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ATP2C2 Antibody
Catalog # ASC11315

Specification

ATP2C2 Antibody - Product Information

Application	**WB, IF**
Primary Accession	O75185
Other Accession	NP_055676, 118498343
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**ATP2C2 antibody can be used for detection of ATP2C2 by Western blot at 1 µg/mL. Antibody can also be used for immunofluorescence starting at 20 µg/mL. For immunofluorescence start at 20 µg/mL.**

ATP2C2 Antibody - Additional Information

Gene ID **9914**

Target/Specificity
ATP2C2; At least three isoforms of ATP2C2 are known to exist. ATP2C2 antibody will not cross-react with ATP2C1

Reconstitution & Storage
ATP2C2 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
ATP2C2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

ATP2C2 Antibody - Protein Information

Name ATP2C2 (HGNC:29103)

Synonyms KIAA0703, SPCA2

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:15831496, PubMed:16332677, PubMed:30923126, PubMed:15677451). 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:15831496, PubMed:16332677). Induces Ca(2+) influx independently of its ATP-driven pump function. At the basolateral membrane of mammary epithelial cells, interacts with Ca(2+) channel ORAI1 and mediates Ca(2+) entry independently of the Ca(2+) content of endoplasmic reticulum or Golgi stores. May facilitate transepithelial transport of large quantities of Ca(2+) for milk secretion via activation of Ca(2+) influx channels at the plasma membrane and active Ca(2+) transport at the Golgi apparatus (PubMed:23840669, PubMed:20887894).

Cellular Location
Golgi apparatus, trans-Golgi network membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Basolateral cell membrane {ECO:0000250|UniProtKB:A7L9Z8}; Multi-pass membrane protein

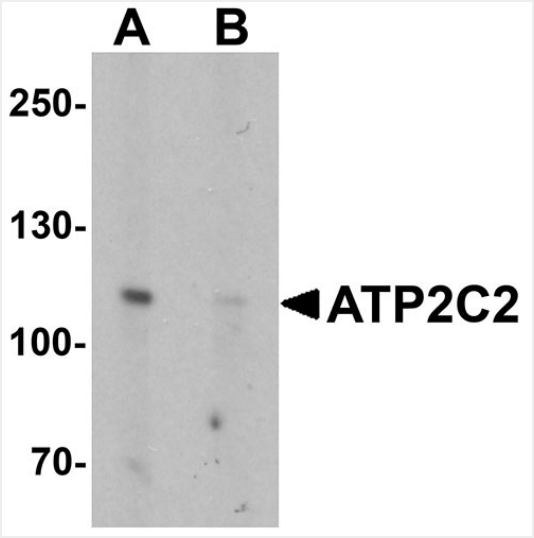
Tissue Location
Highly expressed in the gastrointestinal and respiratory tracts, prostate, thyroid, salivary, and mammary glands (PubMed:15831496). Expressed in colon epithelial cells (at protein level). Expressed in brain and testis (at protein level) (PubMed:15677451).

ATP2C2 Antibody - Protocols

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

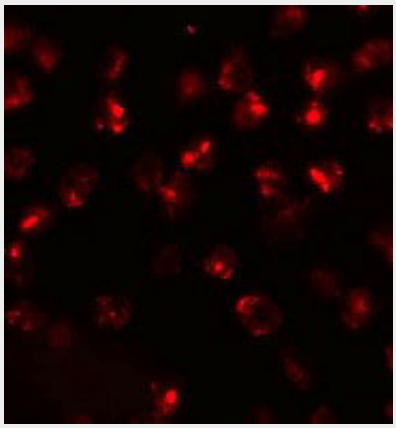
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ATP2C2 Antibody - Images



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Western blot analysis of ATP2C2 in 3T3 cell lysate with ATP2C2 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunofluorescence of ATP2C2 in 3T3 cells with ATP2C2 antibody at 20 µg/mL.

ATP2C2 Antibody - Background

ATP2C2 Antibody: ATP2C2, also known as secretory pathway Ca2+/Mn2+-ATPase (SPCA) 2, 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 the related gene ATP2C1 cause Hailey-Hailey disease, for which ATP2C2 does not compensate, suggesting that ATP2C2 plays other physiological roles. Unlike ATP2C1, ATP2C2 has a much more restricted expression pattern and displays a higher maximal turnover rate for overall Ca2+-ATPase reaction and a lower apparent affinity for cytosolic Ca2+ activation of phosphorylation. Overexpression of ATP2C2 in mammary tumors result a Ca2+ influx via the store-operated Ca2+ channel ORAI1 and independent of the STIM1 and STIM2 sensors.

ATP2C2 Antibody - References

Xiang M, Mohamalawari D, and Rao R. A novel isoform of the secretory pathway Ca2+,Mn(2+)-ATPase, hSPCA2, has unusual properties and is expressed in the brain. J. Biol. Chem. 2005; 280:11608-14.
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.