SANTA CRUZ BIOTECHNOLOGY, INC.

tropomodulin 3 siRNA (m): sc-36733

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, tropomodulin binds to the amino-terminus of Tropomyosin, which coats the surface of Actin, and thus blocks the elongation and depolymerization of Actin filaments. Four tropomodulin isoforms, tropomodulin 1-4, have been characterized in humans. Tropomodulin expression is isoform-specific; tropomodulin 3 is expressed ubiquitously, whereas tropomodulin 2 and tropomodulin 4 are expressed in neuronal tissue and muscle, respectively. Ubiquitous expression of seven tropomodulin 3 transcripts, ranging in size between 1 and 9.5 kb, have been identified by Northern Blot analysis on human tissues. The human TMOD3 gene maps to chromosome 15q21.2, within the same region as the gene for amyotrophic lateral sclerosis 5 (ALS5), and encodes a 352 amino acid protein. Tmod3, the mouse homolog to human TMOD3, is present as early as day seven in embryonic development and is expressed throughout development.

REFERENCES

1. Sung, L.A., et al. 1996. Gene assignment, expression, and homology of human tropomodulin. Genomics 34: 92-96.
2. Watakabe, A., et al. 1996. N-tropomodulin: a novel isoform of tropomodulin identified as the major binding protein to brain tropomyosin. J. Cell Sci. 109: 2299-2310.
3. Kimura, S., et al. 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., et al. 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., et al. 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: Tmod3 (mouse) mapping to 9 D.

PRODUCT

tropomodulin 3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see tropomodulin 3 shRNA Plasmid (m): sc-36733-SH and tropomodulin 3 shRNA (m) Lentiviral Particles: sc-36733-V as alternate gene silencing products.

For independent verification of tropomodulin 3 (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-36733A, sc-36733B and sc-36733C.

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 3 siRNA (m) is recommended for the inhibition of tropomodulin 3 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 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.

GENE EXPRESSION MONITORING

tropomodulin 3 (F-11): sc-365646 is recommended as a control antibody for monitoring of tropomodulin 3 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor tropomodulin 3 gene expression knockdown using RT-PCR Primer: tropomodulin 3 (m)-PR: sc-36733-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.

PROTOCOLS

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