SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase B1/2 (F-6): sc-55544

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 an integral V_0 domain, which is responsible for proton trans-location, compose V-ATPase. Nine subunits (A-H) make up the V_1 domain and five subunits (a, d, c, c' and'') 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 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 8p21.3.

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1B1 (human) mapping to 2q13.3, ATP6V1B2 (human) mapping to 8p21.3; Atp6v1b1 (mouse) mapping to 6 C3, Atp6v1b2 (mouse) mapping to 8 B3.3.

SOURCE

V-ATPase B1/2 (F-6) is a mouse monoclonal antibody raised against amino acids 334-513 mapping at the C-terminus of V-ATPase B1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

V-ATPase B1/2 (F-6) is available conjugated to agarose (sc-55544 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55544 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55544 PE), fluorescein (sc-55544 FITC), Alexa Fluor® 488 (sc-55544 AF488), Alexa Fluor® 546 (sc-55544 AF546), Alexa Fluor® 594 (sc-55544 AF594) or Alexa Fluor® 647 (sc-55544 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55544 AF680) or Alexa Fluor® 790 (sc-55544 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

V-ATPase B1/2 (F-6) is recommended for detection of V-ATPase B and 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).

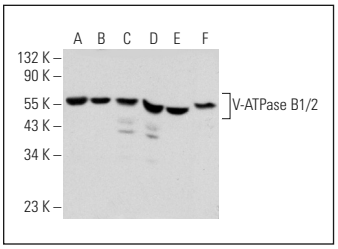
Molecular Weight of V-ATPase B1/2: 56 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, CSMLO whole cell lysate: sc-364369 or C6 whole cell lysate: sc-364373.

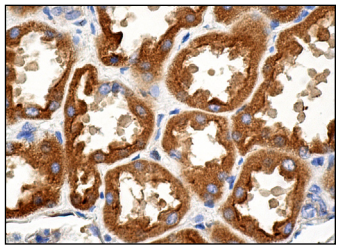
STORAGE

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

DATA



V-ATPase B1/2 (F-6): sc-55544. Western blot analysis of V-ATPase B1/2 expression in SK-N-SH (**A**), Caki-1 (**B**), CSMLO (**C**), C3H/10T1/2 (**D**), NRK (**E**) and C6 (**F**) whole cell lysates.



V-ATPase B1/2 (F-6): sc-55544. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Ji, B., et al. 2009. A comparative proteomics analysis of rat mitochondria from the cerebral cortex and hippocampus in response to antipsychotic medications. J. Proteome Res. 8: 3633-3641.
2. Gao, X., et al. 2010. Deletion of hensin/DMBT1 blocks conversion of β- to α-intercalated cells and induces distal renal tubular acidosis. Proc. Natl. Acad. Sci. USA 107: 21872-21877.
3. Nylandsted, J., et al. 2011. ErbB2-associated changes in the lysosomal proteome. Proteomics 11: 2830-2838.
4. Armstrong, A., et al. 2014. Lysosomal network proteins as potential novel CSF biomarkers for Alzheimer's disease. Neuromolecular Med. 16: 150-160.
5. Purkerson, J.M., et al. 2015. Distinct α-intercalated cell morphology and its modification by acidosis define regions of the collecting duct. Am. J. Physiol. Renal Physiol. 309: F464-F473.
6. Diehl, J., et al. 2016. Expression and localization of GPR91 and GPR99 in murine organs. Cell Tissue Res. 364: 245-262.
7. Benitez, B.A. and Sands, M.S. 2017. Primary fibroblasts from CSPα mutation carriers recapitulate hallmarks of the adult onset neuronal ceroid lipofuscinosis. Sci. Rep. 7: 6332.
8. Chen, L., et al. 2018. Highly tamoxifen-inducible principal cell-specific Cre mice with complete fidelity in cell specificity and no leakiness. Am. J. Physiol. Renal Physiol. 314: F572-F583.
9. Iervolino, A., et al. 2018. Integrin β1 is crucial for urinary concentrating ability and renal medulla architecture in adult mice. Front. Physiol. 9: 1273.
10. Mohammad, A.H., et al. 2019. V-ATPase-associated prorenin receptor is upregulated in prostate cancer after PTEN loss. Oncotarget 10: 4923-4936.

RESEARCH USE

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