

# tricellulin siRNA (h): sc-92021

## BACKGROUND

Tricellulin (TRIC), also known as MARVELD2 (MARVEL domain-containing protein 2), is a 558 amino acid cell membrane protein that accumulates at vertically oriented tight junction strands of tricellular contacts. Tricellulin is involved in the formation of epithelial barriers, which separate the endolymphatic and perilymphatic spaces in the organ of Corti and are essential to normal hearing. Defects in tricellulin result in non-syndromic sensorineural deafness autosomal recessive type 49 (DFNB49), a sensorineural hearing loss. Phosphorylated upon DNA damage by ATM or ATR, tricellulin contains one MARVEL domain. Tricellulin is expressed as three isoforms produced by alternative splicing events.

## REFERENCES

1. Ramzan, K., et al. 2005. A new locus for nonsyndromic deafness DFNB49 maps to chromosome 5q12.3-q14.1. *Hum. Genet.* 116: 17-22
2. Ikenouchi, J., et al. 2005. Tricellulin constitutes a novel barrier at tricellular contacts of epithelial cells. *J. Cell Biol.* 171: 939-945.
3. Zhang, Y., et al. 2005. Time-resolved mass spectrometry of tyrosine phosphorylation sites in the epidermal growth factor receptor signaling network reveals dynamic modules. *Mol. Cell. Proteomics* 4: 1240-1250.
4. Riazuddin, S., et al. 2006. Tricellulin is a tight-junction protein necessary for hearing. *Am. J. Hum. Genet.* 79: 1040-1051.
5. Chishti, M.S., et al. 2008. Splice-site mutations in the TRIC gene underlie autosomal recessive nonsyndromic hearing impairment in Pakistani families. *J. Hum. Genet.* 53: 101-105.

## CHROMOSOMAL LOCATION

Genetic locus: MARVELD2 (human) mapping to 5q13.2.

## PRODUCT

tricellulin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see tricellulin shRNA Plasmid (h): sc-92021-SH and tricellulin shRNA (h) Lentiviral Particles: sc-92021-V as alternate gene silencing products.

For independent verification of tricellulin (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-92021A, sc-92021B and sc-92021C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

tricellulin siRNA (h) is recommended for the inhibition of tricellulin 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  $\mu$ M in 66  $\mu$ 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 tricellulin gene expression knockdown using RT-PCR Primer: tricellulin (h)-PR: sc-92021-PR (20  $\mu$ l, 467 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Sumitomo, T., et al. 2016. Group A *Streptococcus* exploits human plasminogen for bacterial translocation across epithelial barrier via tricellular tight junctions. *Sci. Rep.* 7: 20069.
2. Smyth, T., et al. 2020. Diesel exhaust particle exposure reduces expression of the epithelial tight junction protein tricellulin. *Part. Fibre Toxicol.* 17: 52.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.