

ESM-1 (C-20): sc-20344



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 α L subunit (CD11a) and a β 2 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

- Hynes, R.O. 1992. Integrins: versatility, modulation, and signaling in cell adhesion. *Cell* 69: 11-25.
- Diamond, M.S. and T.A. Springer. 1994. The dynamic regulation of integrin adhesiveness. *Curr. Biol.* 4: 506-517.
- Lassalle, P., et al. 1996. ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by cytokines. *J. Biol. Chem.* 271: 20458-20464.
- Bechar, 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.
- Bechar, 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 (human) mapping to 5q11.2; Esm1 (mouse) mapping to 13 D2.2.

SOURCE

ESM-1 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ESM-1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20344 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

ESM-1 (C-20) is recommended for detection of ESM-1 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ESM-1 (C-20) is also recommended for detection of ESM-1 in additional species, including equine and canine.

Suitable for use as control antibody for ESM-1 siRNA (h): sc-40543, ESM-1 siRNA (m): sc-77330, ESM-1 shRNA Plasmid (h): sc-40543-SH, ESM-1 shRNA Plasmid (m): sc-77330-SH, ESM-1 shRNA (h) Lentiviral Particles: sc-40543-V and ESM-1 shRNA (m) Lentiviral Particles: sc-77330-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Almog, N., et al. 2009. Transcriptional switch of dormant tumors to fast-growing angiogenic phenotype. *Cancer Res.* 69: 836-844.
- Zhang, S., et al. 2012. Induction of cell differentiation and promotion of endocan gene expression in stomach cancer by melatonin. *Mol. Biol. Rep.* 39: 2843-2849.
- Gao, J.L., et al. 2013. Tetrandrine suppresses cancer angiogenesis and metastasis in 4T1 tumor bearing mice. *Evid. Based Complement. Alternat. Med.* 2013: 265061.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **ESM-1 (C-10): sc-515304**, our highly recommended monoclonal alternative to ESM-1 (C-20).