

VCAM-1 (1.BB.619): sc-73252

BACKGROUND

Cell adhesion molecules are a family of closely related cell surface glycoproteins involved in cell-cell interactions during growth and are thought to play an important role in embryogenesis and development. Neuronal cell adhesion molecule (NCAM) expression is observed in a variety of human tumors including neuroblastomas, rhabdomyosarcomas, Wilms' tumors, Ewing's sarcomas and some primitive myeloid malignancies. The intracellular adhesion molecule-1 (ICAM-1), also referred to as CD54, is an integral membrane protein of the immunoglobulin superfamily and recognizes the B2 α 1 and B2 α M Integrins. PECAM-1 (platelet/endothelial cell adhesion molecule-1), also referred to as CD31, is a glycoprotein expressed on the cell surfaces of monocytes, neutrophils, platelets and a subpopulation of T cells. VCAM-1 (vascular cell adhesion molecule-1) was first identified as an adhesion molecule induced on human endothelial cells by inflammatory cytokines such as IL-1, tumor necrosis factor (TNF) and lipopolysaccharide (LPS). The KALIG gene encodes a nerve cell adhesion molecule (NCAM)-like protein and is deleted in 66% of patients with Kallmann's syndrome, anosmia with secondary hypogonadism.

REFERENCES

1. Thornhill, M.H., et al. 1991. Tumor necrosis factor combines with IL-4 or IFN- γ to selectively enhance endothelial cell adhesiveness for T cells. The contribution of vascular cell adhesion molecule-1-dependent and -independent binding mechanisms. *J. Immunol.* 146: 592-598.
2. Patel, K., et al. 1993. Vase mini-exon usage by NCAM is not restricted to tumours of neuroectodermal origin. *Int. J. Cancer* 54: 772-777.
3. Bevilacqua, M.P. 1993. Endothelial-leukocyte adhesion molecules. *Annu. Rev. Immunol.* 11: 767-804.
4. Cowen, M.A. and Green, M. 1993. The Kallmann's syndrome variant (KSV) model of the schizophrenias. *Schizophr. Res.* 9: 1-10.
5. Jorgensen, O.S. 1995. Neural cell adhesion molecule (NCAM) as a quantitative marker in synaptic remodeling. *Neurochem. Res.* 20: 533-547.
6. Edelman, G.M. and Jones, F.S. 1995. Developmental control of NCAM expression by HOX and PAX gene products. *Philos. Trans. R. Soc. Lond., B, Biol. Sci.* 349: 305-312.
7. Dominici, C., et al. 1996. Bone marrow micrometastases in a patient with localized Wilms' tumor. *Med. Pediatr. Oncol.* 26: 125-128.
8. Briskin, M.J., et al. 1996. Structural requirements for mucosal vascular addressin binding to its lymphocyte receptor α 4/ β 7. Common themes among integrin-Ig family interactions. *J. Immunol.* 156: 719-726.
9. Mayet, W.J., et al. 1996. Antibodies to proteinase 3 mediate expression of vascular cell adhesion molecule-1 (VCAM-1). *Clin. Exp. Immunol.* 103: 259-267.

CHROMOSOMAL LOCATION

Genetic locus: VCAM1 (human) mapping to 1p21.2; Vcam1 (mouse) mapping to 3 G1.

SOURCE

VCAM-1 (1.BB.619) is a rat monoclonal antibody raised against stromal cells from mouse bone marrow.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

VCAM-1 (1.BB.619) is recommended for detection of VCAM-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

VCAM-1 (1.BB.619) is also recommended for detection of VCAM-1 in additional species, including porcine.

Suitable for use as control antibody for VCAM-1 siRNA (h): sc-29519, VCAM-1 siRNA (m): sc-36810, VCAM-1 shRNA Plasmid (h): sc-29519-SH, VCAM-1 shRNA Plasmid (m): sc-36810-SH, VCAM-1 shRNA (h) Lentiviral Particles: sc-29519-V and VCAM-1 shRNA (m) Lentiviral Particles: sc-36810-V.

Molecular Weight of VCAM-1: 110 kDa.

Positive Controls: Sol8 cell lysate: sc-2249.

SELECT PRODUCT CITATIONS

1. Wang, W., et al. 2013. Glycyrrhizin protects against porcine endotoxemia through modulation of systemic inflammatory response. *Crit. Care* 17: R44.
2. Sun, J., et al. 2019. Protective effects of metformin on lipopolysaccharide-induced airway epithelial cell injury via NF κ B signaling inhibition. *Mol. Med. Rep.* 19: 1817-1823.
3. Hong, F., et al. 2021. NLRP1 in bone marrow microenvironment controls hematopoietic reconstitution after transplantation. *Transplant. Cell. Ther.* E-published.

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.



See **VCAM-1 (E-10): sc-13160** for VCAM-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.