

# ICAM-1 siRNA (h): sc-29354

## 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  $\alpha L\beta 2$ ,  $\alpha M\beta 2$ ,  $\alpha 4\beta 1$ , the  $\alpha V$  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.

## CHROMOSOMAL LOCATION

Genetic locus: ICAM1 (human) mapping to 19p13.2.

## PRODUCT

ICAM-1 siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu M$  solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ICAM-1 shRNA Plasmid (h): sc-29354-SH and ICAM-1 shRNA (h) Lentiviral Particles: sc-29354-V as alternate gene silencing products.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ} C$  with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ} C$ , avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu l$  of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu l$  of RNase-free water makes a 10  $\mu M$  solution in a 10  $\mu M$  Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ICAM-1 siRNA (h) is recommended for the inhibition of ICAM-1 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  $\mu M$  in 66  $\mu l$ . 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 (h)-PR: sc-29354-PR (20  $\mu l$ , 435 bp). Annealing temperature for the primers should be  $55-60^{\circ} C$  and the extension temperature should be  $68-72^{\circ} C$ .

## SELECT PRODUCT CITATIONS

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4. 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.
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7. Hou, C.H., et al. 2014. Transforming growth factor  $\alpha$  promotes osteosarcoma metastasis by ICAM-1 and PI3K/Akt signaling pathway. *Biochem. Pharmacol.* 89: 453-463.
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10. Yan, M., et al. 2017. Endothelial cell SHP-2 negatively regulates neutrophil adhesion and promotes transmigration by enhancing ICAM-1-VE-cadherin interaction. *FASEB J.* 31: 4759-4769.
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## RESEARCH USE

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