SANTA CRUZ BIOTECHNOLOGY, INC.

TET1 siRNA (h): sc-90457

BACKGROUND

TET1 (tet oncogene 1), also known as LCX or CXXC6, is a 2,136 amino acid protein that localizes to the nucleus and contains one CXXC-type zinc finger. Expressed in adult ovary, thymus and skeletal muscle and also present in fetal lung, heart and brain, TET1 is thought to play a role in the development of fetal organs and may also be involvement in the pathoegenesis and metastasis of acute myeloid leukemia (AML). The gene encoding TET1 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie Tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromatic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

CHROMOSOMAL LOCATION

Genetic locus: TET1 (human) mapping to 10q21.3.

PRODUCT

TET1 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 TET1 shRNA Plasmid (h): sc-90457-SH and TET1 shRNA (h) Lentiviral Particles: sc-90457-V as alternate gene silencing products.

For independent verification of TET1 (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-90457A, sc-90457B and sc-90457C.

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

TET1 siRNA (h) is recommended for the inhibition of TET1 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.

GENE EXPRESSION MONITORING

TET1 (4F4): sc-293186 is recommended as a control antibody for monitoring of TET1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 TET1 gene expression knockdown using RT-PCR Primer: TET1 (h)-PR: sc-90457-PR (20 µl, 582 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kang, K.A., et al. 2014. Epigenetic modification of Nrf2 in 5-fluorouracil-resistant colon cancer cells: involvement of TET-dependent DNA demethylation. Cell Death Dis. 5: e1183.
2. Kang, K.A., et al. 2016. Interaction of DNA demethylase and histone methyltransferase upregulates Nrf2 in 5-fluorouracil-resistant colon cancer cells. Oncotarget 7: 40594-40620.
3. Zhang, X., et al. 2018. Diesel exhaust and house dust mite allergen lead to common changes in the airway methylome and hydroxymethylome. Environ. Epigenet. 4: dvy020.
4. Yu, T., et al. 2019. Inhibition of TET1- and TET2-mediated DNA demethylation promotes immunomodulation of periodontal ligament stem cells. Cell Death Dis. 10: 780.
5. Ostrakhovitch, E.A., et al. 2019. 3-mercaptopyruvate sulfurtransferase disruption in dermal fibroblasts facilitates adipogenic *trans*-differentiation. Exp. Cell Res. 385: 111683.
6. Wang, Q., et al. 2021. TET-mediated DNA demethylation plays an important role in arsenic-induced HBE cells oxidative stress via regulating promoter methylation of OGG1 and GSTP1. Toxicol. In Vitro 72: 105075.

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.