

VAP-1 (54): sc-136334

BACKGROUND

Lymphocyte binding to vascular endothelium is a prerequisite for the movement of immune cells from the blood into lymphoid tissues and into sites of inflammation. Under inflammatory conditions, cell surface expression of VAP-1 (vascular adhesion protein-1) which is an endothelial sialoglycoprotein, is induced. VAP-1 is a type II transmembrane protein with a single transmembrane domain and N- and O-glycosylation sites in the extracellular domain. *In vivo*, VAP-1 exists predominantly as a homodimer and functions both as an enzyme (monoamine oxidase) and an adhesion molecule for lymphocytes. With the appropriate glycosylation and in the correct inflammatory setting, expression of VAP-1 on the luminal endothelial cell surface allows it to mediate lymphocyte adhesion and to function as an adhesion receptor involved in lymphocyte recirculation. VAP-1 is also expressed in all types of smooth muscle cells, except in cardiac and skeletal muscle cells. VAP-1 localized on smooth muscle cells does not support binding of lymphocytes, but it deaminates exogenous and endogenous primary amines. Soluble VAP-1 is found in circulation and its level is increased in patients who have inflammatory liver diseases.

REFERENCES

- Salminen, T.A., Smith, D.J., Jalkanen, S. and Johnson, M.S. 1998. Structural model of the catalytic domain of an enzyme with cell adhesion activity: human vascular adhesion protein-1 (HVAP-1) D4 domain is an amine oxidase. *Protein Eng.* 11: 1195-1204.
- Smith, D.J., Salmi, M., Bono, P., Hellman, J., Leu, T. and Jalkanen, S. 1998. Cloning of vascular adhesion protein-1 reveals a novel multifunctional adhesion molecule. *J. Exp. Med.* 188: 17-27.
- Kurkijarvi, R., Adams, D.H., Leino, R., Mottonen, T., Jalkanen, S. and Salmi, M. 1998. Circulating form of human vascular adhesion protein-1 (VAP-1): increased serum levels in inflammatory liver diseases. *J. Immunol.* 161: 1549-1557.
- Slami, M., Tohka, S. and Jalkanen, S. 2000. Human vascular adhesion protein-1 (VAP-1) plays a critical role in lymphocyte-endothelial cell adhesion cascade under shear. *Circ. Res.* 86: 1245-1251.
- Tohka, S., Laukkanen, M., Jalkanen, S. and Salmi, M. 2001. Vascular adhesion protein-1 (VAP-1) functions as a molecular brake during granulocyte rolling and mediates recruitment *in vivo*. *FASEB J.* 15: 373-382.

CHROMOSOMAL LOCATION

Genetic locus: AOC3 (human) mapping to 17q21.31; Aoc3 (mouse) mapping to 11 D.

SOURCE

VAP-1 (54) is a mouse monoclonal antibody raised against amino acids 36-158 of VAP-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

VAP-1 (54) is recommended for detection of VAP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

VAP-1 (54) is also recommended for detection of VAP-1 in additional species, including canine.

Suitable for use as control antibody for VAP-1 siRNA (h): sc-43197, VAP-1 siRNA (m): sc-43198, VAP-1 shRNA Plasmid (h): sc-43197-SH, VAP-1 shRNA Plasmid (m): sc-43198-SH, VAP-1 shRNA (h) Lentiviral Particles: sc-43197-V and VAP-1 shRNA (m) Lentiviral Particles: sc-43198-V.

Molecular Weight (predicted) of VAP-1: 85 kDa.

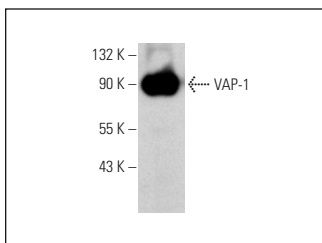
Molecular Weight (observed) of VAP-1: 110 kDa.

Positive Controls: human lung extract: sc-363767 or rat testis extract: sc-2400.

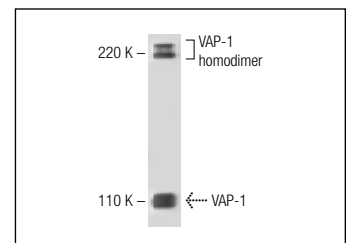
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



VAP-1 (54): sc-136334. Western blot analysis of VAP-1 expression in human lung tissue extract.



VAP-1 (54): sc-136334. Western blot analysis of VAP-1 expression in rat testis tissue extract.

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 for detailed protocols and support products.