SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase H (G-2): sc-166059

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 H subunit of V-ATPase, also designated SDF is comprised of two polypeptides derived from the same gene. This regulatory subunit plays a critical role in the functional coupling of ATP hydrolysis activity to proton transport in the V-ATPase pump.

REFERENCES

1. Lu, X., et al. 1998. Interactions between HIV-1 Nef and vacuolar ATPase facilitate the internalization of CD4. Immunity 8: 647-656.
2. Geyer, M., et al. 2002. Subunit H of the V-ATPase binds to the medium chain of adaptor protein complex 2 and connects Nef to the endocytic machinery. J. Biol. Chem. 277: 28521-28529.

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1H (human) mapping to 8q11.23; Atp6v1h (mouse) mapping to 1 A1.

SOURCE

V-ATPase H (G-2) is a mouse monoclonal antibody raised against amino acids 184-483 mapping at the C-terminus of V-ATPase H of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

V-ATPase H (G-2) is recommended for detection of V-ATPase H 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).

Suitable for use as control antibody for V-ATPase H siRNA (h): sc-36801, V-ATPase H siRNA (m): sc-36802, V-ATPase H shRNA Plasmid (h): sc-36801-SH, V-ATPase H shRNA Plasmid (m): sc-36802-SH, V-ATPase H shRNA (h) Lentiviral Particles: sc-36801-V and V-ATPase H shRNA (m) Lentiviral Particles: sc-36802-V.

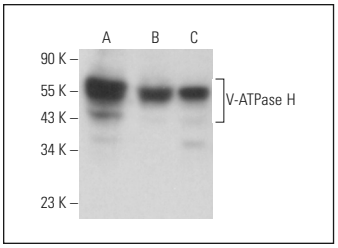
Molecular Weight of V-ATPase H: 50/57 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, HeLa whole cell lysate: sc-2200 or SK-N-SH cell lysate: sc-2410.

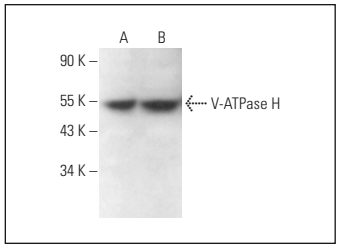
RECOMMENDED SUPPORT REAGENTS

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 H (G-2): sc-166059. Western blot analysis of V-ATPase H expression in SK-N-SH (**A**), Caki-1 (**B**) and HeLa (**C**) whole cell lysates.



V-ATPase H (G-2): sc-166059. Western blot analysis of V-ATPase H expression in SK-N-SH (**A**) and MCF7 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lozupone, F., et al. 2015. TM9SF4 is a novel V-ATPase-interacting protein that modulates tumor pH alterations associated with drug resistance and invasiveness of colon cancer cells. Oncogene 34: 5163-5174.
2. Chung, J., et al. 2015. The mTORC1/4E-BP pathway coordinates hemoglobin production with L-leucine availability. Sci. Signal. 8: ra34.
3. Lugini, L., et al. 2016. Exosomes from human colorectal cancer induce a tumor-like behavior in colonic mesenchymal stromal cells. Oncotarget 7: 50086-50098.

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.