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SANTA CRUZ BIOTECHNOLOGY, INC.

tropomodulin 4 siRNA (h): sc-43468

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, TMOD1-TMOD4, have been characterized in humans. TMOD expression is isoform-specific; TMOD3 is expressed ubiquitously, whereas TMOD2 and TMOD4 are expressed in neuronal tissue and muscle, respectively. TMOD4, which has a similar organization to TMOD2, is intergenically spliced by the putative transformation suppressor gene product YL-1. The human TMOD4 gene maps to the telomeric end of chromosome 1q21.3 and encodes a 351 amino acid protein. The expression and chromosomal location of the TMOD4 gene make it a candidate for limb girdle musclular dystrophy 1B.

REFERENCES

1. Sung, L.A., Fan, Y. and Lin, C.C. 1996. Gene assignment, expression and homology of human tropomodulin. Genomics 34: 92-96.
2. 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.
3. 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.
4. 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.
5. 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: TMOD4 (human) mapping to 1q21.3.

PRODUCT

tropomodulin 4 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 tropomodulin 4 shRNA Plasmid (h): sc-43468-SH and tropomodulin 4 shRNA (h) Lentiviral Particles: sc-43468-V as alternate gene silencing products.

For independent verification of tropomodulin 4 (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-43468A, sc-43468B and sc-43468C.

PROTOCOLS

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

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

tropomodulin 4 siRNA (h) is recommended for the inhibition of tropomodulin 4 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 tropomodulin 4 gene expression knockdown using RT-PCR Primer: tropomodulin 4 (h)-PR: sc-43468-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.