

# TMEM18 siRNA (h): sc-94311

## BACKGROUND

TMEM18 (transmembrane protein 18) is a 140 amino acid multi-pass membrane protein that localizes to the nuclear membrane and is expressed in the brain. TMEM18 functions as a cell migration modulator which enhances the glioma-specific migration ability of neural precursor and neural stem cells. Overexpression of TMEM18 increases migration of human and murine neural stem cells, whereas knockdown of TMEM18 mRNA reduces cellular migration. Two specific single nucleotide polymorphisms (SNPs) within the TMEM18 gene locus known as rs6548238 and rs756131 have been linked to obesity susceptibility.

## REFERENCES

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2. Hotta, K., et al. 2009. Association between obesity and polymorphisms in SEC16B, TMEM18, GNPDA2, BDNF, FAIM2 and MC4R in a Japanese population. *J. Hum. Genet.* 54: 727-731.
3. Willer, C.J., et al. 2009. Six new loci associated with body mass index highlight a neuronal influence on body weight regulation. *Nat. Genet.* 41: 25-34.
4. Almén, M.S., et al. 2010. The obesity gene, TMEM18, is of ancient origin, found in majority of neuronal cells in all major brain regions and associated with obesity in severely obese children. *BMC Med. Genet.* 11: 58.
5. Holzapfel, C., et al. 2010. First investigation of two obesity-related loci (TMEM18, FTO) concerning their association with educational level as well as income: the MONICA/KORA study. *J. Epidemiol. Community Health* 65: 174-176.
6. Elks, C.E., et al. 2010. Thirty new loci for age at menarche identified by a meta-analysis of genome-wide association studies. *Nat. Genet.* 42: 1077-1085.
7. Orkunoglu-Suer, F.E., et al. 2010. MC4R variant is associated with BMI but not response to resistance training in young females. *Obesity* 19: 662-666.
8. Elks, C.E., et al. 2010. Genetic markers of adult obesity risk are associated with greater early infancy weight gain and growth. *PLoS Med.* 7: e1000284.
9. Online Mendelian Inheritance in Man, OMIM™. 2010. Johns Hopkins University, Baltimore, MD. MIM Number: 613220. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: TMEM18 (human) mapping to 2p25.3.

## 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

TMEM18 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 TMEM18 shRNA Plasmid (h): sc-94311-SH and TMEM18 shRNA (h) Lentiviral Particles: sc-94311-V as alternate gene silencing products.

For independent verification of TMEM18 (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-94311A, sc-94311B and sc-94311C.

## 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

TMEM18 siRNA (h) is recommended for the inhibition of TMEM18 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 TMEM18 gene expression knockdown using RT-PCR Primer: TMEM18 (h)-PR: sc-94311-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.