SANTA CRUZ BIOTECHNOLOGY, INC.

TMSL3 siRNA (h): sc-106623

BACKGROUND

Proteins in the thymosin β family are highly conserved polar peptides that bind monomeric Actin and function to inhibit Actin polymerization. These proteins act as the main intracellular G-Actin sequestering peptides and they participate in several cellular events, including cancerogenesis, apoptosis, angiogenesis, blood coagulation and wound healing. TMSL3 (thymosin-like 3) is a 44 amino acid protein that localizes to both the cytoplasm and the cytoskeleton and belongs to the thymosin β family. Acting in a similar manner to related thymosin β proteins, TMSL3 functions to bind and sequester Actin monomers, thereby inhibiting Actin polymerization and playing an important role in cytoskeletal organization. The gene encoding TMSL3 maps to human chromosome 4q22.1, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

REFERENCES

1. Clauss, I.M., Wathelet, M.G., Szpirer, J., Islam, M.Q., Levan, G., Szpirer, C. and Huez, G.A. 1991. Human thymosin-β 4/6-26 gene is part of a multigene family composed of seven members located on seven different chromosomes. Genomics 9: 174-180.
2. Safer, D. and Nachmias, V.T. 1994. β thymosins as Actin binding peptides. Bioessays 16: 473-479.
3. Safer, D. and Chowrashi, P.K. 1997. β-thymosins from marine invertebrates: primary structure and interaction with Actin. Cell Motil. Cytoskeleton 38: 163-171.
4. Huff, T., Müller, C.S., Otto, A.M., Netzker, R. and Hannappel, E. 2001. β-thymosins, small acidic peptides with multiple functions. Int. J. Biochem. Cell Biol. 33: 205-220.
5. Gómez-Márquez, J. and Anadón, R. 2002. The β-thymosins, small Actin-binding peptides widely expressed in the developing and adult cerebellum. Cerebellum 1: 95-102.
6. Hannappel, E. 2007. β-thymosins. Ann. N.Y. Acad. Sci. 1112: 21-37.
7. Sun, H.Q. and Yin, H.L. 2007. The β-thymosin enigma. Ann. N.Y. Acad. Sci. 1112: 45-55.
8. Xue, B., Aguda, A.H. and Robinson, R.C. 2007. Models of the Actin-bound forms of the β-thymosins. Ann. N.Y. Acad. Sci. 1112: 56-66.

CHROMOSOMAL LOCATION

Genetic locus: TMSL3 (human) mapping to 4q22.1.

PRODUCT

TMSL3 siRNA (h) is a target-specific 19-25 nt siRNA 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 TMSL3 shRNA Plasmid (h): sc-106623-SH and TMSL3 shRNA (h) Lentiviral Particles: sc-106623-V as alternate gene silencing 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

TMSL3 siRNA (h) is recommended for the inhibition of TMSL3 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 TMSL3 gene expression knockdown using RT-PCR Primer: TMSL3 (h)-PR: sc-106623-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.