

CD8- α siRNA (h2): sc-35028

BACKGROUND

The T cell receptor (TCR) is a heterodimer composed of either α and β or γ and δ chains. CD3 chains and the CD4 or CD8 (CD8- α and CD8- β) co-receptors are also required for efficient signal transduction through the TCR. The TCR is expressed on T helper and T cytotoxic cells that can be distinguished by their expression of CD4 and CD8 proteins; T helper cells express CD4 proteins and T cytotoxic cells display CD8 proteins. CD8s are cell surface glycoproteins that exist as two chain complex ($\alpha\alpha$ or $\alpha\beta$) receptors that bind class I MHC molecules presented by the antigen-presenting cell (APC). A primary function of CD8 proteins is to facilitate antigen recognition by the TCR and to strengthen the avidity of the TCR-antigen interactions. An additional role for CD8-expressing T cells may be to maintain low levels of HIV expression.

REFERENCES

1. Nakayama, K., et al. 1989. Structure and expression of the gene encoding CD8 α chain (Leu-2/T8). *Immunogenetics* 30: 393-397.
2. Allison, J.P., et al. 1991. The immunobiology of T cells with invariant γ δ antigen regions. *Annu. Rev. Immunol.* 9: 679-705.
3. Zuniga-Pflucker, J.C., et al. 1991. CD4 and CD8 act as co-receptors during thymic selection of the T cell repertoire. *Semin. Immunol.* 3: 167-175.
4. Fleury, S.G., et al. 1991. CD4 and CD8 recognition of class II and class I molecules of the major histocompatibility complex. *Semin. Immunol.* 3: 177-185.
5. Janeway, C.A., Jr. 1992. The T cell receptor as a multicomponent signalling machine: CD4/CD8 coreceptors and CD45 in T cell activation. *Annu. Rev. Immunol.* 10: 645-674.
6. Julius, M., et al. 1993. Distinct roles for CD4 and CD8 as co-receptors in antigen receptor signalling. *Immunol. Today* 14: 177-183.
7. Buseyne, F., et al. 1993. HIV-specific CD8⁺ T-cell immune responses and viral replication. *AIDS* 7: S81-S85.
8. Ehrlich, E.W., et al. 1993. T cell receptor interaction with peptide/major histocompatibility complex (MHC) and superantigen MHC ligands is dominated by antigen. *J. Exp. Med.* 178: 713-722.

CHROMOSOMAL LOCATION

Genetic locus: CD8A (human) mapping to 2p11.2.

PRODUCT

CD8- α siRNA (h2) 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 CD8- α shRNA Plasmid (h2): sc-35028-SH and CD8- α shRNA (h2) Lentiviral Particles: sc-35028-V as alternate gene silencing products.

For independent verification of CD8- α (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35028A, sc-35028B and sc-35028C.

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

CD8- α siRNA (h2) is recommended for the inhibition of CD8- α 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

CD8- α (D-9): sc-7970 is recommended as a control antibody for monitoring of CD8- α 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 CD8- α gene expression knockdown using RT-PCR Primer: CD8- α (h2)-PR: sc-35028-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.