

V-ATPase B1 (m2): 293T Lysate: sc-124513

BACKGROUND

Vacuolar-type H⁺-ATPase (V-ATPase) is a multi-subunit 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 2q13.1. 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

1. Bernasconi, P., et al. 1990. An mRNA from human brain encodes an isoform of the B subunit of the vacuolar H⁺-ATPase. *J. Biol. Chem.* 265: 17428-17431.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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: Atp6v1b1 (mouse) mapping to 6 C3.

PRODUCT

V-ATPase B1 (m2): 293T Lysate represents a lysate of mouse V-ATPase B1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

V-ATPase B1 (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive V-ATPase B1 antibodies. Recommended use: 10-20 µl per lane.

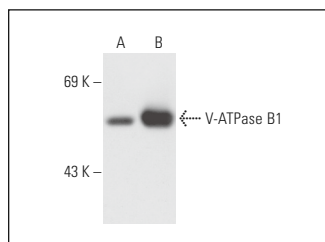
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

V-ATPase B1/2 (F-6): sc-55544 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse V-ATPase B1 expression in V-ATPase B1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



V-ATPase B1/2 (F-6): sc-55544. Western blot analysis of V-ATPase B1 expression in non-transfected: sc-117752 (A) and mouse V-ATPase B1 transfected: sc-124513 (B) 293T whole cell lysates.

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.