SANTA CRUZ BIOTECHNOLOGY, INC.

ESM-1 siRNA (m): sc-77330

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The Power to Question

BACKGROUND

Endothelial cell specific molecule-1 (ESM-1) is a proteoglycan secreted by endothelial cells and its mRNA expression is regulated by inflammatory cytokines. The secreted form of ESM-1 is posttranslationally modified. ESM-1 is expressed in human lung and kidney tissues and is mainly localized in the vascular endothelium both *in vitro* and *in vivo*. ESM-1 binds directly to LFA-1, which is an $\alpha\beta$ heterodimeric transmembrane glycoprotein consisting of an αL subunit (CD11a) and a β2 subunit (CD18) onto the cell surface of human blood lymphocytes, monocytes and Jurkat cells. The major counterparts of LFA-1 are ICAM-1, ICAM-2 and ICAM-3. ESM-1 and ICAM-1 interact with LFA-1 on binding sites very close to but distinct from the I domain of CD11a, suggesting that ESM-1 may influence both the recruitment of circulating lymphocytes to the inflammatory sites and LFA-1 dependent leukocyte adhesion and activation.

REFERENCES

1. Hynes, R.O. 1992. Integrins: versatility, modulation, and signaling in cell adhesion. Cell 69: 11-25.
2. Diamond, M.S. and Springer, T.A. 1994. The dynamic regulation of integrin adhesiveness. Curr. Biol. 4: 506-517.
3. Lassalle, P., Molet, S., Janin, A. Heyden, J.V., Tavernier, J., Fiers, W., Devos, R. and Tonnel, A.B. 1996. ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by cytokines. J. Biol. Chem. 271: 20458-20464.
4. Bechard, D., et al. 2000. Characterization of the secreted form of endothelial cell specific molecule-1 by specific monoclonal antibodies. J. Vasc. Res. 37: 417-425.
5. Bechard, D., et al. 2001. Human endothelial cell specific molecule-1 binds directly to the integrin CD11a/CD18 (LFA-1) and blocks binding to intercellular adhesion molecule-1. J. Immunol. 167: 3099-3106.

CHROMOSOMAL LOCATION

Genetic locus: Esm1 (mouse) mapping to 13 D2.2.

PRODUCT

ESM-1 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ESM-1 shRNA Plasmid (m): sc-77330-SH and ESM-1 shRNA (m) Lentiviral Particles: sc-77330-V as alternate gene silencing products.

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.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ESM-1 gene expression knockdown using RT-PCR Primer: ESM-1 (m)-PR: sc-77330-PR (20 µl, 528 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.