

CD21 siRNA (h): sc-29974

BACKGROUND

CD21 is a type I integral membrane glycoprotein that serves as a receptor for the C3d complement fragment and for the Epstein-Barr virus. It plays a role in B cell activation and proliferation and undergoes phosphorylation after B cell activation with phorbol esters. CD21 is expressed on mature B cells, follicular dendritic cells, pharyngeal and cervical epithelial cells and a subset of thymocytes. The adaptive immune response is tightly regulated to limit responding cells in an antigen-specific manner. On B cells, co-receptors CD21/CD19 modulate the strength of B cell Ag receptor (BCR) signals, thereby influencing cell fate. Complement receptor (CR) type 2 (CR2/CD21) is normally expressed during the immature and mature stages of B cell development. In association with CD19, CR21 plays an important role in enhancing mature B cell responses to foreign antigens.

REFERENCES

1. Tanner, J., et al. 1987. Epstein-Barr virus gp350/220 binding to the B lymphocyte C3d receptor mediates adsorption, capping and endocytosis. *Cell* 50: 203-213.
2. Ahearn, J.M., et al. 1989. Structure and function of the complement receptors, CR1 (CD35) and CR2 (CD21). *Adv. Immunol.* 46: 183-219.
3. Tedder, Z.F., et al. 1994. The CD19/CD21 signal transduction complex of B lymphocytes. *Immunol. Today* 15: 437-442.
4. Molina, H., et al. 1995. Characterization of a complement receptor 2 (CR2, CD21) ligand binding site for C3. An initial model of ligand interaction with two linked short consensus repeat modules. *J. Immunol.* 154: 5426-5435.
5. Roberts, M.L., et al. 1996. Epstein-Barr virus binding to CD21, the virus receptor, activates resting B cells via an intracellular pathway that is linked to B cell infection. *J. Gen. Virol.* 77: 3077-3085.
6. Sugano, N., et al. 1997. Epstein-Barr virus binding to CD21 activates the initial viral promoter via NF κ B induction. *J. Exp. Med.* 186: 731-737.
7. Shubinsky, G., et al. 1997. Pathways controlling the expression of surface CD21 (CR2) and CD23 (Fc ϵ RII) proteins in human malignant B cells. *Leuk. Lymph.* 25: 521-530.

CHROMOSOMAL LOCATION

Genetic locus: CR2 (human) mapping to 1q32.2.

PRODUCT

CD21 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 CD21 shRNA Plasmid (h): sc-29974-SH and CD21 shRNA (h) Lentiviral Particles: sc-29974-V as alternate gene silencing products.

For independent verification of CD21 (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-29974A, sc-29974B and sc-29974C.

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

CD21 siRNA (h) is recommended for the inhibition of CD21 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

CD21 (A-3): sc-13135 is recommended as a control antibody for monitoring of CD21 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 CD21 gene expression knockdown using RT-PCR Primer: CD21 (h)-PR: sc-29974-PR (20 μ l). 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.