

VPS4 (E-8): sc-133122



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.

CHROMOSOMAL LOCATION

Genetic locus: VPS4A (human) mapping to 16q22.1, VPS4B (human) mapping to 18q21.33; Vps4a (mouse) mapping to 8 D3, Vps4b (mouse) mapping to 1 E2.1.

SOURCE

VPS4 (E-8) is a mouse monoclonal antibody raised against amino acids 1-165 mapping at the N-terminus of VPS4A 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.

VPS4 (E-8) is available conjugated to agarose (sc-133122 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133122 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133122 PE), fluorescein (sc-133122 FITC), Alexa Fluor® 488 (sc-133122 AF488), Alexa Fluor® 546 (sc-133122 AF546), Alexa Fluor® 594 (sc-133122 AF594) or Alexa Fluor® 647 (sc-133122 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133122 AF680) or Alexa Fluor® 790 (sc-133122 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

VPS4 (E-8) is recommended for detection of VPS4A and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: VPS4A (h): 293T Lysate: sc-115958, MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

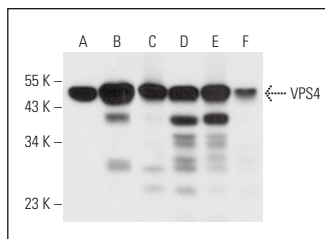
STORAGE

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

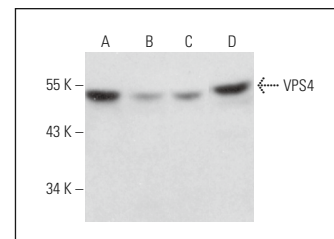
RESEARCH USE

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

DATA



VPS4 (E-8): sc-133122. Western blot analysis of VPS4A expression in non-transfected 293T: sc-117752 (A), human VPS4A transfected 293T: sc-115958 (B), HeLa (C), MCF7 (D), ME-180 (E) and NIH/3T3 (F) whole cell lysates.



VPS4 (E-8): sc-133122. Western blot analysis of VPS4 expression in MCF7 (A), T-47D (B), Neuro-2A (C) and PC-12 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Du, X., et al. 2013. The AAA ATPase VPS4/SKD1 regulates endosomal cholesterol trafficking independently of ESCRT-III. *Traffic* 14: 107-119.
- Ferreira, J.V., et al. 2015. K63 linked ubiquitin chain formation is a signal for HIF1A degradation by chaperone-mediated autophagy. *Sci. Rep.* 5: 10210.
- Willén, K., et al. 2017. Aβ accumulation causes MVB enlargement and is modelled by dominant negative VPS4A. *Mol. Neurodegener.* 12: 61.
- Cabrera, J.R., et al. 2019. The ESCRT-related ATPase VPS4 is modulated by interferon during herpes simplex virus 1 infection. *MBio* 10: e02567-18.
- Negggers, J.E., et al. 2020. Synthetic lethal interaction between the ESCRT paralog enzymes VPS4A and VPS4B in cancers harboring loss of chromosome 18q or 16q. *Cell Rep.* 33: 108493.
- Feurle, P., et al. 2021. SATB2-LEMD2 interaction links nuclear shape plasticity to regulation of cognition-related genes. *EMBO J.* 40: e103701.
- Linares, J.F., et al. 2021. PKCλ/ι inhibition activates an ULK2-mediated interferon response to repress tumorigenesis. *Mol. Cell* 81: 4509-4526.e10.
- Ferreira, J.V., et al. 2022. LAMP2A regulates the loading of proteins into exosomes. *Sci. Adv.* 8: eabm1140.
- Krause, G.J., et al. 2023. Molecular determinants of the crosstalk between endosomal microautophagy and chaperone-mediated autophagy. *Cell Rep.* 42: 113529.

PROTOCOLS

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