SANTA CRUZ BIOTECHNOLOGY, INC.

SMVT (H-56): sc-134522

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The sodium-dependent multivitamin transporter (SMVT) is a 635 amino acid protein that belongs to the sodium-coupled glucose transporter family. SMVT contains 12 putative transmembrane domains with the N- and C-termini both facing towards the cytoplasm. Its function is to transport the essential vitamins pantothenate, biotin and the metabolite lipoate into cells of various human tissues. Biotin, also known as vitamin B6, is important in synthesizing fatty acids gluconeogenesis, and metabolizing leucine, while pantothenate, or vitamin B5, is critical in the metabolism and synthesis of carbohydrates, proteins and fats. Lipoate is involved in oxidative metabolism. SMVT uses a specialized carrier-mediated system to take up these vitamins and metabolites into the cells. This process is active and uses energy from the transmembrane sodium ion gradient as well as the membrane potential.

REFERENCES

1. Prasad, P.D., et al. 1998. Clonin vitamin transporter mediating the uptake of pantothenate, biotin, and lipoate. J. Biol. Chem. 273: 7501-7506.
2. Prasad, P.D., et al. 1999. Molecular and functional characterization of the intestinal Na^+-dependent multivitamin transporter. Arch. Biochem. Biophys. 366: 95-106.
3. Wang, H., et al. 1999. Human placental Na^+-dependent multivitamin transporter. Cloning, functional expression, gene structure, and chromosomal localization. J. Biol. Chem. 274: 14875-14883.
4. Prasad, P.D., et al. 2000. Structure and function of mammalian sodium-dependent multivitamin transporter. Curr. Opin. Clin. Nut. Metab. Care 3: 263-266.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604024. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Balamurugan, K., et al. 2003. Biotin uptake by human intestinal and liver epithelial cells: role of the SMVT system. Am. J. Physiol. Gastrointest. Liver Physiol. 285: 73-77.

CHROMOSOMAL LOCATION

Genetic locus: SLC5A6 (human) mapping to 2p23.3.

SOURCE

SMVT (H-56) is a rabbit polyclonal antibody raised against amino acids 525-580 mapping near the C-terminus of SMVT of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

SMVT (H-56) is recommended for detection of SMVT 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SMVT (H-56) is also recommended for detection of SMVT in additional species, including equine, canine and bovine.

Suitable for use as control antibody for SMVT siRNA (h): sc-61573, SMVT shRNA Plasmid (h): sc-61573-SH and SMVT shRNA (h) Lentiviral Particles: sc-61573-V.

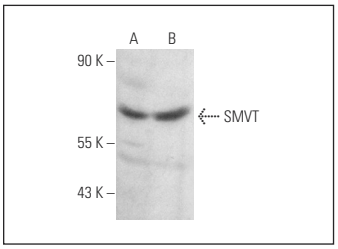
Molecular Weight of SMVT: 69 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



SMVT (H-56): sc-134522. Western blot analysis of SMVT expression in K-562 (**A**) and Hep G2 (**B**) whole cell lysates.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **SMVT (D-11): sc-390080** or **SMVT (C-9): sc-514319**, our highly recommended monoclonal alternatives to SMVT (H-56).