SANTA CRUZ BIOTECHNOLOGY, INC.

VPS4A (A-11): sc-393428

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Class E vacuolar protein sorting (vps) proteins are necessary for the appropriate sorting of receptors in the yeast endocytic pathway. Yeast Vps4p is a member of the AAA protein family (ATPases associated with diverse cellular activities) and plays an important role in transporting proteins out of prevacuolar endosomal compartments. In humans, two non-allelic orthologous proteins, VPS4A and VPS4B, are known and can form heteromeric complexes with each other. Both VPS4A and VPS4B are class E VPSs and are involved in intracellular protein trafficking, similar to Vps4p in yeast. HIV-1 uses cellular machinery to bud from infected cells and requires the two human VPS4 proteins and TSG 101 (tumor susceptibility gene 101) for this budding process. Dominant negative mutants of VPS4 proteins inhibit vacuolar protein sorting and also arrest HIV-1 and MLV budding. Thus, retroviruses normally use the VPS pathway to form multivesicular bodies during the budding process.

CHROMOSOMAL LOCATION

Genetic locus: VPS4A (human) mapping to 16q22.1; Vps4a (mouse) mapping to 8 D3.

SOURCE

VPS4A (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 349-370 near the C-terminus of VPS4A 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.

VPS4A (A-11) is available conjugated to agarose (sc-393428 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393428 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393428 PE), fluorescein (sc-393428 FITC), Alexa Fluor® 488 (sc-393428 AF488), Alexa Fluor® 546 (sc-393428 AF546), Alexa Fluor® 594 (sc-393428 AF594) or Alexa Fluor® 647 (sc-393428 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393428 AF680) or Alexa Fluor® 790 (sc-393428 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393428 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

VPS4A (A-11) is recommended for detection of VPS4A 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).

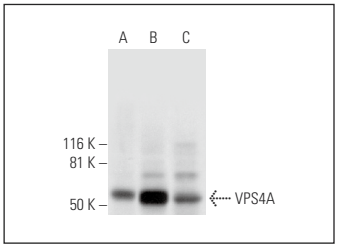
Suitable for use as control antibody for VPS4A siRNA (h): sc-106731, VPS4A siRNA (m): sc-108046, VPS4A shRNA Plasmid (h): sc-106731-SH, VPS4A shRNA Plasmid (m): sc-108046-SH, VPS4A shRNA (h) Lentiviral Particles: sc-106731-V and VPS4A shRNA (m) Lentiviral Particles: sc-108046-V.

Positive Controls: VPS4A (h2): 293T Lysate: sc-178127.

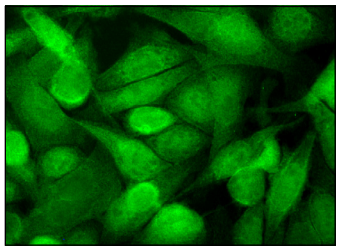
STORAGE

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

DATA



VPS4A (A-11): sc-393428. Western blot analysis of VPS4A expression in non-transfected 293T: sc-117752 (**A**), human VPS4A transfected 293T: sc-178127 (**B**) and MCF7 (**C**) whole cell lysates.



VPS4A (A-11) Alexa Fluor® 488: sc-393428 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic and nuclear localization. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Broniarczyk, J., et al. 2017. The VPS4 component of the ESCRT machinery plays an essential role in HPV infectious entry and capsid disassembly. Sci. Rep. 7: 45159.
2. Adoro, S., et al. 2017. Post-translational control of T cell development by the ESCRT protein CHMP5. Nat. Immunol. 18: 780-790.
3. Choi, H.W., et al. 2018. Perivascular dendritic cells elicit anaphylaxis by relaying allergens to mast cells via microvesicles. Science 362: eaao0666.
4. Rodger, C., et al. 2020. *De novo* VPS4A mutations cause multisystem disease with abnormal neurodevelopment. Am. J. Hum. Genet. 107: 1129-1148.
5. Kulsuptrakul, J., et al. 2021. A genome-wide CRISPR screen identifies UFMylation and TRAMP-like complexes as host factors required for hepatitis A virus infection. Cell Rep. 34: 108859.
6. Qualls-Histed, S.J., et al. 2023. Lysosomal trafficking of the glucose transporter GLUT1 requires sequential regulation by TXNIP and ubiquitin. iScience 26: 106150.
7. Erdem, M., et al. 2024. β_2-adrenoceptor agonist formoterol attenuates NLRP3 inflammasome activation and GSDMD-mediated pyroptosis in microglia through enhancing IκBα/NFκB inhibition, SQSTM1/p62-dependent selective autophagy and ESCRT-III-mediated plasma membrane repair. Mol. Cell. Neurosci. 130: 103956.
8. Umphred-Wilson, K., et al. 2024. The ESCRT protein CHMP5 promotes T cell leukemia by controlling BRD4-p300-dependent transcription. bioRxiv 2024.01.29.577409.

RESEARCH USE

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