

# VAP-1 (E-10): sc-373924

## 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., et al. 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., et al. 1998. Cloning of vascular adhesion protein 1 reveals a novel multifunctional adhesion molecule. *J. Exp. Med.* 188: 17-27.
- Kurkijarvi, R., et al. 1998. Circulating form of human vascular adhesion protein-1 (VAP-1): increased serum levels in inflammatory liver diseases. *J. Immunol.* 161: 1549-1557.

## CHROMOSOMAL LOCATION

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

## SOURCE

VAP-1 (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 703-739 near the C-terminus of VAP-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

VAP-1 (E-10) is available conjugated to agarose (sc-373924 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373924 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373924 PE), fluorescein (sc-373924 FITC), Alexa Fluor<sup>®</sup> 488 (sc-373924 AF488), Alexa Fluor<sup>®</sup> 546 (sc-373924 AF546), Alexa Fluor<sup>®</sup> 594 (sc-373924 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-373924 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-373924 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-373924 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373924 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

VAP-1 (E-10) is recommended for detection of VAP-1 and placenta amine oxidase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

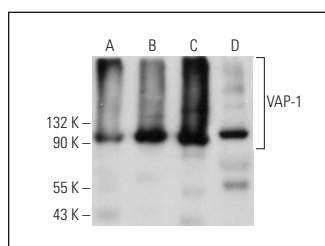
Suitable for use as control antibody for VAP-1 siRNA (h): sc-43197, VAP-1 siRNA (m): sc-43198, VAP-1 shRNA Plasmid (h): sc-43197-SH, VAP-1 shRNA Plasmid (m): sc-43198-SH, VAP-1 shRNA (h) Lentiviral Particles: sc-43197-V and VAP-1 shRNA (m) Lentiviral Particles: sc-43198-V.

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

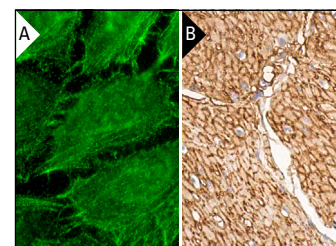
Molecular Weight (observed) of VAP-1: 110 kDa.

Positive Controls: mouse adipose tissue extract: sc-395042, human lung extract: sc-363767 or human adipose tissue extract: sc-363750.

## DATA



VAP-1 (E-10): sc-373924. Western blot analysis of VAP-1 expression in human artery (A), human lung (B), human adipose tissue (C) and mouse adipose (D) tissue extracts.



VAP-1 (E-10): sc-373924. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing membrane and cytoplasmic staining of smooth muscle cells (B).

## SELECT PRODUCT CITATIONS

- Wang, H., et al. 2021. An *in situ* activity assay for lysyl oxidases. *Commun. Biol.* 4: 840.

## 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](http://www.scbt.com) for detailed protocols and support products.

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