SANTA CRUZ BIOTECHNOLOGY, INC.

TMC8 siRNA (h): sc-94147

BACKGROUND

Transmembrane channel-like protein 8 (TMC8), also known as epidermodysplasia verruciformis protein 2 (EVER2), is a 726 amino acid member of the TMC family of proteins. Localized to the endoplasmic reticulum membrane, TMC8 is thought to form a transmembrane channel-like protein with eight predicted transmembrane dommains and three leucine zipper motifs. Mutations in the genes encoding TMC8 and TMC6, another member of the TMC family, have been shown to cause epidermodysplasia verruciformis (EV), an autosomal recessive dermatosis characterized by abnormal susceptibility to human papillomaviruses (HPVs) and a high rate of progression to squamous cell carcinoma on sun-exposed skin. Infection by HPVs lead to persistent wart-like or macular lesions. TMC8 is expressed in placenta, prostate and testis, and three named isoforms exist as a result of alternative splicing events.

REFERENCES

1. Ramoz, N., et al. 2002. Mutations in two adjacent novel genes are associated with epidermodysplasia verruciformis. Nat. Genet. 32: 579-581.
2. 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.
3. 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.
4. Azzimonti, B., et al. 2005. $CD8^+$ T-cell lymphocytopenia and lack of EVER mutations in a patient with clinically and virologically typical epidermodysplasia verruciformis. Arch. Dermatol. 141: 1323-1325.
5. Sun, X.K., et al. 2005. A homozygous nonsense mutation in the EVER2 gene leads to epidermodysplasia verruciformis. Clin. Exp. Dermatol. 30: 573-574.
6. Orth, G. 2006. Genetics of epidermodysplasia verruciformis: insights into host defense against papillomaviruses. Semin. Immunol. 18: 362-374.

CHROMOSOMAL LOCATION

Genetic locus: TMC8 (human) mapping to 17q25.3.

PRODUCT

TMC8 siRNA (h) 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 TMC8 shRNA Plasmid (h): sc-94147-SH and TMC8 shRNA (h) Lentiviral Particles: sc-94147-V as alternate gene silencing products.

For independent verification of TMC8 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-94147A, sc-94147B and sc-94147C.

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

TMC8 siRNA (h) is recommended for the inhibition of TMC8 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 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 TMC8 gene expression knockdown using RT-PCR Primer: TMC8 (h)-PR: sc-94147-PR (20 µl). 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.