SANTA CRUZ BIOTECHNOLOGY, INC.

VAP-1 (A-8): sc-166713

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 lumenal 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

1. 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.
2. Smith, D.J., et al. 1998. Cloning of vascular adhesion protein 1 reveals a novel multifunctional adhesion molecule. J. Exp. Med. 188: 17-27.

CHROMOSOMAL LOCATION

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

SOURCE

VAP-1 (A-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 740-763 at the C-terminus of VAP-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

VAP-1 (A-8) is available conjugated to agarose (sc-166713 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166713 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166713 PE), fluorescein (sc-166713 FITC), Alexa Fluor® 488 (sc-166713 AF488), Alexa Fluor® 546 (sc-166713 AF546), Alexa Fluor® 594 (sc-166713 AF594) or Alexa Fluor® 647 (sc-166713 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166713 AF680) or Alexa Fluor® 790 (sc-166713 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166713 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

VAP-1 (A-8) is recommended for detection of VAP-1 and placenta copper monamine 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).

VAP-1 (A-8) is also recommended for detection of VAP-1 and placenta copper monamine oxidase in additional species, including canine.

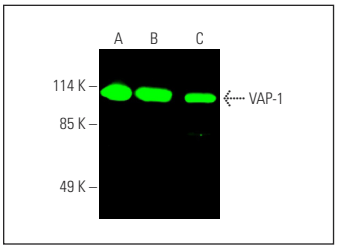
Suitable for use as control antibody for VAP-1 siRNA (h): sc-43197, VAP-1 siRNA (m): sc-43198, VAP-1 shRNA Plasmid (h): sc-43197-SH, VAP-1 shRNA Plasmid (m): sc-43198-SH, VAP-1 shRNA (h) Lentiviral Particles: sc-43197-V and VAP-1 shRNA (m) Lentiviral Particles: sc-43198-V.

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

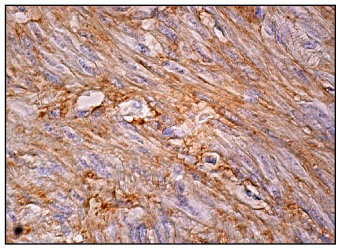
Molecular Weight (observed) of VAP-1: 110 kDa.

Positive Controls: human lung extract: sc-363767, human adrenal gland extract: sc-363761 or human heart extract: sc-363763.

DATA



VAP-1 (A-8): sc-166713. Near-infrared western blot analysis of VAP-1 expression in human lung (**A**), human adrenal gland (**B**) and human heart (**C**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



VAP-1 (A-8): sc-166713. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells.

SELECT PRODUCT CITATIONS

1. Di, Y.L., et al. 2022. Formic acid induces hypertension-related hemorrhage in $hSSAO^{TG}$ in mice and human. Exp. Neurol. 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.

PROTOCOLS

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