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# tropomodulin 2 siRNA (m): sc-43465

## BACKGROUND

Originally isolated from human erythrocytes, the tropomodulin (TMOD) family of proteins cap the pointed end of Actin filaments. A component of the membrane skeleton, TMOD binds to the amino-terminus of Tropomyosin, which coats the surface of Actin, and thus blocks the elongation and depolymerization of Actin filaments. Four TMOD isoforms, TMOD 1-TMOD 4, have been characterized in humans. TMOD expression is isoform-specific; TMOD 3 is expressed ubiquitously, whereas TMOD 2 and TMOD 4 are expressed in neuronal tissue and muscle, respectively. The human TMOD 2 gene maps to chromosome 15q21.1-q21.2, which is within the same region as the gene for amyotrophic lateral sclerosis 5 (ALS5), and encodes a 351 amino acid protein. NTMOD, the rat homolog to TMOD2, is expressed predominantly in rat brain. NTMOD binds to the neuron-specific isoform TMbr2 and is the major binding protein to brain Tropomyosin in rat.

## REFERENCES

1. Watakabe, A., Kobayashi, R. and Helfman, D.M. 1996. N-tropomodulin: a novel isoform of tropomodulin identified as the major binding protein to brain Tropomyosin. *J. Cell Sci.* 109: 2299-2310.
2. Sung, L.A., Fan, Y. and Lin, C.C. 1996. Gene assignment, expression and homology of human tropomodulin. *Genomics* 34: 92-96.
3. Kimura, S., Ichikawa, A., Ishizuka, J., Ohkouchi, S., Kake, T. and Maruyama, K. 1999. Tropomodulin isolated from rabbit skeletal muscle inhibits filament formation of Actin in the presence of Tropomyosin and troponin. *Eur. J. Biochem.* 263: 396-401.
4. Lee, A., Fischer, R.S. and Fowler, V.M. 2000. Stabilization and remodeling of the membrane skeleton during lens fiber cell differentiation and maturation. *Dev. Dyn.* 217: 257-270.
5. Cox, P.R. and Zoghbi, H.Y. 2000. Sequencing, expression analysis and mapping of three unique human tropomodulin genes and their mouse orthologs. *Genomics* 63: 97-107.
6. Cox, P.R., Siddique, T. and Zoghbi, H.Y. 2001. Genomic organization of tropomodulins 2 and 4 and unusual intergenic and intraexonic splicing of YL-1 and tropomodulin 4. *BMC Genomics* 2: 7.

## CHROMOSOMAL LOCATION

Genetic locus: Tmod2 (mouse) mapping to 9 D.

## PRODUCT

tropomodulin 2 siRNA (m) 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 tropomodulin 2 shRNA Plasmid (m): sc-43465-SH and tropomodulin 2 shRNA (m) Lentiviral Particles: sc-43465-V as alternate gene silencing products.

For independent verification of tropomodulin 2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43465A, sc-43465B and sc-43465C.

## 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

tropomodulin 2 siRNA (m) is recommended for the inhibition of tropomodulin 2 expression in mouse 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 tropomodulin 2 gene expression knockdown using RT-PCR Primer: tropomodulin 2 (m)-PR: sc-43465-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.