SANTA CRUZ BIOTECHNOLOGY, INC.

VPS41 (E-10): sc-377271

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Vacuolar sorting proteins (VPSs) are required for proper trafficking of endocytic and biosynthetic proteins to the vacuole and play an important role in the budding process of cells. VPS41 (vacuolar protein sorting 41), also known as HVPS41, is an 854 amino acid protein that contains one clathrin repeat and one RING-type zinc finger. Existing as two alternatively spliced isoforms, designated short and long, VPS41 is required for proper vacuolar assembly and vacuolar traffic, playing a role in the formation and fusion of transport vesicles from the Golgi. The gene encoding VPS41 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to Osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, Lissencephaly, Citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

1. Radisky, D.C., et al. 1997. Characterization of VPS41, a gene required for vacuolar trafficking and high-affinity iron transport in yeast. Proc. Natl. Acad. Sci. USA 94: 5662-5666.
2. Rehling, P., et al. 1999. Formation of AP-3 transport intermediates requires Vps41 function. Nat. Cell Biol. 1: 346-353.

CHROMOSOMAL LOCATION

Genetic locus: VPS41 (human) mapping to 7p14.1; Vps41 (mouse) mapping to 13 A2.

SOURCE

VPS41 (E-10) is a mouse monoclonal antibody raised against amino acids 301-600 mapping within an internal region of VPS41 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.

APPLICATIONS

VPS41 (E-10) is recommended for detection of VPS41 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).

VPS41 (E-10) is also recommended for detection of VPS41 in additional species, including bovine.

Suitable for use as control antibody for VPS41 siRNA (h): sc-76907, VPS41 siRNA (m): sc-76908, VPS41 shRNA Plasmid (h): sc-76907-SH, VPS41 shRNA Plasmid (m): sc-76908-SH, VPS41 shRNA (h) Lentiviral Particles: sc-76907-V and VPS41 shRNA (m) Lentiviral Particles: sc-76908-V.

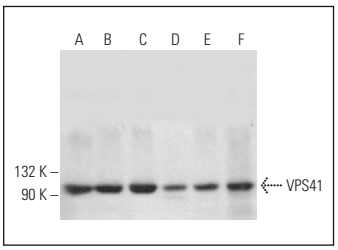
Molecular Weight of VPS41: 99 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, EOC 20 whole cell lysate: sc-364187 or C6 whole cell lysate: sc-364373.

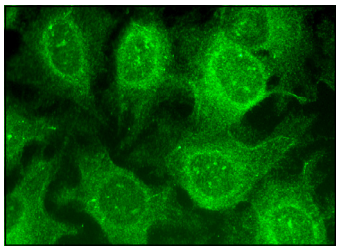
STORAGE

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

DATA



VPS41 (E-10): sc-377271. Western blot analysis of VPS41 expression in K-562 (**A**), HEL 92.1.7 (**B**), IMR-32 (**C**), EOC 20 (**D**) and C6 (**E**) whole cell lysates and mouse postnatal brain tissue extract (**F**).



VPS41 (E-10): sc-377271. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Marwaha, R., et al. 2017. The Rab7 effector PLEKHM1 binds Arl8b to promote cargo traffic to lysosomes. J. Cell Biol. 216: 1051-1070.
2. Sindhwani, A., et al. 2017. *Salmonella* exploits the host endolysosomal tethering factor HOPS complex to promote its intravacuolar replication. PLoS Pathog. 13: e1006700.
3. Ohata, H., et al. 2019. NOX1-dependent mTORC1 activation via S100A9 oxidation in cancer stem-like cells leads to colon cancer progression. Cell Rep. 28: 1282-1295.e8.
4. van der Welle, R.E.N., et al. 2021. Neurodegenerative VPS41 variants inhibit HOPS function and mTORC1-dependent TFEB/TFE3 regulation. EMBO Mol. Med. 13: e13258.
5. Jewett, C.E., et al. 2021. RAB19 directs cortical remodeling and membrane growth for primary ciliogenesis. Dev. Cell 56: 325-340.e8.
6. Hoffman, H.K., et al. 2023. HOPS-dependent lysosomal fusion controls Rab19 availability for ciliogenesis in polarized epithelial cells. bioRxiv 2023.02.07.527563.
7. Jeong, E., et al. 2024. TMEM55B links autophagy flux, lysosomal repair, and TFE3 activation in response to oxidative stress. Nat. Commun. 15: 93.
8. Vafiadaki, E., et al. 2024. The phospholamban R14del generates pathogenic aggregates by impairing autophagosome-lysosome fusion. Cell. Mol. Life Sci. 81: 450.

RESEARCH USE

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

PROTOCOLS

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