SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase G2 (A-6): sc-25334

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. In yeast, the V-ATPase G subunit is a soluble subunit that shares homology with the F-ATPase G subunit and may be part of a connection stalk between V_1 and V_0. The G_2 isoform of the G subunit associates with the pore-forming A1C-subunit of L-type calcium channel and aids in proper membrane targeting of the calcium channel. The genes encoding the G1 and G2 V-ATPase subunits map to chromosomes 9q33.1 and 6p21.3, respectively.

REFERENCES

1. Hunt, I.E., et al. 1997. The intriguing evolution of the "b" and "G" subunits in F-type and V-type ATPases: isolation of the vma-10 gene from Neurospora crassa. J. Bioenerg. Biomembr. 29: 533-540.
2. Neville, M.J., et al. 1999. A new member of the Ig superfamily and a V-ATPase G subunit are among the predicted products of novel genes close to the TNF locus in the human MHC. J. Immun. 162: 4745-4754.
3. Gao, T., et al. 2000. Association of L-type calcium channels with a vacuolar H+-ATPase G2 subunit. Biochem. Biophys. Res. Commun. 277: 611-616.
4. Nishi, T., et al. 2002. The vacuolar H+-ATPases—nature's most versatile proton pumps. Nat. Rev. Mol. Cell. Biol. 3: 94-103.
5. LocusLink Report (LocusID: 9550). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1G2 (human) mapping to 6p21.33; Atp6v1g2 (mouse) mapping to 17 B1.

SOURCE

V-ATPase G2 (A-6) is a mouse monoclonal antibody raised against amino acids 39-118 of V-ATPase G2 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.

V-ATPase G2 (A-6) is available conjugated to agarose (sc-25334 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-25334 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25334 PE), fluorescein (sc-25334 FITC), Alexa Fluor® 488 (sc-25334 AF488), Alexa Fluor® 546 (sc-25334 AF546), Alexa Fluor® 594 (sc-25334 AF594) or Alexa Fluor® 647 (sc-25334 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25334 AF680) or Alexa Fluor® 790 (sc-25334 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

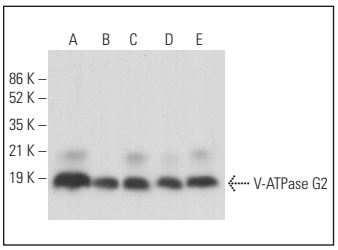
V-ATPase G2 (A-6) is recommended for detection of V-ATPase G2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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).

Suitable for use as control antibody for V-ATPase G2 siRNA (h): sc-36799, V-ATPase G2 siRNA (m): sc-36800, V-ATPase G2 shRNA Plasmid (h): sc-36799-SH, V-ATPase G2 shRNA Plasmid (m): sc-36800-SH, V-ATPase G2 shRNA (h) Lentiviral Particles: sc-36799-V and V-ATPase G2 shRNA (m) Lentiviral Particles: sc-36800-V.

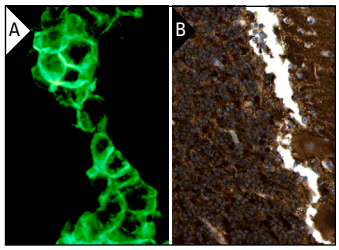
Molecular Weight of V-ATPase G2: 18 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, rat cerebellum extract: sc-2398 or mouse cerebellum extract: sc-2403.

DATA



V-ATPase G2 (A-6): sc-25334. Western blot analysis of V-ATPase G2 expression in IMR-32 whole cell lysate (**A**) and mouse cerebellum (**B**), rat cerebellum (**C**), human cerebellum (**D**) and rat brain (**E**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



V-ATPase G2 (A-6): sc-25334. Immunofluorescence staining of methanol-fixed SK-N-MC cells showing cytoplasmic and membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of cells in granular and molecular layers and Purkinje cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Nagata, M., et al. 2018. Dram1 regulates DNA damage-induced alternative autophagy. Cell Stress 2: 55-65.

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.