

ESAM (G-17): sc-83142



The Power to Question

BACKGROUND

As a member of the immunoglobulin superfamily, ESAM (Endothelial cell-selective adhesion molecule) is a 390 amino acid junctional-type cellular adhesion protein that mediates homophilic reactions between endothelial cells. ESAM regulates endothelial permeability and angiogenesis and also participates in migration of neutrophils through the vessel wall by influencing endothelial cell contacts. After platelet activation, ESAM localizes to platelets in order to limit thrombus growth and stability, thereby optimizing the hemostatic response following vascular injury. This evidence suggests that ESAM may function as a mediator of atherosclerosis. Also, there is potential for ESAM to play a role in the regulation of tumor metastasis by promoting endothelial cell migration and tube formation in metastatic nodules.

REFERENCES

1. Wegmann, F., Petri, B., Khandoga, A.G., Moser, C., Khandoga, A., Volkery, S., Li, H., Nasdala, I., Brandau, O., Fässler, R., Butz, S., Krombach, F. and Vestweber, D. 2006. ESAM supports neutrophil extravasation, activation of Rho, and VEGF-induced vascular permeability. *J. Exp. Med.* 203: 1671-1677.
2. Rohatgi, A., Owens, A.W., Khera, A., Ayers, C.R., Banks, K., Das, S.R., Berry, J.D., McGuire, D.K. and de Lemos, J.A. 2009. Differential associations between soluble cellular adhesion molecules and atherosclerosis in the Dallas Heart Study: a distinct role for soluble endothelial cell-selective adhesion molecule. *Arterioscler. Thromb. Vasc. Biol.* 29: 1684-1690.
3. Mikkola, H. 2009. ESAM: adding to the hematopoietic toolbox. *Blood* 113: 2871-2872.
4. Yokota, T., Oritani, K., Butz, S., Kokame, K., Kincade, P.W., Miyata, T., Vestweber, D. and Kanakura, Y. 2009. The endothelial antigen ESAM marks primitive hematopoietic progenitors throughout life in mice. *Blood* 113: 2914-2923.
5. Rivera, J., Lozano, M.L., Navarro-Núñez, L. and Vicente, V. 2009. Platelet receptors and signaling in the dynamics of thrombus formation. *Haematologica* 94: 700-711.
6. Khandoga, A., Huettinger, S., Khandoga, A.G., Li, H., Butz, S., Jauch, K.W., Vestweber, D. and Krombach, F. 2009. Leukocyte transmigration in inflamed liver: A role for endothelial cell-selective adhesion molecule. *J. Hepatol.* 50: 755-765.
7. Stalker, T.J., Wu, J., Morgans, A., Traxler, E.A., Wang, L., Chatterjee, M.S., Lee, D., Quertermous, T., Hall, R.A., Hammer, D.A., Diamond, S.L. and Brass, L.F. 2009. Endothelial cell specific adhesion molecule (ESAM) localizes to platelet-platelet contacts and regulates thrombus formation *in vivo*. *J. Thromb. Haemost.* 7: 1886-1896.
8. Hara, T., Ishida, T., Cangara, H.M. and Hirata, K. 2009. Endothelial cell-selective adhesion molecule regulates albuminuria in diabetic nephropathy. *Microvasc. Res.* 77: 348-355.
9. Cangara, H.M., Ishida, T., Hara, T., Sun, L., Toh, R., Rikitake, Y., Kundu, R.K., Quertermous, T., Hirata, K.I. and Hayashi, Y. 2010. Role of endothelial cell-selective adhesion molecule in hematogenous metastasis. *Microvasc. Res.* E-published.

CHROMOSOMAL LOCATION

Genetic locus: Esam (mouse) mapping to 9 A4.

SOURCE

ESAM (G-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of ESAM of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-83142 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ESAM (G-17) is recommended for detection of ESAM of 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).

Suitable for use as control antibody for ESAM siRNA (m): sc-77287, ESAM shRNA Plasmid (m): sc-77287-SH and ESAM shRNA (m) Lentiviral Particles: sc-77287-V.

Molecular Weight of ESAM: 41 kDa.

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.

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.

PROTOCOLS

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