

ICAM-1 siRNA (m): sc-29355

BACKGROUND

Cell adhesion molecules (CAMs) are a family of closely related cell surface glycoproteins involved in cell-cell interactions during growth and are thought to play important, yet separate, roles in embryogenesis and development. The intracellular adhesion molecule-1 (ICAM-1), also referred to as CD54, is an integral membrane protein of the immunoglobulin superfamily and recognizes the $\beta 2\alpha 1$ and $\beta 2\alpha M$ Integrins. ICAM-2 functions as a ligand for lymphocyte function-associated antigen-1 (LFA-1) and is involved in leukocyte adhesion. ICAM-3 is highly expressed on the surface of human eosinophils, and when bound to ligand may inhibit eosinophil inflammatory responses and survival. ICAM-4, also known as LW glycoprotein, interacts with Integrins $\alpha\beta 2$, $\alpha M\beta 2$, $\alpha 4\beta 1$, the αV family and $\alpha IIb\beta 3$, and selective binding to different Integrins may be relevant to the pathology in a number of red blood cell associated diseases. Lastly, ICAM-5, expressed on telencephalic neurons, binds CD11a/CD18 and thus may act as an adhesion molecule for leukocyte binding in the central nervous system.

REFERENCES

1. Jorgensen, O.S. 1995. Neural cell adhesion molecule (NCAM) as a quantitative marker in synaptic remodeling. *Neurochem. Res.* 20: 533-547.
2. Edelman, G.M. and Jones, F.S. 1995. Developmental control of N-CAM expression by Hox and Pax gene products. *Philos. Trans. R. Soc. Lond., B, Biol. Sci.* 349: 305-312.

CHROMOSOMAL LOCATION

Genetic locus: *Icam1* (mouse) mapping to 9 A3.

PRODUCT

ICAM-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ICAM-1 shRNA Plasmid (m): sc-29355-SH and ICAM-1 shRNA (m) Lentiviral Particles: sc-29355-V as alternate gene silencing products.

For independent verification of ICAM-1 (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-29355A, sc-29355B and sc-29355C.

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

ICAM-1 siRNA (m) is recommended for the inhibition of ICAM-1 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 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.

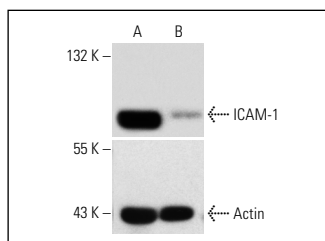
GENE EXPRESSION MONITORING

ICAM-1 (G-5): sc-8439 is recommended as a control antibody for monitoring of ICAM-1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ICAM-1 gene expression knockdown using RT-PCR Primer: ICAM-1 (m)-PR: sc-29355-PR (20 μ l, 510 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



ICAM-1 siRNA (m): sc-29355. Western blot analysis of ICAM-1 expression in non-transfected control (A) and ICAM-1 siRNA transfected (B) RAW 264.7 cells. Blot probed with ICAM-1 (M-19): sc-1511. Actin (I-19): sc-1616 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Olaku, V., et al. 2011. c-Met recruits ICAM-1 as a coreceptor to compensate for the loss of CD44 in Cd44 null mice. *Mol. Biol. Cell* 22: 2777-2786.
2. Gu, W., et al. 2017. ICAM-1 regulates macrophage polarization by suppressing MCP-1 expression via miR-124 upregulation. *Oncotarget* 8: 111882-111901.
3. Zhong, H., et al. 2021. Macrophage ICAM-1 functions as a regulator of phagocytosis in LPS induced endotoxemia. *Inflamm. Res.* E-published.

RESEARCH USE

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