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CD151 siRNA (h): sc-42829

BACKGROUND

CD151 is involved in a wide variety of cell biological processes, including cell adhesion and the transport of integrins via vesicles. The human CD151 gene maps to chromosome 11p15.5 and encodes a 253-amino acid protein, which belongs to the tetraspan (4TM) superfamily. CD151 can associate with several integrin chains including $\beta 1$, $\beta 3$, $\beta 4$, $\alpha 2$, $\alpha 3$, $\alpha 5$, and $\alpha 6$ Integrins. CD151 may provide a framework for the spatial organization of both type I and type II hemidesmosomes, which are specialized junctional complexes that function as cell attachment sites for binding to basement membranes. CD151 RNA transcript (1.6 kb) can be detected in MO7e cells, bone marrow stromal cells, C11 endothelial cells, HUVEC, and several myeloid leukemia cell lines, however, no transcript is detected in brain and the lymphoblastoid cell lines MOLT-4 and BALM-1. Leu149-Glu213 of CD151 is the interface through which Integrins $\alpha 3\beta 1$ can bind. CD151 can enhance cell motility, invasion and metastasis of cancer cells in a focal adhesion kinase dependent manner.

REFERENCES

1. Fitter, S., et al. 1995. Molecular cloning of cDNA encoding a novel platelet-endothelial cell tetraspan antigen, PETA-3. *Blood* 86: 1348-1355.
2. Hasegawa, H., et al. 1996. SFA-1, a novel cellular gene induced by human T cell leukemia virus type 1, is a member of the transmembrane 4 superfamily. *J. Virol.* 70: 3258-3263.
3. Sincoc, P.M., et al. 1999. PETA-3/CD151, a member of the transmembrane 4 superfamily, is localised to the plasma membrane and endocytic system of endothelial cells, associates with multiple integrins and modulates cell function. *J. Cell Sci.* 112: 833-844.

CHROMOSOMAL LOCATION

Genetic locus: CD151 (human) mapping to 11p15.5.

PRODUCT

CD151 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 CD151 shRNA Plasmid (h): sc-42829-SH and CD151 shRNA (h) Lentiviral Particles: sc-42829-V as alternate gene silencing products.

For independent verification of CD151 (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-42829A, sc-42829B and sc-42829C.

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

CD151 siRNA (h) is recommended for the inhibition of CD151 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

CD151 (H-8): sc-271216 is recommended as a control antibody for monitoring of CD151 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 CD151 gene expression knockdown using RT-PCR Primer: CD151 (h)-PR: sc-42829-PR (20 μ l, 600 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

SELECT PRODUCT CITATIONS

1. Viswanathan, K., et al. 2017. Quantitative membrane proteomics reveals a role for tetraspanin enriched microdomains during entry of human cytomegalovirus. *PLoS ONE* 12: e0187899.

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.