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T-Plastin siRNA (h): sc-43215

BACKGROUND

Plastins (fimbrins) are members of a family of Actin-binding proteins that exhibit a tissue-specific expression pattern. Both L- and T-Plastin have been shown to be involved in cytoskeletal reorganization. L-Plastin, which is specifically expressed in hematopoietic cell lineages, has been proposed to be involved in the control of cell adhesion and motility. L-Plastin is frequently expressed in cell lines derived from mammary solid tumors and is implicated in cancer invasion and metastasis. L-Plastin is also expressed in the majority of human cancer cell lines that are derived from various types of solid tumors. Additionally, L-Plastin is involved in regulating of leukocyte adhesion, and the phosphorylation of L-Plastin is implicated in modulating integrin regulation signaling pathways. T-Plastin is unique in that it is expressed in many types of tissues and notably absent in leukocytes.

REFERENCES

1. Lin, C.S., et al. 1998. Analysis and mapping of Plastin phosphorylation. *DNA Cell Biol.* 17: 1041-1046.
2. Jones, S.L., et al. 1998. A role for the Actin-bundling protein L-Plastin in the regulation of leukocyte Integrin function. *Proc. Natl. Acad. Sci. USA* 95: 9331-9336.
3. Lin, C.S., et al. 1999. Differential regulation of human T-Plastin gene in leukocytes and non-leukocytes: identification of the promoter, enhancer and CpG island. *DNA Cell Biol.* 18: 27-37.
4. Lin, C.S., et al. 2000. Upregulation of L-Plastin gene by testosterone in breast and prostate cancer cells: identification of three cooperative androgen receptor-binding sequences. *DNA Cell Biol.* 19: 1-7.

CHROMOSOMAL LOCATION

Genetic locus: PLS3 (human) mapping to Xq23.

PRODUCT

T-Plastin 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see T-Plastin shRNA Plasmid (h): sc-43215-SH and T-Plastin shRNA (h) Lentiviral Particles: sc-43215-V as alternate gene silencing products.

For independent verification of T-Plastin (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-43215A, sc-43215B and sc-43215C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

T-Plastin siRNA (h) is recommended for the inhibition of T-Plastin 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

T-Plastin (A-3): sc-166208 is recommended as a control antibody for monitoring of T-Plastin 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 T-Plastin gene expression knockdown using RT-PCR Primer: T-Plastin (h)-PR: sc-43215-PR (20 μ l, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sugimachi, K., et al. 2014. Aberrant expression of Plastin-3 via copy number gain induces the epithelial-mesenchymal transition in circulating colorectal cancer cells. *Ann. Surg. Oncol.* 21: 3680-3690.
2. Ma, Y., et al. 2019. Plastin 3 down-regulation augments the sensitivity of MDA-MB-231 cells to paclitaxel via the p38 MAPK signalling pathway. *Artif. Cells Nanomed. Biotechnol.* 47: 685-695.

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.