

TMCO1 siRNA (h): sc-88439

BACKGROUND

TMCO1 (transmembrane and coiled-coil domain-containing protein 1), also known as TMCC4 (transmembrane and coiled-coil domains protein 4) or xeno-geneic cross-immune protein PCIA3, is a 188 amino acid multi-pass membrane protein that belongs to the TMCO1 family and exists as two alternatively spliced isoforms. While expressed abundantly in thymus, prostate, testis and small intestine, TMCO1 is expressed to a lower extent in brain, placenta, lung and kidney. The gene that encodes TMCO1 contains approximately 44,890 bases and maps to human chromosome 1q24.1. Comprising nearly 8% of the human genome, chromosome 1 spans 260 million base pairs, contains over 3,000 genes and houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

REFERENCES

1. Dobbie, Z., et al. 1997. Identification of a modifier gene locus on chromosome 1p35-36 in familial adenomatous polyposis. *Hum. Genet.* 99: 653-657.
2. Eudy, J.D., et al. 1998. Isolation of a gene encoding a novel member of the nuclear receptor superfamily from the critical region of Usher syndrome type IIa at 1q41. *Genomics* 50: 382-384.
3. Tayebi, N., et al. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. *Mol. Genet. Metab.* 73: 313-321.
4. Plasilova, M., et al. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. *Eur. J. Hum. Genet.* 12: 365-371.
5. Betarbet, R., et al. 2008. Fas-associated factor 1 and Parkinson's disease. *Neurobiol. Dis.* 31: 309-315.
6. Holliday, E.G., et al. 2009. Strong evidence for a novel schizophrenia risk locus on chromosome 1p31.1 in homogeneous pedigrees from Tamil Nadu, India. *Am. J. Psychiatry* 166: 206-215.
7. Yokoi, T., et al. 2009. Analysis of the vitreous membrane in a case of type 1 Stickler syndrome. *Graefes Arch. Clin. Exp. Ophthalmol.* 247: 715-718.
8. Xin, B., et al. 2010. Homozygous frameshift mutation in TMCO1 causes a syndrome with craniofacial dysmorphism, skeletal anomalies, and mental retardation. *Proc. Natl. Acad. Sci. USA* 107: 258-263.

CHROMOSOMAL LOCATION

Genetic locus: TMCO1 (human) mapping to 1q24.1.

PRODUCT

TMCO1 siRNA (h) is a target-specific 19-25 nt siRNA 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 TMCO1 shRNA Plasmid (h): sc-88439-SH and TMCO1 shRNA (h) Lentiviral Particles: sc-88439-V as alternate gene silencing 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 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

TMCO1 siRNA (h) is recommended for the inhibition of TMCO1 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 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 TMCO1 gene expression knockdown using RT-PCR Primer: TMCO1 (h)-PR: sc-88439-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhong, W., et al. 2022. Nanocarrier-assisted delivery of metformin boosts remodeling of diabetic periodontal tissue via cellular exocytosis-mediated regulation of endoplasmic reticulum homeostasis. *ACS Nano*. E-published.

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.