SANTA CRUZ BIOTECHNOLOGY, INC.

CD72 siRNA (h): sc-37250

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The Power to Question

BACKGROUND

CD5 has been identified as a transmembrane glycoprotein that is expressed on 70% of normal peripheral blood lymphocytes and on virtually all T lymphocytes in thymus and peripheral blood. Activation of T cells through the T cell receptor (TCR) results in tyrosine phosphorylation of CD5, and the absence of CD5 renders T cells hyper-responsive to TCR-mediated activation. CD5 associates with the TCR/CD3 ζ chain, and with the Src family kinase, Lck p56. The C-type lectin superfamily member CD72 is a cell surface negative regulator of B cell activation from the pro-B through the mature B cell stage. CD72 serves as a receptor for CD5. The ability of lymphocytes to respond to antigenic or mitogenic stimulation utilizes both positive and negative regulatory proteins that influence the threshold for responsiveness. The human CD72 gene maps to chromosome 9p13.3 and encodes a transmembrane glycoprotein that contains an immunoreceptor tyrosine-based inhibition motif (ITIM). Upon tyrosine phosphorylation, the CD72 ITIM recruits SH2-containing phosphatases such as SHP-1, resulting in downregulation of cell activation. $CD72^{-/-}$ mice contain hyperproliferative B cells.

REFERENCES

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2. Schlossman, S., et al, eds. 1995. Leucocyte Typing V. Oxford: Oxford University Press.
3. Ying, H., et al. 1998. Regulation of mouse CD72 gene expression during B lymphocyte development. J. Immunol. 161: 4760-4767.
4. Wu, Y., et al. 1998. The B cell transmembrane protein CD72 binds to and is an *in vivo* substrate of the protein tyrosine phosphatase SHP-1. Curr. Biol. 8: 1009-1017.
5. Pan, C., et al. 1999. CD72-deficient mice reveal nonredundant roles of CD72 in B cell development and activation. Immunity 11: 495-506.
6. Parnes, J.R., et al. 2000. CD72, a negative regulator of B cell responsiveness. Immunol. Rev. 176: 75-85.
7. Wu, H.J., et al. 2002. Positive and negative roles of CD72 in B cell function. Immunol. Res. 25: 155-166.

CHROMOSOMAL LOCATION

Genetic locus: CD72 (human) mapping to 9p13.3.

PRODUCT

CD72 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 CD72 shRNA Plasmid (h): sc-37250-SH and CD72 shRNA (h) Lentiviral Particles: sc-37250-V as alternate gene silencing products.

For independent verification of CD72 (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-37250A, sc-37250B and sc-37250C.

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

CD72 siRNA (h) is recommended for the inhibition of CD72 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

CD72 (G-5): sc-25265 is recommended as a control antibody for monitoring of CD72 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 CD72 gene expression knockdown using RT-PCR Primer: CD72 (h)-PR: sc-37250-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.

PROTOCOLS

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