SANTA CRUZ BIOTECHNOLOGY, INC.

TMIE siRNA (h): sc-78335

BACKGROUND

TMIE (transmembrane inner ear expressed protein) is a 156 amino acid single-pass type I membrane protein that is expressed in many tissues. TMIE may be involved in membrane localization and may reside within an internal membrane compartment and function in pathways such as those involved in protein and/or vesicle trafficking. Alternatively, TMIE may be localized in the plasma membrane and serve as a site of interaction for other molecules through its highly charged C-terminal domain. Defects in TMIE are the cause of deafness autosomal recessive type 6 (DFNB6), a form of sensorineural hearing loss. Sensorineural deafness results from damage to the neural receptors of the inner ear, the nerve pathways to the brain or the area of the brain that receives sound information. The gene that encodes TMIE consists of approximately 9,591 bases and maps to human chromosome 3p21.31.

REFERENCES

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3. Mitchem, K.L., et al. 2002. Mutation of the novel gene Tmie results in sensory cell defects in the inner ear of spinner, a mouse model of human hearing loss DFNB6. Hum. Mol. Genet. 11: 1887-1898.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607237. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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6. Sirmaci, A., et al. 2009. A founder TMIE mutation is a frequent cause of hearing loss in southeastern Anatolia. Clin. Genet. 75: 562-567.
7. Yang, J.J., et al. 2010. Identification of novel variants in the TMIE gene of patients with nonsyndromic hearing loss. Int. J. Pediatr. Otorhinolaryngol. 74: 489-493.

CHROMOSOMAL LOCATION

Genetic locus: TMIE (human) mapping to 3p21.31.

PRODUCT

TMIE 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 TMIE shRNA Plasmid (h): sc-78335-SH and TMIE shRNA (h) Lentiviral Particles: sc-78335-V as alternate gene silencing products.

For independent verification of TMIE (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-78335A, sc-78335B and sc-78335C.

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

TMIE siRNA (h) is recommended for the inhibition of TMIE 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 TMIE gene expression knockdown using RT-PCR Primer: TMIE (h)-PR: sc-78335-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.

PROTOCOLS

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