

VPS4B (A-11): sc-377162



The Power to Question

BACKGROUND

Class E vacuolar protein sorting (vps) proteins are necessary for appropriate sorting of receptors in the yeast endocytic pathway. The 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 a prevacuolar endosomal compartment. In human, two non-allelic orthologous proteins (VPS4A and VPS4B) of yeast Vps4p are known and can form heteromeric complexes with each other. Both VPS4 (also known as SKD1 in mouse) proteins are class E VPSs and are involved in intracellular protein trafficking, similar to Vps4p in yeast. A human CHMP1 protein, which is implicated in multivesicular body formation, physically interacts with VPS4. HIV-1 uses cellular machinery to bud from infected cells and requires VPS4 and TSG101/VPS23 for this budding process. Dominant negative mutant of VPS4 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.

REFERENCES

1. Bishop, N. and Woodman, P. 2001. TSG101/mammalian VPS23 and mammalian VPS28 interact directly and are recruited to VPS4-induced endosomes. *J. Biol. Chem.* 276: 11735-11742.
2. Howard, T.L., et al. 2001. CHMP1 functions as a member of a newly defined family of vesicle trafficking proteins. *J. Cell Sci.* 114: 2395-2404.

CHROMOSOMAL LOCATION

Genetic locus: VPS4B (human) mapping to 18q21.33; Vps4b (mouse) mapping to 1 E2.1.

SOURCE

VPS4B (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 355-387 near the C-terminus of VPS4B of human origin.

PRODUCT

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

VPS4B (A-11) is available conjugated to agarose (sc-377162 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377162 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377162 PE), fluorescein (sc-377162 FITC), Alexa Fluor® 488 (sc-377162 AF488), Alexa Fluor® 546 (sc-377162 AF546), Alexa Fluor® 594 (sc-377162 AF594) or Alexa Fluor® 647 (sc-377162 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377162 AF680) or Alexa Fluor® 790 (sc-377162 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377162 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

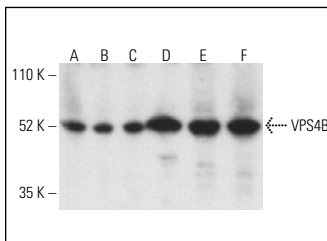
VPS4B (A-11) is recommended for detection of VPS4B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 VPS4B siRNA (h): sc-41098, VPS4B siRNA (m): sc-41099, VPS4B shRNA Plasmid (h): sc-41098-SH, VPS4B shRNA Plasmid (m): sc-41099-SH, VPS4B shRNA (h) Lentiviral Particles: sc-41098-V and VPS4B shRNA (m) Lentiviral Particles: sc-41099-V.

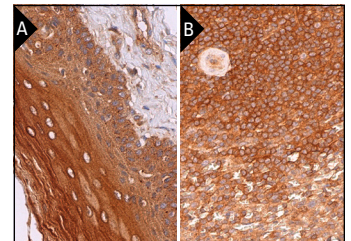
Molecular Weight of VPS4B: 49 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

DATA



VPS4B (A-11) HRP: sc-377162 HRP. Direct western blot analysis of VPS4B expression in K-562 (A), Hep G2 (B), HeLa (C), IB4 (D), MIA PaCa-2 (E) and MCF7 (F) whole cell lysates.



VPS4B (A-11): sc-377162. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in white pulp and cells in red pulp (B).

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. Jung, E., et al. 2020. ESCRT subunit CHMP4B localizes to primary cilia and is required for the structural integrity of the ciliary membrane. *FASEB J.* 34: 1331-1344.
3. Deng, L., et al. 2022. Hepatitis C virus-induced ROS/JNK signaling pathway activates the E3 ubiquitin ligase itch to promote the release of HCV particles via polyubiquitylation of VPS4A. *J. Virol.* 96: e0181121.
4. Guo, Y., et al. 2023. Cytoplasmic YAP1-mediated ESCRT-III assembly promotes autophagic cell death and is ubiquitinated by NEDD4L in breast cancer. *Cancer Commun.* 43: 582-612.

STORAGE

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