

V-ATPase D (A-11): sc-390164

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 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. V-ATPase C is an auxiliary subunit with ubiquitous expression.

REFERENCES

1. Nelson, H., Mandiyan, S., Noumi, T., Moriyama, Y., Miedel, M.C. and Nelson, N. 1990. Molecular cloning of cDNA encoding the C subunit of H⁺-ATPase from bovine chromaffin granules. *J. Biol. Chem.* 265: 20390-20393.
2. van Hille, B., Vanek, M., Richener, H., Green, J.R. and Bilbe, G. 1993. Cloning and tissue distribution of subunits C, D, and E of the human vacuolar H⁺-ATPase. *Biochem. Biophys. Res. Commun.* 197: 15-21.
3. Hu, R.M., Han, Z.G., Song, H.D., Peng, Y.D., Huang, Q.H., Ren, S.X., Gu, Y.J., Huang, C.H., Li, Y.B., Jiang, C.L., Fu, G., Zhang, Q.H., Gu, B.W., Dai, M., Mao, Y.F., Gao, G.F., Rong, R., Ye, M., Zhou, J., Xu, S.H., Gu, J., et al. 2000. Gene expression profiling in the human hypothalamus-pituitary-adrenal axis and full-length cDNA cloning. *Proc. Natl. Acad. Sci. USA* 97: 9543-9548.
4. Nishi, T. and Forgac, M. 2002. The vacuolar H⁺-ATPases—nature's most versatile proton pumps. *Nat. Rev. Mol. Cell Biol.* 3: 94-103.
5. LocusLink Report (LocusID: 528). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: ATP6V1D (human) mapping to 14q23.3; Atp6v1d (mouse) mapping to 12 C3.

SOURCE

V-ATPase D (A-11) is a mouse monoclonal antibody raised against a peptide mapping near the C-terminus of V-ATPase D of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-390164 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.

RESEARCH USE

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

APPLICATIONS

V-ATPase D (A-11) is recommended for detection of V-ATPase D 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for V-ATPase D siRNA (h): sc-36791, V-ATPase D siRNA (m): sc-36792, V-ATPase D shRNA Plasmid (h): sc-36791-SH, V-ATPase D shRNA Plasmid (m): sc-36792-SH, V-ATPase D shRNA (h) Lentiviral Particles: sc-36791-V and V-ATPase D shRNA (m) Lentiviral Particles: sc-36792-V.

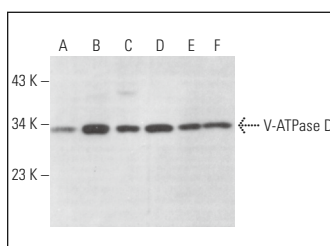
Molecular Weight of V-ATPase D: 38 kDa.

Positive Controls: mouse brain extract: sc-2253, U-87 MG cell lysate: sc-2411 or SK-N-SH cell lysate: sc-2410.

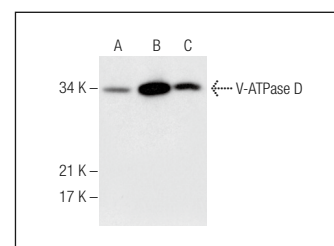
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



V-ATPase D (A-11): sc-390164. Western blot analysis of V-ATPase D expression in SK-N-SH (A), U-87 MG (B), TF-1 (C), NIH/3T3 (D), EOC 20 (E) and C6 (F) whole cell lysates.



V-ATPase D (A-11): sc-390164. Western blot analysis of V-ATPase D expression in SK-N-SH whole cell lysate (A) and mouse brain (B) and human hippocampus (C) tissue extracts.

SELECT PRODUCT CITATIONS

1. Chung, C.Y., Shin, H.R., Berdan, C.A., Ford, B., Ward, C.C., Olzmann, J.A., Zoncu, R. and Nomura, D.K. 2019. Covalent targeting of the vacuolar H⁺-ATPase activates autophagy via mTORC1 inhibition. *Nat. Chem. Biol.* 15: 776-785.

PROTOCOLS

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