SANTA CRUZ BIOTECHNOLOGY, INC.

Ly-6C siRNA (m): sc-42943

BACKGROUND

The gene encoding the mouse alloantigen, Ly-6C, maps to chromosome 15 and encodes a 131 amino acid protein that belongs to the Ly-6 family of glycosyl-phosphatidylinositol (GPI)-linked proteins. Ly-6 family members share amino acid homology throughout a distinctive cysteine rich protein domain that incorporates O-linked carbohydrates. Murine Ly-6 molecules have unique patterns of tissue expression during hematopoiesis from multipotential stem cells to lineage committed precursor cells, and on specific leukocyte subpopulations in the peripheral lymphoid tissues. Ly-6C is predominantly expressed on murine peripheral CD8 T cells. Ly-6C is involved in endothelial adhesion, the killing of target cells by CTLs, inducing TCR-mediated activation of IL-2 and IFN-γ production in CD8 T cells and the homing of CD8 T cells. In addition, Ly-6C may act as a signaling molecule of LFA-1 activation.

REFERENCES

1. Philbrick, W.M., et al. 1990. A recombination event in the 5' flanking region of the Ly-6C gene correlates with impaired expression in the NOD, NZB and ST strains of mice. EMBO J. 9: 2485-2492.
2. Classon, B.J., et al. 1994. Mouse stem cell antigen Sca-2 is a member of the Ly-6 family of cell surface proteins. Proc. Natl. Acad. Sci. USA 91: 5296-5300.
3. Gumley, T.P., et al. 1995. Tissue expression, structure and function of the murine Ly-6 family of molecules. Immunol. Cell Biol. 73: 277-296.
4. Takikawa, O., et al. 1996. Multiple expression of Ly-6C and accumulation of a Ly-6C pre-mRNA in activated macrophages involved in rejection of an allografted tumor. Biochem. Biophys. Res. Commun. 226: 247-253.
5. Classon, B.J., et al. 1998. Thymic-shared antigen-1 (TSA-1). A lymphostromal cell membrane Ly-6 superfamily molecule with a putative role in cellular adhesion. Dev. Immunol. 6: 149-156.
6. Ding, L., et al. 2001. Inhibition of the function of the FcγRIIB by a monoclonal antibody to thymic shared antigen-1, a Ly-6 family antigen. Immunology 104: 28-36.
7. Zammit, D.J., et al. 2002. Essential role for the lymphostromal plasma membrane Ly-6 superfamily molecule thymic shared antigen 1 in development of the embryonic adrenal gland. Mol. Cell. Biol. 22: 946-952.

CHROMOSOMAL LOCATION

Genetic locus: Ly6c1 (mouse) mapping to 15 D3.

PRODUCT

Ly-6C siRNA (m) 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 Ly-6C shRNA Plasmid (m): sc-42943-SH and Ly-6C shRNA (m) Lentiviral Particles: sc-42943-V as alternate gene silencing products.

For independent verification of Ly-6C (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42943A, sc-42943B and sc-42943C.

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

Ly-6C siRNA (m) is recommended for the inhibition of Ly-6C expression in mouse 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

Ly-6C (G-3): sc-271811 is recommended as a control antibody for monitoring of Ly-6C 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 Ly-6C gene expression knockdown using RT-PCR Primer: Ly-6C (m)-PR: sc-42943-PR (20 µl, 449 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.