SANTA CRUZ BIOTECHNOLOGY, INC.

TET3 siRNA (m): sc-154206

BACKGROUND

TET3 (tet oncogene family member 3) is a 1,660 amino acid protein that belongs to the TET family and is expressed in both fetal and adult brain, as well as in muscle, colon and adrenal gland tissue. Existing as multiple alternatively spliced isoforms, TET3 may play a role in myeloid malignancies and overall tumor formation and metastasis. The gene encoding TET3 maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

REFERENCES

1. Ijdo, J.W., et al. 1991. Origin of human chromosome 2: an ancestral telomere-telomere fusion. Proc. Natl. Acad. Sci. USA 88: 9051-9055.
2. Thomas, A.C., et al. 2006. ABCA12 is the major harlequin ichthyosis gene. J. Invest. Dermatol. 126: 2408-2413.
3. Akiyama, M., et al. 2007. Compound heterozygous ABCA12 mutations including a novel nonsense mutation underlie harlequin ichthyosis. Dermatology 215: 155-159.
4. Marshall, J.D., et al. 2007. Alström syndrome. Eur. J. Hum. Genet. 15: 1193-1202.
5. Marshall, J.D., et al. 2007. Spectrum of ALMS1 variants and evaluation of genotype-phenotype correlations in Alström syndrome. Hum. Mutat. 28: 1114-1123.
6. 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: Tet3 (mouse) mapping to 6 C3.

PRODUCT

TET3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TET3 shRNA Plasmid (m): sc-154206-SH and TET3 shRNA (m) Lentiviral Particles: sc-154206-V as alternate gene silencing products.

For independent verification of TET3 (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-154206A, sc-154206B and sc-154206C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

TET3 siRNA (m) is recommended for the inhibition of TET3 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 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 TET3 gene expression knockdown using RT-PCR Primer: TET3 (m)-PR: sc-154206-PR (20 µl, 599 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. 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.
2. 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.
3. Courant, F., et al. 2022. Modulation of DNA methylation/demethylation reactions induced by nutraceuticals and pollutants of exposome can promote a C > T mutation in the breast cancer predisposing gene PALB2. Epigenomes 6: 32.

RESEARCH USE

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