SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase B2 (D-11): sc-166045

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 8p21.3.

CHROMOSOMAL LOCATION

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

SOURCE

V-ATPase B2 (D-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-38 at the N-terminus of V-ATPase B2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

V-ATPase B2 (D-11) is available conjugated to agarose (sc-166045 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166045 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166045 PE), fluorescein (sc-166045 FITC), Alexa Fluor® 488 (sc-166045 AF488), Alexa Fluor® 546 (sc-166045 AF546), Alexa Fluor® 594 (sc-166045 AF594) or Alexa Fluor® 647 (sc-166045 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166045 AF680) or Alexa Fluor® 790 (sc-166045 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166045 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

V-ATPase B2 (D-11) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

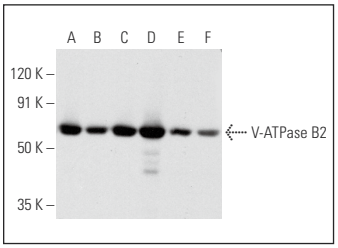
V-ATPase B2 (D-11) is also recommended for detection of V-ATPase B2 in additional species, including canine and bovine.

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.

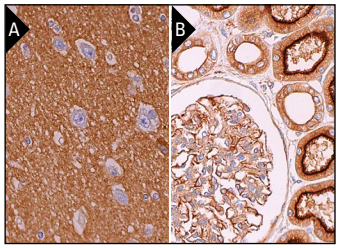
Molecular Weight of V-ATPase B2: 56-58 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, C6 whole cell lysate: sc-364373 or c4 whole cell lysate: sc-364186.

DATA



V-ATPase B2 (D-11): sc-166045. Western blot analysis of V-ATPase B2 expression in SK-N-SH (**A**), HeLa (**B**), c4 (**C**), RAW 264.7 (**D**), L8 (**E**) and C6 (**F**) whole cell lysates.



V-ATPase B2 (D-11): sc-166045. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing neuropil staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in glomeruli and apical membrane and cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Perez, A.P., et al. 2016. Pubertal exposure to ethinylestradiol promotes different effects on the morphology of the prostate of the male and female gerbil during aging. Environ. Toxicol. 205: 139-153.
2. Li, Z., et al. 2020. Roles of vacuolar H^+-ATPase in mice treated with norepinephrine and acetylcholine. Int. J. Clin. Exp. Pathol. 13: 1300-1312.
3. Singh, J., et al. 2022. Cross-linking of the endolysosomal system reveals potential flotillin structures and cargo. Nat. Commun. 13: 6212.
4. Akter, F., et al. 2023. Multi cell line analysis of lysosomal proteomes reveals unique features and novel lysosomal proteins. Mol. Cell. Proteomics 22: 100509.

RESEARCH USE

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