SANTA CRUZ BIOTECHNOLOGY, INC.

VMP1 (A-13): sc-160869

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The Power to Question

BACKGROUND

TMEM49 (transmembrane protein 49), also known as TDC1 or VMP1 (vacuole membrane protein 1), is a 406 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum-Golgi intermediate compartment membrane. Overexpression of TMEM49, a stress-induced protein, results in the formation of intracellular vacuoles followed by cell death, suggesting that TMEM49 plays an important role in the maintenance of cellular integrity. Additionally, TMEM49 may be involved in the early stages of acute pancreatitis. The gene encoding TMEM49 maps to chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Dusetti, N.J., et al. 2002. Cloning and expression of the rat vacuole membrane protein 1 (VMP1), a new gene activated in pancreas with acute pancreatitis, which promotes vacuole formation. Biochem. Biophys. Res. Commun. 290: 641-649.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611753. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Nusbaum, R., et al. 2006-2007. Susceptibility to breast cancer: hereditary syndromes and low penetrance genes. Breast Dis. 27: 21-50.
4. Ropolo, A., et al. 2007. The pancreatitis-induced vacuole membrane protein 1 triggers autophagy in mammalian cells. J. Biol. Chem. 282: 37124-37133.
5. Tai, Y.C., et al. 2007. Breast cancer risk among male BRCA1 and BRCA2 mutation carriers. J. Natl. Cancer Inst. 99: 1811-1814.
6. Yan, J., et al. 2007. BLIMP1 regulates cell growth through repression of p53 transcription. Proc. Natl. Acad. Sci. USA 104: 1841-1846.

CHROMOSOMAL LOCATION

Genetic locus: VMP1 (human) mapping to 17q23.1; Vmp1 (mouse) mapping to 11 C.

SOURCE

VMP1 (A-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of VMP1 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160869 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

VMP1 (A-13) is recommended for detection of VMP1 of mouse, rat and 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

VMP1 (A-13) is also recommended for detection of VMP1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for VMP1 siRNA (h): sc-94140, VMP1 siRNA (m): sc-154473, VMP1 shRNA Plasmid (h): sc-94140-SH, VMP1 shRNA Plasmid (m): sc-154473-SH, VMP1 shRNA (h) Lentiviral Particles: sc-94140-V and VMP1 shRNA (m) Lentiviral Particles: sc-154473-V.

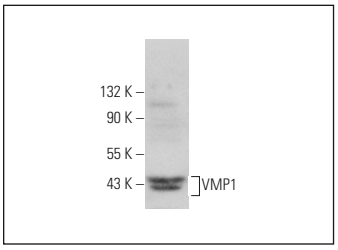
Molecular Weight of VMP1: 46 kDa.

Positive Control: A549 cell lysate: sc-2413.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), 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). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



VMP1 (A-13): sc-160869. Western blot analysis of VMP1 expression in A549 whole cell lysate.

RESEARCH USE

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