SANTA CRUZ BIOTECHNOLOGY, INC.

CD151 siRNA (m): sc-42830

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 β1, β3, β4, α2, α3, α5, and α6 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-Glu 213 of CD151 is the interface through which integrins α3/β1 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 tetra-span 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. Sincock, 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.
4. Sterk, L.M., et al. 2000. The tetraspan molecule CD151, a novel constituent of hemidesmosomes, associates with the integrin α6/β4 and may regulate the spatial organization of hemidesmosomes. J. Cell Biol. 149: 969-982.
5. Geary, S.M., et al. 2001. Differential tissue expression of epitopes of the tetraspanin CD151 recognized by monoclonal antibodies. Tissue Antigens 58: 141-153.

CHROMOSOMAL LOCATION

Genetic locus: Cd151 (mouse) mapping to 7 F5.

PRODUCT

CD151 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 CD151 shRNA Plasmid (m): sc-42830-SH and CD151 shRNA (m) Lentiviral Particles: sc-42830-V as alternate gene silencing products.

For independent verification of CD151 (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-42830A, sc-42830B and sc-42830C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

CD151 siRNA (m) is recommended for the inhibition of CD151 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 CD151 gene expression knockdown using RT-PCR Primer: CD151 (m)-PR: sc-42830-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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