SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase H (E-10): sc-271186

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 HIV1 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.
3. Geyer, M., et al. 2002. Subunit H of the V-ATPase involved in endocytosis shows homology to β-adaptins. Mol. Biol. Cell 13: 2045-2056.
4. Morel, N. 2003. Neurotransmitter release: the dark side of the vacuolar-H^+ATPase. Biol. Cell 95: 453-457.
5. Kawasaki-Nishi, S., et al. 2003. Proton translocation driven by ATP hydrolysis in V-ATPases. FEBS Lett. 545: 76-85.
6. Smith, A.N., et al. 2003. Revised nomenclature for mammalian vacuolar-type H^+-ATPase subunit genes. Mol. Cell 12: 801-803.

CHROMOSOMAL LOCATION

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

SOURCE

V-ATPase H (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 10-41 at the N-terminus of V-ATPase H 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.

Blocking peptide available for competition studies, sc-271186 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

V-ATPase H (E-10) 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), 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).

V-ATPase H (E-10) is also recommended for detection of V-ATPase H in additional species, including equine, canine, bovine, porcine and avian.

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.

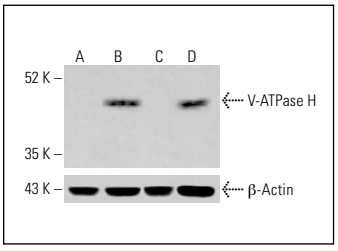
Molecular Weight of V-ATPase H isoforms: 50/57 kDa.

Positive Controls: rat kidney extract: sc-2394, Caki-1 cell lysate: sc-2224 or SK-N-SH cell lysate: sc-2410.

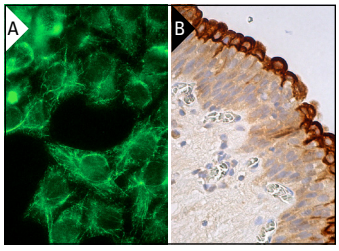
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



V-ATPase H (E-10): sc-271186. Western blot analysis of V-ATPase H expression in untreated K-562 (**A**), chemically-treated K-562 (**B**), untreated HCT-116 (**C**) and chemically-treated HCT-116 (**D**) whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



V-ATPase H (E-10): sc-271186. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (**B**).

RESEARCH USE

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