SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase B1 (N-19): sc-31463

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 a 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 2p13.3. 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 8p22-p21.

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.

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1B1 (human) mapping to 2p13.3; Atp6v1b1 (mouse) mapping to 6 C3.

SOURCE

V-ATPase B1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of V-ATPase B1 of human origin.

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.

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-31463 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

V-ATPase B1 (N-19) is recommended for detection of V-ATPase B1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with V-ATPase B2.

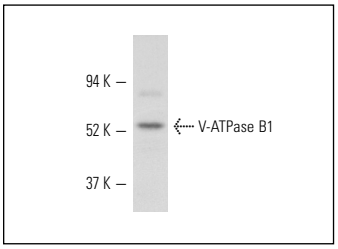
V-ATPase B1 (N-19) is also recommended for detection of V-ATPase B1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for V-ATPase B1 siRNA (h): sc-36787, V-ATPase B1 siRNA (m): sc-36788, V-ATPase B1 shRNA Plasmid (h): sc-36787-SH, V-ATPase B1 shRNA Plasmid (m): sc-36788-SH, V-ATPase B1 shRNA (h) Lentiviral Particles: sc-36787-V and V-ATPase B1 shRNA (m) Lentiviral Particles: sc-36788-V.

Molecular Weight of V-ATPase B1: 56-58 kDa.

Positive Controls: mouse kidney extract: sc-2255 or rat kidney extract: sc-2394.

DATA



V-ATPase B1 (N-19): sc-31463. Western blot analysis of V-ATPase B1 expression in mouse kidney tissue extract.

SELECT PRODUCT CITATIONS

1. Purkerson, J.M., et al. 2010. Adaptation to metabolic acidosis and its recovery are associated with changes in anion exchanger distribution and expression in the cortical collecting duct. Kidney Int. 78: 993-1005.