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TET1 siRNA (m): sc-154204

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 pathogenesis and metastasis of acute myeloid leukemia (AML). The gene encoding TET1 maps to human chromosome 10q21.3, 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, nonsyndromic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

REFERENCES

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- Ono, R., et al. 2002. LCX, leukemia-associated protein with a CXXC domain, is fused to MLL in acute myeloid leukemia with trilineage dysplasia having t(10;11)(q22;q23). *Cancer Res.* 62: 4075-4080.
- Lorsbach, R.B., et al. 2003. TET1, a member of a novel protein family, is fused to MLL in acute myeloid leukemia containing the t(10;11)(q22;q23). *Leukemia* 17: 637-641.
- Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 607790. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Morgan, A.R., et al. 2008. Association analysis of 528 intra-genic SNPs in a region of chromosome 10 linked to late onset Alzheimer's disease. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 147B: 727-731.
- Abdel-Wahab, O., et al. 2009. Genetic characterization of TET1, TET2, and TET3 alterations in myeloid malignancies. *Blood* 114: 144-147.

CHROMOSOMAL LOCATION

Genetic locus: Tet1 (mouse) mapping to 10 B4.

PRODUCT

TET1 siRNA (m) 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 TET1 shRNA Plasmid (m): sc-154204-SH and TET1 shRNA (m) Lentiviral Particles: sc-154204-V as alternate gene silencing products.

For independent verification of TET1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154204A, sc-154204B and sc-154204C.

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

TET1 siRNA (m) is recommended for the inhibition of TET1 expression in mouse 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 TET1 gene expression knockdown using RT-PCR Primer: TET1 (m)-PR: sc-154204-PR (20 μ l, 505 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Amenya, H.Z., et al. 2016. Dioxin induces Ahr-dependent robust DNA demethylation of the Cyp1a1 promoter via Tdg in the mouse liver. *Sci. Rep.* 6: 34989.
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- Yang, R., et al. 2018. TET1 and TET2 maintain mesenchymal stem cell homeostasis via demethylation of the P2rx7 promoter. *Nat. Commun.* 9: 2143.
- Pensold, D., et al. 2020. DNA methylation-mediated modulation of endocytosis as potential mechanism for synaptic function regulation in murine inhibitory cortical interneurons. *Cereb. Cortex* 30: 3921-3937.

RESEARCH USE

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