

OCTN1/2 (H-9): sc-515731

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. 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

1. Tamai, I., et al. 1997. Cloning and characterization of a novel human pH-dependent organic cation transporter, OCTN1. *FEBS Lett.* 419: 107-111.
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. Lu, K., 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: SLC22A4/SLC22A5 (human) mapping to 5q31.1; Slc22a4/Slc22a5 (mouse) mapping to 11 B1.3.

SOURCE

OCTN1/2 (H-9) is a mouse monoclonal antibody raised against amino acids 1-130 mapping at the N-terminus of OCTN2 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 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

OCTN1/2 (H-9) is available conjugated to agarose (sc-515731 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515731 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515731 PE), fluorescein (sc-515731 FITC), Alexa Fluor[®] 488 (sc-515731 AF488), Alexa Fluor[®] 546 (sc-515731 AF546), Alexa Fluor[®] 594 (sc-515731 AF594) or Alexa Fluor[®] 647 (sc-515731 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515731 AF680) or Alexa Fluor[®] 790 (sc-515731 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

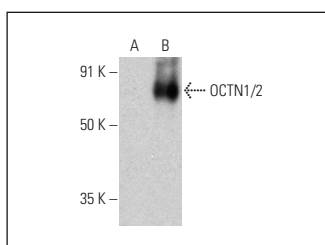
OCTN1/2 (H-9) is recommended for detection of OCTN1 and OCTN2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: OCTN1 (m): 293T Lysate: sc-125731.

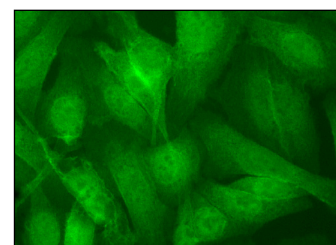
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



OCTN1/2 (H-9): sc-515731. Western blot analysis of OCTN1/2 expression in non-transfected: sc-117752 (A) and mouse OCTN1 transfected: sc-125731 (B) 293T whole cell lysates.



OCTN1/2 (H-9) Alexa Fluor[®] 488: sc-515731 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing membrane localization. Blocked with UltraCruz[®] Blocking Reagent: sc-516214.

RESEARCH USE

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