

V-ATPase G2 (A-17): sc-31472

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 V₁ domain, which is responsible for ATP hydrolysis, and an integral V₀ domain, which is responsible for proton translocation, compose V-ATPase. Nine subunits (A-H) make up the V₁ domain and five subunits (a, d, c, c' and c'') make up the V₀ 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 V₁ and V₀. The G₂ isoform of the G subunit associates with the pore-forming α 1 C-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 6p21.33, respectively.

REFERENCES

- 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.
- 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. Immunol.* 162: 4745-4754.
- 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.
- Nishi, T., et al. 2002. The vacuolar H⁺-ATPases—nature's most versatile proton pumps. *Nat. Rev. Mol. Cell Biol.* 3: 94-103.
- 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-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of V-ATPase G2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31472 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 G2 (A-17) is recommended for detection of V-ATPase subunit G isoform 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 G2 (A-17) is also recommended for detection of V-ATPase subunit G isoform 2 in additional species, including equine, canine, bovine and porcine.

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.

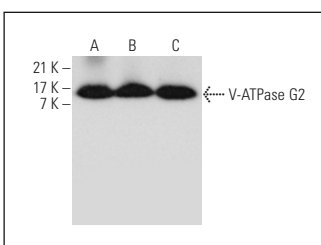
Molecular Weight of V-ATPase G2: 18 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or mouse cerebellum extract: sc-2403.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



V-ATPase G2 (A-17): sc-31472. Western blot analysis of V-ATPase G2 expression in mouse brain (A), rat brain (B) and mouse cerebellum (C) tissue extracts.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.