SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase B2 (C-9): sc-166122

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Vacuolar-type H^+-ATPase (V-ATPase) is a multisubunit enzyme responsible for 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, compose V-ATPase. 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. Like F-ATPase, V-ATPase most likely operates through a rotary mechanism. The V-ATPase V_1 B subunit exists as two isoforms. In the inner ear, the V-ATPase B1 isoform functions in proton secretion and is required to maintain proper endolymph pH and normal auditory function. The gene encoding the human V-ATPase B1 isoform maps to chromosome 2p13.3. Mutations in this gene cause distal renal tubular acidosis associated with sensorineural deafness. The V-ATPase B2 isoform is expressed in kidney and is the only B isoform expressed in osteoclasts. The gene encoding the human V-ATPase B2 isoform maps to chromosome 8p21.3.

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1B2 (human) mapping to 8p21.3; Atp6v1b2 (mouse) mapping to 8 B3.3.

SOURCE

V-ATPase B2 (C-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-38 at the N-terminus of V-ATPase B2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166122 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

V-ATPase B2 (C-9) is recommended for detection of V-ATPase B2 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).

V-ATPase B2 (C-9) is also recommended for detection of V-ATPase B2 in additional species, including canine and bovine.

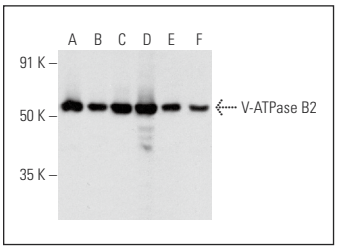
Suitable for use as control antibody for V-ATPase B2 siRNA (h): sc-43517, V-ATPase B2 siRNA (m): sc-43518, V-ATPase B2 shRNA Plasmid (h): sc-43517-SH, V-ATPase B2 shRNA Plasmid (m): sc-43518-SH, V-ATPase B2 shRNA (h) Lentiviral Particles: sc-43517-V and V-ATPase B2 shRNA (m) Lentiviral Particles: sc-43518-V.

Molecular Weight of V-ATPase B2: 56-58 kDa.

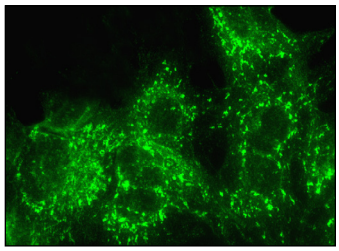
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



V-ATPase B2 (C-9): sc-166122. Western blot analysis of V-ATPase B2 expression in SK-N-SH (**A**), HeLa (**B**), c4 (**C**), RAW 264.7 (**D**), L8 (**E**) and C6 (**F**) whole cell lysates.



V-ATPase B2 (C-9): sc-166122. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and cytoplasmic vesicles localization.

SELECT PRODUCT CITATIONS

1. Yang, N.D., et al. 2014. Artesunate induces cell death in human cancer cells via enhancing lysosomal function and lysosomal degradation of ferritin. J. Biol. Chem. 289: 33425-33441.
2. Shi, Y., et al. 2015. Critical role of CAV1/caveolin-1 in cell stress responses in human breast cancer cells via modulation of lysosomal function and autophagy. Autophagy 11: 769-784.
3. Hirata, H., et al. 2021. PMEPA1 and NEDD4 control the proton production of osteoclasts by regulating vesicular trafficking. FASEB J. 35: e21281.
4. Chen, H., et al. 2023. Autophagy and exosomes coordinately mediate quercetin's protective effects on alcoholic liver disease. J. Nutr. Biochem. 116: 109332.

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 for detailed protocols and support products.