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SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase B2 (m3): 293T Lysate: sc-124517

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 a 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. The V-ATPase V_1 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 8 B3.3.

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: Atp6v1b2 (mouse) mapping to 8 B3.3.

PRODUCT

V-ATPase B2 (m3): 293T Lysate represents a lysate of mouse V-ATPase B2 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 B2 (m3): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive V-ATPase B2 antibodies. Recommended use: 10-20 µl per lane.

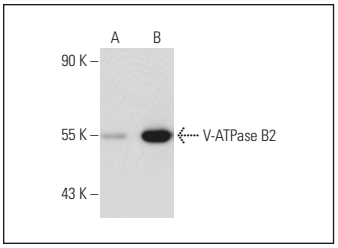
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

V-ATPase B2 (D-11): sc-166045 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse V-ATPase B2 expression in V-ATPase B2 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 B2 (D-11): sc-166045. Western blot analysis of V-ATPase B2 expression in non-transfected: sc-117752 (**A**) and mouse V-ATPase B2 transfected: sc-124517 (**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.