SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase A4 (V-14): sc-69099

BACKGROUND

Vacuolar-type H^+-ATPase (V-ATPase) is a multisubunit enzyme responsible for the acidification of eukaryotic intracellular organelles. V-ATPases pump protons against an electrochemical gradient, while F-ATPases reverse the process, thereby synthesizing ATP. A peripheral V_1 domain, which is responsible for ATP hydrolysis, and an integral V_0 domain, which is responsible for proton translocation, comprise the V-ATPase complex. Nine subunits (A–H) make up the V_1 domain and five subunits (A, D, C, C' and C") make up the V_0 domain. V-ATPase A4 (ATPase, H^+ transporting, lysosomal V_0 subunit a4), also known as ATP6N1B or ATP6N2, is an 840 amino acid multi-pass membrane protein that localizes to the apical cell membrane and exists as a subunit of the V_0 domain. Expressed in fetal and adult kidney, as well as in the inner ear, V-ATPase A4 is involved in the regulation of normal vectorial acid transport into the urine by the kidney. Defects in the gene encoding V-ATPase A4 are the cause of distal renal tubular acidosis with preserved hearing (RTADR), an autosomal recessive disorder that is characterized by metabolic acidosis accompanied by disturbances of potassium balance and urinary calcium solubility.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: ATP6V0A4 (human) mapping to 7q34; Atp6v0a4 (mouse) mapping to 6 B1.

SOURCE

V-ATPase A4 (V-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of V-ATPase A4 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-69099 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

V-ATPase A4 (V-14) is recommended for detection of V-ATPase A4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 V-ATPase A4 siRNA (h): sc-63203, V-ATPase A4 siRNA (m): sc-63204, V-ATPase A4 shRNA Plasmid (h): sc-63203-SH, V-ATPase A4 shRNA Plasmid (m): sc-63204-SH, V-ATPase A4 shRNA (h) Lentiviral Particles: sc-63203-V and V-ATPase A4 shRNA (m) Lentiviral Particles: sc-63204-V.

Molecular Weight of V-ATPase A4: 116 kDa.

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) 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.

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.

PROTOCOLS

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