SANTA CRUZ BIOTECHNOLOGY, INC.

CD7 siRNA (h): sc-35021

BACKGROUND

CD7 (also designated T cell leukemia antigen) is a type I transmembrane glycoprotein that is expressed on pluripotential hemapoietic cells, most human thymocytes and some peripheral blood T cells. CD7 is a marker for pluripotential stem cell leukemias and T cell acute lymphocytic leukemia. A role for CD7 in the activation of T cells with γ/δ receptors has been suggested. CD8 T cells from patients infected with HIV-1 displayed profound down-modulation of CD7 expression as compared with healthy subjects. CD7 is among the pan-T-cell antigens down-regulated in acute infectious mononucleosis.

REFERENCES

1. Haynes, B.F., et al. 1989. Ontogeny of T cell precursors: a model for the initial stages of human T cell development. Immunol. Today 10: 87-91.
2. Barcena, A., et al. 1995. Tracing the expression of CD7 and other antigens during T and myeloid cell differentiation in the human fetal liver and thymus. Leuk. Lymphoma 17: 1-11.
3. Schanberg, L.E., et al. 1995. Characterization of human CD7 transgenic mice. J. Immunol. 155: 2407-2418.
4. Leta, E., et al. 1995. Production and characterization of the extracellular domain of human CD7 antigen: further evidence that CD7 has a role in T cell signaling. Cell. Immunol. 165: 101-109.
5. Ward, S.G., et al. 1995. Antibody ligation of CD7 leads to association with phosphoinositide 3-kinase and phosphatidylinositol 3,4,5-triphosphate formation in T lymphocytes. Eur. J. Immunol. 25: 502-507.
6. Weisberger, J., et al. 2003. Down-regulation of pan-T-cell antigens, particularly CD7, in acute infectious mononucleosis. Am. J. Clin. Pathol. 120: 49-55.
7. Tiftik, N., et al. 2004. The importance of CD7 and CD56 antigens in acute leukaemias. Int. J. Clin. Pract. 58: 149-152.
8. Aandahl, E.M., et al. 2004. Expansion of $CD7^{low}$ and $CD7^{negative}$ CD8 T-cell effector subsets in HIV-1 infection: correlation with antigenic load and reversion by antiretroviral treatment. Blood 104: 3672-3678.

CHROMOSOMAL LOCATION

Genetic locus: CD7 (human) mapping to 17q25.3.

PRODUCT

CD7 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CD7 shRNA Plasmid (h): sc-35021-SH and CD7 shRNA (h) Lentiviral Particles: sc-35021-V as alternate gene silencing products.

For independent verification of CD7 (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-35021A, sc-35021B and sc-35021C.

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

CD7 siRNA (h) is recommended for the inhibition of CD7 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.

GENE EXPRESSION MONITORING

CD7 (CBC.37): sc-59108 is recommended as a control antibody for monitoring of CD7 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 CD7 gene expression knockdown using RT-PCR Primer: CD7 (h)-PR: sc-35021-PR (20 µl, 396 bp). 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.