SANTA CRUZ BIOTECHNOLOGY, INC.

NPC1L1 (G-1): sc-166802

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Niemann-Pick disease type C (NPC) is an autosomal recessive disease characterized by the accumulation of unesterified cholesterol in the endosomal/lysosomal system, which results in progressive neurodegeneration and death. Niemann-Pick C1-like protein 1 precusor, or NPC1L1, is a membrane protein involved in the uptake of cholesterol at the intestinal enterocyte across the plasma membrane. NPC1L1 is widely expressed and is the target of ezetimibe, a drug involved in the inhibition of cholesterol absorption. In human, mouse and rat, small intestine tissue shows the highest level of NPC1L1 expression; expression in other tissues includes gallbladder, liver, testis and stomach. The NPC1L1 gene contains 20 exons, with an unusually large 1,526 bp exon 2, and spans approximately 29 kb. The presumed promoter region of the gene harbors a sterol-regulatory element (SRE) for SRE-binding protein, further suggesting that NPC1L1 may play a role in subcellular cholesterol homeostasis.

CHROMOSOMAL LOCATION

Genetic locus: NPC1L1 (human) mapping to 7p13; Npc1l1 (mouse) mapping to 11 A1.

SOURCE

NPC1L1 (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-40 at the N-terminus of NPC1L1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NPC1L1 (G-1) is available conjugated to agarose (sc-166802 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166802 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166802 PE), fluorescein (sc-166802 FITC), Alexa Fluor® 488 (sc-166802 AF488), Alexa Fluor® 546 (sc-166802 AF546), Alexa Fluor® 594 (sc-166802 AF594) or Alexa Fluor® 647 (sc-166802 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166802 AF680) or Alexa Fluor® 790 (sc-166802 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166802 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

NPC1L1 (G-1) is recommended for detection of NPC1L1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

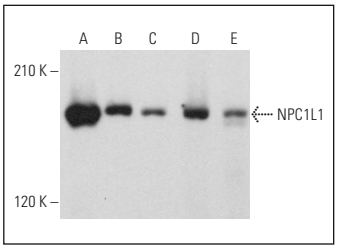
Suitable for use as control antibody for NPC1L1 siRNA (h): sc-61225, NPC1L1 siRNA (m): sc-61226, NPC1L1 shRNA Plasmid (h): sc-61225-SH, NPC1L1 shRNA Plasmid (m): sc-61226-SH, NPC1L1 shRNA (h) Lentiviral Particles: sc-61225-V and NPC1L1 shRNA (m) Lentiviral Particles: sc-61226-V.

Molecular Weight of NPC1L1: 145 kDa.

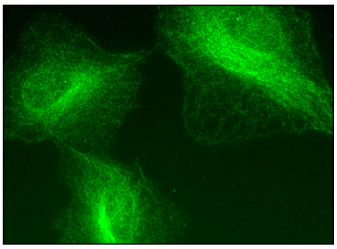
STORAGE

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

DATA



NPC1L1 (G-1): sc-166802. Western blot analysis of NPC1L1 expression in HeLa (**A**), Hep G2 (**B**) and MIA PaCa-2 (**C**) whole cell lysates and mouse liver (**D**) and human liver (**E**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



NPC1L1 (G-1): sc-166802. Immunofluorescence staining of formalin-fixed Hep G2 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Zhou, L., et al. 2014. Up-regulation of cholesterol absorption is a mechanism for cholecystokinin-induced hypercholesterolemia. J. Biol. Chem. 289: 12989-12999.
2. Concepcion, A.R., et al. 2015. $CD8^+$ T cells undergo activation and programmed death-1 repression in the liver of aged $Ae2_{a,b}^{-/-}$ mice favoring autoimmune cholangitis. Oncotarget 6: 28588-28606.
3. Schweitzer, M., et al. 2016. Characterization of the NPC1L1 gene and proteome from an exceptional responder to ezetimibe. Atherosclerosis 246: 78-86.
4. Sumigray, K.D., et al. 2018. Morphogenesis and compartmentalization of the intestinal crypt. Dev. Cell 45: 183-197.
5. Yang, Z., et al. 2019. The fucoidan A2 from the brown seaweed *Ascophyllum nodosum* lowers lipid by improving reverse cholesterol transport in C57BL/6J mice fed a high-fat diet. J. Agric. Food Chem. 67: 5782-5791.
6. Yin, J., et al. 2019. The fucoidan from the brown seaweed *Ascophyllum nodosum* ameliorates atherosclerosis in apolipoprotein E-deficient mice. Food Funct. 10: 5124-5139.
7. Peserico, D., et al. 2020. Ezetimibe prevents ischemia/reperfusion-induced oxidative stress and up-regulates Nrf2/ARE and UPR signaling pathways. Antioxidants 9: 349.
8. Yu, W.Q., et al. 2021. Polysaccharide CM1 from *Cordyceps militaris* hinders adipocyte differentiation and alleviates hyperlipidemia in $LDLR^{(+/-)}$ hamsters. Lipids Health Dis. 20: 178.

RESEARCH USE

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