SANTA CRUZ BIOTECHNOLOGY, INC.

VPS4 (C-12): sc-21463

SANTA CRUZ BIOTECHNOLOGY
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 pre-vacuolar 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 VPS 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., et al. 2001. TSG101/mammalian VPS23 and mammalian VPS28 interact directly and are recruited to VPS4-induced endosomes. J. Biol. Chem. 276: 11735-11742.
2. Scheuring, S., et al. 2001. Mammalian cells express two VPS4 proteins both of which are involved in intracellular protein trafficking. J. Mol. Biol. 312: 469-480.
3. 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.
4. Perez, O.D., et al. 2001. Resistance is futile: assimilation of cellular machinery by HIV-1. Immunity 15: 687-690.
5. Garrus, J.E., et al. 2001. Tsg101 and the vacuolar protein sorting pathway are essential for HIV-1 budding. Cell 107: 55-65.

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 (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of VPS4A of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21463 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

VPS4 (C-12) is recommended for detection of VPS4A and, to a lesser extent, VPS4B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

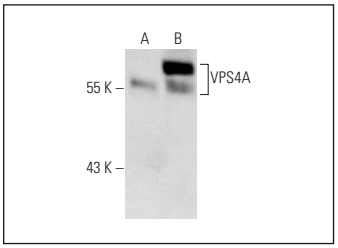
VPS4 (C-12) is also recommended for detection of VPS4A and, to a lesser extent, VPS4B in additional species, including equine, canine and porcine.

Positive Controls: VPS4A (h2): 293T Lysate: sc-178127, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

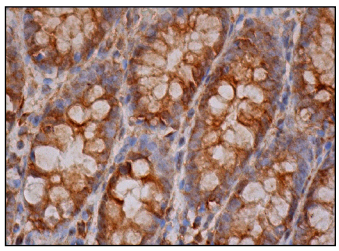
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



VPS4 (C-12): sc-21463. Western blot analysis of VPS4A expression in non-transfected: sc-117752 (**A**) and human VPS4A transfected: sc-178127 (**B**) 293T whole cell lysates.



VPS4 (C-12): sc-21463. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

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