SANTA CRUZ BIOTECHNOLOGY, INC.

VAP-1 (TK8-14): sc-33670

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.
3. 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.
4. Slami, M., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: AOC3 (human) mapping to 17q21.31.

SOURCE

VAP-1 (TK8-14) is a mouse monoclonal antibody raised against affinity purified VAP-1 from tonsil stroma 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 (TK8-14) is available conjugated to phycoerythrin (sc-33670 PE), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

VAP-1 (TK8-14) is recommended for detection of VAP-1 of human origin by Western Blotting (starting dilution 1:200, 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) and flow cytometry (1 µg per 1 x 10^6 cells).

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

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

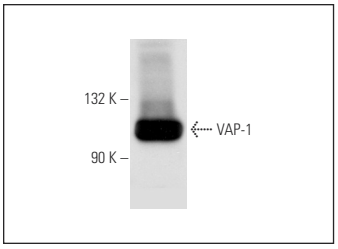
Molecular Weight (observed) of VAP-1: 110 kDa.

Positive Controls: human lung extract: sc-363767.

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, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



VAP-1 (TK8-14): sc-33670. Western blot analysis of VAP-1 expression in human lung tissue extract.

SELECT PRODUCT CITATIONS

1. Noonan, T., et al. 2013. The oxidase activity of vascular adhesion protein-1 (VAP-1) is essential for function. Am. J. Clin. Exp. Immunol. 2: 172-185.
2. Esser, C., et al. 2014. Evidence of promiscuous endothelial binding by *Plasmodium falciparum*-infected erythrocytes. Cell. Microbiol. 16: 701-708.
3. Vilhav, C., et al. 2018. Fractional uptake of circulating tumor cells into liver-lung compartments during curative resection of periampullary cancer. Oncol. Lett. 16: 6331-6338.

RESEARCH USE

For research use only, not for use in diagnostic procedures.