

# TMEM38B siRNA (h): sc-92563

## BACKGROUND

TMEM38B (transmembrane protein 38B), also known as TRICB (trimeric intracellular cation channel type B), is a 291 amino acid multi-pass membrane protein that belongs to the TMEM38 family and exists as a homotrimer. The second transmembrane domain within TMEM38B has been proposed to cross only half of the lipid bilayer and to loop back into the cytosol. This results in the regions on each side of this domain to localize to the cytosolic face of the membrane. The cytosolic loop may form an ion-conducting pore. While it may act as a potassium counter-ion channel that functions in synchronization with calcium release from intracellular stores, TMEM38B is known to be a mono-valent cation channel that is required for maintenance of rapid intracellular calcium release. The gene that encodes TMEM38B consists of more than 82,000 bases and maps to human chromosome 9q31.2.

## REFERENCES

1. Yazawa, M., Ferrante, C., Feng, J., Mio, K., Ogura, T., Zhang, M., Lin, P.H., Pan, Z., Komazaki, S., Kato, K., Nishi, M., Zhao, X., Weisleder, N., Sato, C., Ma, J. and Takeshima, H. 2007. TRIC channels are essential for  $Ca^{2+}$  handling in intracellular stores. *Nature* 448: 78-82.
2. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611236. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Yamazaki, D., Komazaki, S., Nakanishi, H., Mishima, A., Nishi, M., Yazawa, M., Yamazaki, T., Taguchi, R. and Takeshima, H. 2009. Essential role of the TRIC-B channel in  $Ca^{2+}$  handling of alveolar epithelial cells and in perinatal lung maturation. *Development* 136: 2355-2361.
4. Perry, J.R., Stolk, L., Franceschini, N., Lunetta, K.L., Zhai, G., McArdle, P.F., Smith, A.V., Aspelund, T., Bandinelli, S., Boerwinkle, E., Cherkas, L., Eiriksdottir, G., Estrada, K., Ferrucci, L., Folsom, A.R., Garcia, M., Gudnason, V., Hofman, A., Karasik, D., Kiel, D.P., Launer, L.J., et al. 2009. Meta-analysis of genome-wide association data identifies two loci influencing age at menarche. *Nat. Genet.* 41: 648-650.
5. Yamazaki, D., Yamazaki, T. and Takeshima, H. 2009. New molecular components supporting ryanodine receptor-mediated  $Ca^{2+}$  release: roles of junctophilin and TRIC channel in embryonic cardiomyocytes. *Pharmacol. Ther.* 121: 265-272.
6. Fortes, M.R., Reverter, A., Zhang, Y., Collis, E., Nagaraj, S.H., Jonsson, N.N., Prayaga, K.C., Barris, W. and Hawken, R.J. 2010. Association weight matrix for the genetic dissection of puberty in beef cattle. *Proc. Natl. Acad. Sci. USA* 107: 13642-13647.

## CHROMOSOMAL LOCATION

Genetic locus: TMEM38B (human) mapping to 9q31.2.

## 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.

## PRODUCT

TMEM38B 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 TMEM38B shRNA Plasmid (h): sc-92563-SH and TMEM38B shRNA (h) Lentiviral Particles: sc-92563-V as alternate gene silencing products.

For independent verification of TMEM38B (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-92563A, sc-92563B and sc-92563C.

## 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

TMEM38B siRNA (h) is recommended for the inhibition of TMEM38B 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 TMEM38B gene expression knockdown using RT-PCR Primer: TMEM38B (h)-PR: sc-92563-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.