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ATP2C1 Antibody
Catalog # ASC11314

Specification

ATP2C1 Antibody - Product Information

Application	**WB, IHC-P, IF, E**
Primary Accession	P98194
Other Accession	NP_001001486, 312836765
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**ATP2C1 antibody can be used for detection of ATP2C1 by Western blot at 1 µg/mL. Antibody can also be used for immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.**

ATP2C1 Antibody - Additional Information

Gene ID **27032**

Target/Specificity
ATP2C1; At least four isoforms of ATP2C1 are known to exist; this antibody will recognize only the three longest isoforms. ATP2C1 antibody will not cross-react with ATP2C2.

Reconstitution & Storage
ATP2C1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
ATP2C1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

ATP2C1 Antibody - Protein Information

Name ATP2C1 {ECO:0000303|PubMed:10615129, ECO:0000312|HGNC:HGNC:13211}

Function
ATP-driven pump that supplies the Golgi apparatus with Ca(2+) and Mn(2+) ions, both essential cofactors for processing and trafficking of newly synthesized proteins in the secretory pathway (PubMed:12707275, PubMed:16192278, PubMed:20439740, PubMed:21187401, PubMed:30923126). Within a catalytic cycle, acquires Ca(2+) or Mn(2+) ions on the cytoplasmic side of the membrane and delivers them to the lumenal side. The transfer of ions across the membrane is coupled to ATP hydrolysis and is associated with a transient phosphorylation that shifts the pump conformation

from inward-facing to outward-facing state (PubMed:16192278, PubMed:16332677, PubMed:30923126). Plays a primary role in the maintenance of Ca(2+) homeostasis in the trans-Golgi compartment with a functional impact on Golgi and post-Golgi protein sorting as well as a structural impact on cisternae morphology (PubMed:14632183, PubMed:20439740). Responsible for loading the Golgi stores with Ca(2+) ions in keratinocytes, contributing to keratinocyte differentiation and epidermis integrity (PubMed:10615129, PubMed:14632183, PubMed:20439740). Participates in Ca(2+) and Mn(2+) ions uptake into the Golgi store of hippocampal neurons and regulates protein trafficking required for neural polarity (By similarity). May also play a role in the maintenance of Ca(2+) and Mn(2+) homeostasis and signaling in the cytosol while preventing cytotoxicity (PubMed:21187401).

Cellular Location
Golgi apparatus, trans-Golgi network membrane; Multi-pass membrane protein. Golgi apparatus, Golgi stack membrane; Multi-pass membrane protein. Note=During neuron differentiation, shifts from juxtanuclear Golgi position to multiple Golgi structures distributed over the neural soma with a predominance in the apical dendritic trunk {ECO:0000250|UniProtKB:Q80XR2}

Tissue Location
Found in most tissues except colon, thymus, spleen and leukocytes (PubMed:15831496). Expressed in keratinocytes (at protein level) (PubMed:14632183, PubMed:15831496)

ATP2C1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ATP2C1 Antibody - Images

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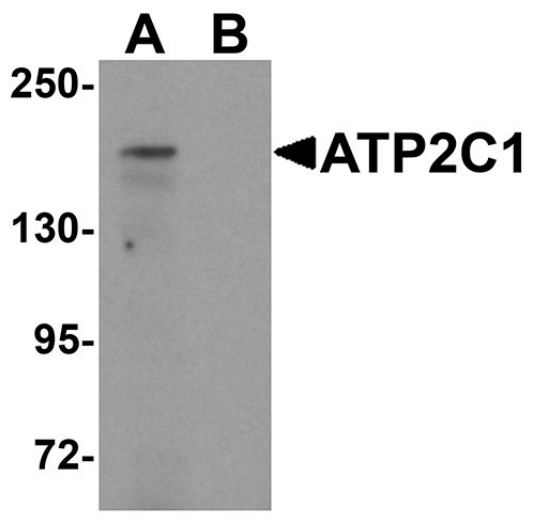
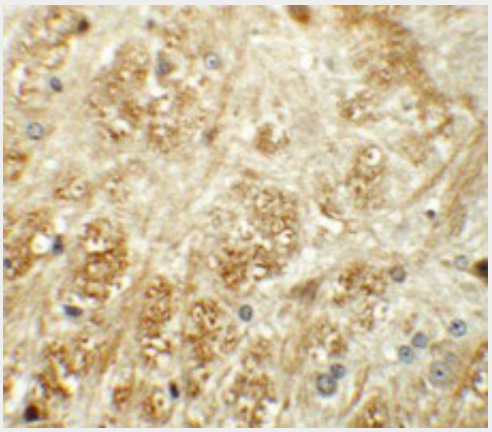
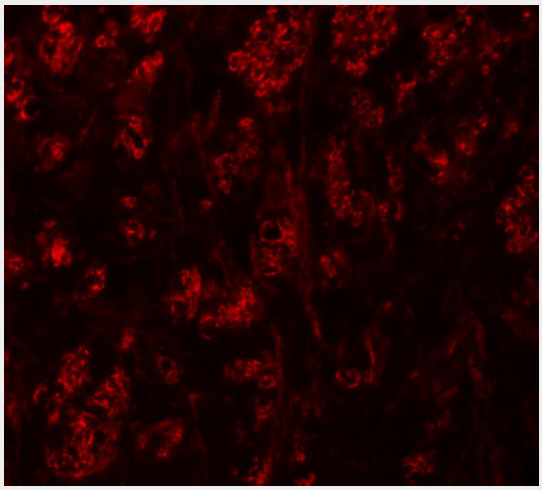


Western blot analysis of ATP2C1 in mouse brain tissue lysate with ATP2C1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of ATP2C1 in mouse brain tissue with ATP2C1 antibody at 5 µg/mL.



Immunofluorescence of ATP2C1 in mouse brain tissue with ATP2C1 antibody at 20 µg/mL.

ATP2C1 Antibody - Background

ATP2C1 Antibody: ATP2C1, also known as secretory pathway Ca2+/Mn2+-ATPase (SPCA) 1, belongs to the family of P-type cation transport ATPases. This magnesium-dependent enzyme

catalyzes the hydrolysis of ATP coupled with the transport of the calcium from the cytosol to the Golgi lumen. Defects in this gene cause Hailey-Hailey disease, an autosomal dominant disorder characterized by persistent blisters and erosions of the skin. Unlike the related protein ATP2C2, ATP2C1 is ubiquitously expressed and displays a lower maximal turnover rate for overall Ca2+-ATPase reaction and a higher apparent affinity for cytosolic Ca2+ activation of phosphorylation. Recent evidence suggests that ATP2C1 is a key regulator of insulin-like growth factor receptor (IGF1R) processing in tumor progression in basal breast cancers.

ATP2C1 Antibody - References

Hu Z, Bonifas JM, Beech J, et al. Mutations in ATP2C1, encoding a calcium pump, cause Hailey-Hailey disease. Nat. Genet. 2000; 24:61-5
Dode L, Andersen JP, Vanoevelen J, et al. Dissection of the functional differences between human secretory pathway Ca2+/Mn2+-ATPase (SPCA) 1 and 2 isoenzymes by steady-state and transient kinetic analyses. J. Biol. Chem. 281:3182-9.
Grice DM, Vetter I, Faddy HM, et al. Golgi calcium pump secretory pathway calcium ATPase 1 (SPCA1) is a key regulator of insulin-like growth factor receptor (IGF1R) processing in the basal-like breast cancer cell line MDA-MB-231. J. Biol. Chem. 2010; 285:37458-66