472-V as alternate gene silencing products.

For independent verification of TC1 (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-77472A, sc-77472B and sc-77472C.

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

TC1 siRNA (h) is recommended for the inhibition of TC1 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 TC1 gene expression knockdown using RT-PCR Primer: TC1 (h)-PR: sc-77472-PR (20 µl). 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.