SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase D1 (D-4): sc-393322

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 D1 (ATPase, H+ transporting, lysosomal, V_0 subunit D1), also known as ATP6V0D1, P39, VATX, VMA6, ATP6D or VPATPD, is the D subunit of the V_0 domain. Expressed ubiquitously, V-ATPase D1 acts in concert with other V_0 subunits to catalytically acidify a variety of intracellular compartments, thereby synthesizing ATP to be used for vacuolar transport.

REFERENCES

1. van Hille, B., et al. 1993. Cloning and tissue distribution of subunits C, D, and E of the human vacuolar H+-ATPase. Biochem. Biophys. Res. Commun. 197: 15-21.
2. Finbow, M.E. and Harrison, M.A. 1997. The vacuolar H+-ATPase: a universal proton pump of eukaryotes. Biochem. J. 324: 697-712.
3. Forgac, M. 1999. Structure and properties of the vacuolar H+-ATPases. J. Biol. Chem. 274: 12951-12954.
4. Agarwal, A.K. and White, P.C. 2000. Structure of the VPATPD gene encoding subunit D of the human vacuolar proton ATPase. Biochem. Biophys. Res. Commun. 279: 543-547.
5. Nishi, T. and Forgac, M. 2002. The vacuolar (H+)-ATPases—nature's most versatile proton pumps. Nat. Rev. Mol. Cell Biol. 3: 94-103.

CHROMOSOMAL LOCATION

Genetic locus: ATP6V0D1 (human) mapping to 16q22.1; Atp6v0d1 (mouse) mapping to 8 D3.

SOURCE

V-ATPase D1 (D-4) is a mouse monoclonal antibody raised against amino acids 66-105 mapping within an internal region of V-ATPase D1 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.

V-ATPase D1 (D-4) is available conjugated to agarose (sc-393322 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393322 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393322 PE), fluorescein (sc-393322 FITC), Alexa Fluor® 488 (sc-393322 AF488), Alexa Fluor® 546 (sc-393322 AF546), Alexa Fluor® 594 (sc-393322 AF594) or Alexa Fluor® 647 (sc-393322 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393322 AF680) or Alexa Fluor® 790 (sc-393322 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

V-ATPase D1 (D-4) is recommended for detection of V-ATPase D1 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).

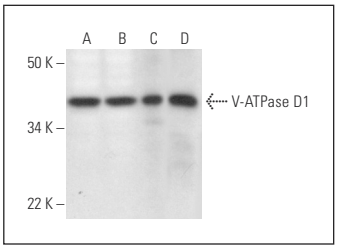
V-ATPase D1 (D-4) is also recommended for detection of V-ATPase D1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for V-ATPase D1 siRNA (h): sc-63207, V-ATPase D1 siRNA (m): sc-63208, V-ATPase D1 shRNA Plasmid (h): sc-63207-SH, V-ATPase D1 shRNA Plasmid (m): sc-63208-SH, V-ATPase D1 shRNA (h) Lentiviral Particles: sc-63207-V and V-ATPase D1 shRNA (m) Lentiviral Particles: sc-63208-V.

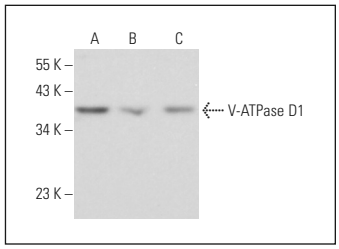
Molecular Weight of V-ATPase D1: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, IMR-32 cell lysate: sc-2409 or human placenta extract: sc-363772.

DATA



V-ATPase D1 (D-4): sc-393322. Western blot analysis of V-ATPase D1 expression in HeLa (**A**) and IMR-32 (**B**) whole cell lysates and human placenta (**C**) and human kidney (**D**) tissue extracts.



V-ATPase D1 (D-4): sc-393322. Western blot analysis of V-ATPase D1 expression in HeLa (**A**), MCF7 (**B**) and JAR (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Breyer, F., et al. 2021. TPL-2 kinase induces phagosome acidification to promote macrophage killing of bacteria. EMBO J. 40: e106188.
2. Tang, Q., et al. 2021. NDST3 deacetylates α-Tubulin and suppresses V-ATPase assembly and lysosomal acidification. EMBO J. 40: e107204.

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.