

V-ATPase B2 (F-10): sc-515053

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. The V-ATPase V₁ B subunit exists as two isoforms. In the inner ear, the V-ATPase B1 isoform functions in proton secretion and is required to maintain proper endolymph pH and normal auditory function. The gene encoding the human V-ATPase B1 isoform maps to chromosome 2cen-q13. Mutations in this gene cause distal renal tubular acidosis associated with sensorineural deafness. The V-ATPase B2 isoform is expressed in kidney and is the only B isoform expressed in osteoclasts. The gene encoding the human V-ATPase B2 isoform maps to chromosome 8p21.3.

REFERENCES

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- Ozcelik, T., et al. 1991. Chromosomal assignments of genes for vacuolar (endomembrane) proton pump subunits VPP1/Vpp-1 (116 kDa) and VPP3/Vpp-3 (58 kDa) in human and mouse. *Cytogenet. Cell Genet.* 58: 2008-2009.
- Nelson, R.D., et al. 1992. Selectively amplified expression of an isoform of the vacuolar H⁺-ATPase 56-kilodalton subunit in renal intercalated cells. *Proc. Natl. Acad. Sci. USA* 89: 3541-3545.
- Lee, B.S., et al. 1996. Osteoclasts express the B2 isoform of vacuolar H⁺-ATPase intracellularly and on their plasma membranes. *Am. J. Physiol.* 270: 382-388.
- Karet, F.E., et al. 1999. Mutations in the gene encoding B1 subunit of H⁺-ATPase cause renal tubular acidosis with sensorineural deafness. *Nat. Genet.* 21: 84-90.
- Nishi, T., et al. 2002. The vacuolar H⁺-ATPases—nature's most versatile proton pumps. *Nat. Rev. Mol. Cell. Biol.* 3: 94-103.

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1B2 (human) mapping to 8p21.3; Atp6v1b2 (mouse) mapping to 8 B3.3.

SOURCE

V-ATPase B2 (F-10) is a mouse monoclonal antibody raised against amino acids 1-55 mapping at the N-terminus of V-ATPase B2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

V-ATPase B2 (F-10) is recommended for detection of V-ATPase B2 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).

Suitable for use as control antibody for V-ATPase B2 siRNA (h): sc-43517, V-ATPase B2 siRNA (m): sc-43518, V-ATPase B2 shRNA Plasmid (h): sc-43517-SH, V-ATPase B2 shRNA Plasmid (m): sc-43518-SH, V-ATPase B2 shRNA (h) Lentiviral Particles: sc-43517-V and V-ATPase B2 shRNA (m) Lentiviral Particles: sc-43518-V.

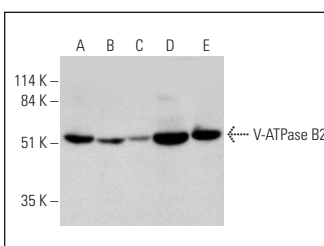
Molecular Weight of V-ATPase B2: 56-58 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, SK-N-SH cell lysate: sc-2410 or U-87 MG cell lysate: sc-2411.

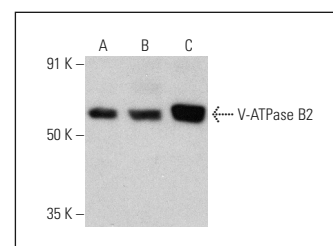
RECOMMENDED SUPPORT REAGENTS

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, 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 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.

DATA



V-ATPase B2 (F-10): sc-515053. Western blot analysis of V-ATPase B2 expression in SK-N-SH (A), U-87 MG (B) and HEK293 (C) whole cell lysates and rat brain (D) and human brain (E) tissue extracts.



V-ATPase B2 (F-10): sc-515053. Western blot analysis of V-ATPase B2 expression in JAR (A), c4 (B) and RAW 264.7 (C) whole cell lysates.

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.