

# V-ATPase G2 (E-20): sc-21226

## BACKGROUND

Vacuolar-type H<sup>+</sup>-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 V<sub>1</sub> and V<sub>0</sub>. The G<sub>2</sub> 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 G<sub>1</sub> and G<sub>2</sub> V-ATPase subunits map to chromosomes 9q32 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<sup>+</sup>-ATPase G2 subunit. *Biochem. Biophys. Res. Commun.* 277: 611-616.
- Nishi, T., et al. 2002. The vacuolar H<sup>+</sup>-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 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of V-ATPase G2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-21226 P, (100 µg 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 (E-20) 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), 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 (E-20) 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.