

TMC6 siRNA (m): sc-154318

BACKGROUND

TMC6 (transmembrane channel-like 6), also known as EVER1, EVIN1, EV1 or LAK-4P, is an 805 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and belongs to the transmembrane channel family. Expressed in testis, placenta and prostate, TMC6 exists as multiple alternatively spliced isoforms and, when defective, is associated with the pathogenesis of epidermodysplasia verruciformis (EV). EV is an autosomal recessive dermatosis that is characterized by an increased susceptibility to human papillomaviruses (HPVs) and an increased rate of squamous cell carcinoma in UV-exposed skin. The gene encoding TMC6 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Ramoz, N. 1999. A susceptibility locus for epidermodysplasia verruciformis, an abnormal predisposition to infection with the oncogenic human papillomavirus type 5, maps to chromosome 17qter in a region containing a psoriasis locus. *J. Invest. Dermatol.* 112: 259-263.
2. Ramoz, N., et al. 2000. Evidence for a nonallelic heterogeneity of epidermodysplasia verruciformis with two susceptibility loci mapped to chromosome regions 2p21-p24 and 17q25. *J. Invest. Dermatol.* 114: 1148-1153.
3. Keresztes, G., et al. 2003. TMC and EVER genes belong to a larger novel family, the TMC gene family encoding transmembrane proteins. *BMC Genomics* 4: 24.
4. Kurima, K., et al. 2003. Characterization of the transmembrane channel-like (TMC) gene family: functional clues from hearing loss and epidermodysplasia verruciformis. *Genomics* 82: 300-308.
5. Tate, G., et al. 2004. Novel mutations of EVER1/TMC6 gene in a Japanese patient with epidermodysplasia verruciformis. *J. Hum. Genet.* 49: 223-225.
6. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 605828. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Donfack, J., et al. 2006. Four mutations in epidermodysplasia verruciformis 1 (EVER1) gene are not contributors to susceptibility in RRP. *Int. J. Pediatr. Otorhinolaryngol.* 70: 1235-1240.
8. Lazarczyk, M., et al. 2008. Regulation of cellular zinc balance as a potential mechanism of EVER-mediated protection against pathogenesis by cutaneous oncogenic human papillomaviruses. *J. Exp. Med.* 205: 35-42.

CHROMOSOMAL LOCATION

Genetic locus: Tmc6 (mouse) mapping to 11 E2.

PRODUCT

TMC6 siRNA (m) 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 TMC6 shRNA Plasmid (m): sc-154318-SH and TMC6 shRNA (m) Lentiviral Particles: sc-154318-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

TMC6 siRNA (m) is recommended for the inhibition of TMC6 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.

GENE EXPRESSION MONITORING

TMC6 (H-10): sc-376679 is recommended as a control antibody for monitoring of TMC6 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 TMC6 gene expression knockdown using RT-PCR Primer: TMC6 (m)-PR: sc-154318-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.