

TMIGD1 siRNA (h): sc-94146

BACKGROUND

TMIGD1 (transmembrane and immunoglobulin domain containing 1) is a 262 amino acid single-pass membrane protein that contains two Ig-like C2-type (immunoglobulin-like) domains. Existing as two alternatively spliced isoforms, the TMIGD1 gene is conserved in chimpanzee, canine, bovine, mouse, rat and zebrafish, and maps to human chromosome 17q11.2. Chromosome 17 makes up over 2.5% of the human genome with about 81 million bases encoding over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes. Chromosome 17 is also linked to neurofibromatosis, a condition characterized by neural and epidermal lesions, and dysregulated Schwann cell growth. Alexander disease, Birt-Hogg-Dubé syndrome and Canavan disease are also associated with chromosome 17.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: TMIGD1 (human) mapping to 17q11.2.

PRODUCT

TMIGD1 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 TMIGD1 shRNA Plasmid (h): sc-94146-SH and TMIGD1 shRNA (h) Lentiviral Particles: sc-94146-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

TMIGD1 siRNA (h) is recommended for the inhibition of TMIGD1 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 TMIGD1 gene expression knockdown using RT-PCR Primer: TMIGD1 (h)-PR: sc-94146-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. Arafa, E., Bondzie, P.A., Rezazadeh, K., Meyer, R.D., Hartsough, E., Henderson, J.M., Schwartz, J.H., Chitalia, V. and Rahimi, N. 2015. TMIGD1 is a novel adhesion molecule that protects epithelial cells from oxidative cell injury. *Am. J. Pathol.* 185: 2757-2767.

RESEARCH USE

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