SANTA CRUZ BIOTECHNOLOGY, INC.

TMTSP siRNA (m): sc-63140

BACKGROUND

TMTSP (transmembrane molecule with Thrombospondin module), also known as THSD1 (Thrombospondin type-1 domain-containing protein 1), is an 852 amino acid protein expressed in endothelial cells and hematopoietic cells. Three isoforms of TMTSP are produced by alternative splicing events. Isoforms 1 and 2 are single-pass type I membrane proteins while isoform 3 is a secreted protein. TMTSP contains three immunoglobulin-like domains and one Thrombospondin domain. Thrombospondin domains have been associated with cell migration and are found in a variety of different proteins, including extracellular matrix proteins, thromobospondins and complement pathway proteins.

REFERENCES

1. Bork, P. 1993. The modular architecture of a new family of growth regulators related to connective tissue growth factor. FEBS Lett. 327: 125-130.
2. Clark, H.F., Gurney, A.L., Abaya, E., Baker, K., Baldwin, D., Brush, J., Chen, J., Chow, B., Chui, C., Crowley, C., Currell, B., Deuel, B., Dowd, P., Eaton, D., Foster, J., Grimaldi, C., Gu, Q., Hass, P.E., Heldens, S., Huang, A., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. Genome Res. 13: 2265-2270.
3. Gerhard, D.S., Wagner, L., Feingold, E.A., Shenmen, C.M., Grouse, L.H., Schuler, G., Klein, S.L., Old, S., Rasooly, R., Good, P., Guyer, M., Peck, A.M., Derge, J.G., Lipman, D., Collins, F.S., Jang, W., Sherry, S., et al. 2004. The status, quality, and expansion of the NIH full-length cDNA project: the Mammalian Gene Collection (MGC). Genome Res. 14: 2121-2127.
4. Orr, A.W., Pallero, M.A., Xiong, W.C. and Murphy-Ullrich, J.E. 2004. Thrombospondin induces RhoA inactivation through FAK-dependent signaling to stimulate focal adhesion disassembly. J. Biol. Chem. 279: 48983-48992.
5. Takayanagi, S., Hiroyama, T., Yamazaki, S., Nakajima, T., Morita, Y., Usui, J., Eto, K., Motohashi, T., Shiomi, K., Keino-Masu, K., Masu, M., Oike, Y., Mori, S., Yoshida, N., Iwama, A. and Nakauchi, H. 2006. Genetic marking of hematopoietic stem and endothelial cells: identification of the Tmtsp gene encoding a novel cell surface protein with the Thrombospondin-1 domain. Blood 107: 4317-4325.
6. Kis, E., Szatmári, T., Keszei, M., Farkas, R., Esik, O., Lumniczky, K., Falus, A. and Sáfrány, G. 2006. Microarray analysis of radiation response genes in primary human fibroblasts. Int. J. Radiat. Oncol. Biol. Phys. 66: 1506-1514.
7. Gruber, H.E. and Ingram, J.A. 2006. Immunolocalization of thrombospondin in the human and sand rat intervertebral disc. Spine 31: 2556-2561.

CHROMOSOMAL LOCATION

Genetic locus: Thsd1 (mouse) mapping to 8 A2.

PROTOCOLS

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

PRODUCT

TMTSP 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 TMTSP shRNA Plasmid (m): sc-63140-SH and TMTSP shRNA (m) Lentiviral Particles: sc-63140-V as alternate gene silencing products.

For independent verification of TMTSP (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-63140A, sc-63140B and sc-63140C.

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

TMTSP siRNA (m) is recommended for the inhibition of TMTSP 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TMTSP gene expression knockdown using RT-PCR Primer: TMTSP (m)-PR: sc-63140-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.