

ATP2C2 Antibody

Catalog # ASC11315

Product Information

Application	WB, IF, E
Primary Accession	O75185
Other Accession	NP_055676 , 118498343
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	103169
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ATP2C2 antibody can be used for detection of ATP2C2 by Western blot at 1 μ g/mL. Antibody can also be used for immunofluorescence starting at 20 μ g/mL. For immunofluorescence start at 20 μ g/mL.

Additional Information

Gene ID	9914
Other Names	Calcium-transporting ATPase type 2C member 2, ATPase 2C2, 3.6.3.8, Secretory pathway Ca(2+)-ATPase 2, ATP2C2, KIAA0703, SPCA2
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°C for three months and -20°C, 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.

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: 15677451 , PubMed: 15831496 , PubMed: 16332677 , 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 luminal 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:[20887894](#), PubMed:[23840669](#)).

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).

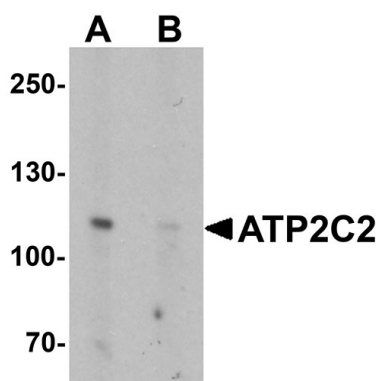
Background

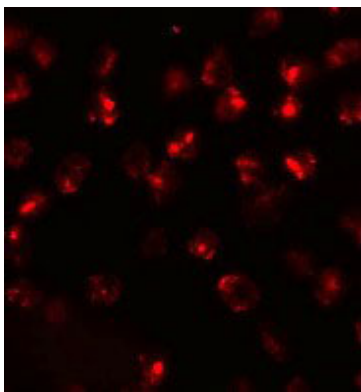
ATP2C2 Antibody: ATP2C2, also known as secretory pathway Ca²⁺/Mn²⁺-ATPase (SPCA) 2, belongs to the family of P-type cation transport ATPases. This magnesium-dependent enzyme catalyzes the hydrolysis of ATP coupled with the transport of the calcium from the cytosol to the Golgi lumen. Defects in the related 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.

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.

Images





Immunofluorescence of ATP2C2 in 3T3 cells with ATP2C2 antibody at 20 $\mu\text{g/mL}$.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.