SANTA CRUZ BIOTECHNOLOGY, INC.

OCTN3 (C-13): sc-19825

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The Power to Question

BACKGROUND

Carnitine (β-hydroxy-γ-trimethylaminobutyrate) is a small, highly polar compound that aids in the β-oxidation of long-chain fatty acids. Organic cation/carnitine transporters (OCTN) assist in the elimination of cationic compounds, including xenobiotics, and transport carnitine for reabsorption in the kidney. Similar to organic cation transporters (OCT), OCTN proteins localize to the plasma membrane of epithelial cells. OCTN1 is expressed in kidney, trachea, bone marrow and fetal liver. OCTN2 is abundantly expressed in kidney, skeletal muscle, placenta and heart. OCTN3 is strongly expressed in testis and weakly expressed in kidney. The gene encoding human OCTN1 maps to chromosome 5 and the gene encoding human OCTN2 maps to chromosome 5q31. Mutations in the gene encoding OCTN2 leads to systemic carnitine deficiency (SCD), an autosomal recessive disorder characterized by cardiomyopathy, skeletal myopathy, lethargy, hypoglycemia and hyperammonemia.

REFERENCES

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2. Tamai, I., et al. 1998. Molecular and functional identification of sodium ion-dependent, high affinity human carnitine transporter OCTN2. J. Biol. Chem. 273: 20378-20382.
3. Wu, X., et al. 1998. cDNA sequence, transport function, and genomic organization of human OCTN2, a new member of the organic cation transporter family. Biochem. Biophys. Res. Commun. 246: 589-595.
4. Lamhonwah, A.M., et al. 1998. Carnitine uptake defect: frameshift mutations in the human plasmalemmal carnitine transporter gene. Biochem. Biophys. Res. Commun. 252: 396-401.
5. Km, L., et al. 1998. A missense mutation of mouse OCTN2, a sodium-dependent carnitine cotransporter, in the juvenile visceral steatosis mouse. Biochem. Biophys. Res. Commun. 252: 590-594.
6. Nezu, J., et al. 1999. Primary systemic carnitine deficiency is caused by mutations in a gene encoding sodium ion-dependent carnitine transporter. Nat. Genet. 21: 91-94.
7. Tamai, I., et al. 2000. Molecular and functional characterization of organic cation/carnitine transporter family in mice. J. Biol. Chem. 275: 40064-40072.
8. Tamai, I., et al. 2001. Na^+-coupled transport of L-carnitine via high-affinity carnitine transporter OCTN2 and its subcellular localization in kidney. Biochim. Biophys. Acta 1512: 273-584.

CHROMOSOMAL LOCATION

Genetic locus: Slc22a21 (mouse) mapping to 11 B1.3.

SOURCE

OCTN3 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of OCTN3 of mouse origin.

RESEARCH USE

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

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-19825 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OCTN3 (C-13) is recommended for detection of OCTN3 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for OCTN3 siRNA (m): sc-42562, OCTN3 shRNA Plasmid (m): sc-42562-SH and OCTN3 shRNA (m) Lentiviral Particles: sc-42562-V.

Molecular Weight of OCTN3: 63 kDa.

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) 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.

STORAGE

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

PROTOCOLS

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