

CD2 siRNA (h): sc-29970

BACKGROUND

CD2 (also designated E-rosette receptor) interacts through its amino-terminal domain with the extracellular domain of CD58 (also designated CD2 ligand) to mediate cell adhesion. CD2/CD58 binding can enhance antigen-specific T cell activation. CD2 is a transmembrane glycoprotein that is expressed on peripheral blood T lymphocytes, NK cells and thymocytes, as well as on mouse B cells and rat splenic macrophages. CD58 is a heavily glycosylated protein with a broad tissue distribution in hematopoietic and other cells, including endothelium. Interaction between CD2 and its counterreceptor LFA3 (CD58) on opposing cells optimizes immune system recognition, thereby facilitating communication between helper T lymphocytes and antigen-presenting cells, as well as between cytolytic effectors and target cells.

REFERENCES

1. Shaw, A.S., et al. 1997. Making the T cell receptor go the distance: a topological view of T cell activation. *Immunity* 6: 361-369.
2. Dustin, M.L., et al. 1998. A novel adaptor protein orchestrates receptor patterning and cytoskeletal polarity in T cell contacts. *Cell* 94: 667-677.
3. Nishizawa, K., et al. 1998. Identification of a proline-binding motif regulating CD2-triggered T lymphocyte activation. *Proc. Natl. Acad. Sci. USA* 95: 14897-14902.
4. Shih, N.Y., et al. 1999. Congenital nephrotic syndrome in mice lacking CD2-associated protein. *Science* 286: 312-315.
5. Guan, F., et al. 2006. Autocrine VEGF-A system in podocytes regulates podocin and its interaction with CD2AP. *Am. J. Physiol. Renal Physiol.* 291: F422-F428.
6. Fan, Q., et al. 2006. The relationship among nephrin, podocin, CD2AP and α -actinin might not be a true "interaction" in podocyte. *Kidney Int.* 69: 1207-1215.

CHROMOSOMAL LOCATION

Genetic locus: CD2 (human) mapping to 1p13.1.

PRODUCT

CD2 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 CD2 shRNA Plasmid (h): sc-29970-SH and CD2 shRNA (h) Lentiviral Particles: sc-29970-V as alternate gene silencing products.

For independent verification of CD2 (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-29970A, sc-29970B and sc-29970C.

PROTOCOLS

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

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

CD2 shRNA (h) Lentiviral Particles is recommended for the inhibition of CD2 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

CD2 (MT910): sc-19638 is recommended as a control antibody for monitoring of CD2 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 CD2 gene expression knockdown using RT-PCR Primer: CD2 (h)-PR: sc-29970-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, Y., et al. 2021. *Tripterygium wilfordii* derivative LLDT-8 targets CD2 in the treatment of rheumatoid arthritis. *Biomed. Rep.* 15: 81.

RESEARCH USE

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